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## **Relationship between Motivation and Listening Achievement in Learning Chinese as Second Language in Malaysia**

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**Abstract:** Motivation is a major factor in the success or failure of students in learning second language. Low motivation will affect language learning. Therefore, this study will assess the motivation towards subject of Chinese as Second Language in national primary school among Year 4 students as well as examine the relationship between Second Language Motivational Self-System (L2MSS) and listening skills achievement. The instruments used to analyze motivation are Listening Achievement Test (UPM) and L2MSS Questionnaire which are divided into 3 components, namely Ideal Second Language Self (IL2S), Ought to Second Language Self (OL2S) and Second Language Learning Experience (L2LE). A simple random sampling method involving 48 participants was randomly selected in this study. The results of the study showed that the study participants had a significant relationship of IL2S component with listening skills. However, students did not show a significant relationship of OL2S and L2LE components in listening skills achievement. Based on the findings of the study, a discussion on the possible contributing factors is presented along with the implications of the results of this study in the field of motivational studies. Institutions and educators need to plan curricula, syllabi and teaching methodologies accordingly to maintain and strengthen motivation with listening achievement in learning.

**Keywords:** Chinese as Second Language, Listening Achievement, Motivation

### **Introduction**

In the last 15 years, the importance of learning Chinese as a second language (CSL) has become increasingly popular and attracted increasing attention within and outside China (Gong et al., 2020). Today, Chinese language obtained the most speakers in the world (Wang, 2016). Nearly 100 million people (about 16% of the world's population) speak using Chinese language (source: quoted from China News Service (Cai, 2014). Therefore, learning CSL is growing rapidly in the world (Gong et al., 2020; Zhang et al., 2020), a tendency to learn CSL in Malaysia is also increasing. The subjects of Chinese, Tamil, Arabic and other mother tongues such as Iban, Semai Language and Kadazandusun Language are offered as additional subjects to non-native learners (Chuah et al., 2020). Thus, National Primary Chinese Language (Bahasa Cina Sekolah Kebangsaan, *BCSK*) as additional subjects are offered in most national schools in mastering the student's language in Malaysia. This will help non-native speakers to strengthen access and opportunities to learn languages other than their mother tongue. This is in line with the Malaysian Education Blueprint (Pelan Pembangunan Pendidikan Malaysia, *PPPM*) 2013-2025 which was launched to ensure all students from all ethnic groups and communities to learn at

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least three languages to enable them to collaborate and communicate effectively with friends among Malaysians and other countries in today's global world.

## **Literature Reviews**

### **Achievement in Listening Skills**

York et al., (2015) define achievement operationally through a test based on teacher assessment in a test. In other words, achievement is usually measured through examination results where students are tested for each subject. Academic performance will be negatively affected by low academic engagement, limited motivation, and passive behavioral behaviors (Carter et al., 2011). Therefore, academic achievement is one of the most important components in the education system. Good academic achievement serves as a passport to further studies to a higher level. The study of academic achievement is very important to help educators to identify the situations the develop and grow of students. Therefore, the main function of academic achievement is as a yardstick to the amount of knowledge acquired by a person.

However, various studies (Chen et al., 2021; Asbulah et al., 2018; Oga-Baldwin & Fryer, 2020; Oh, 2019; Tan et al., 2016; Wei, 2013) have explained that achievement in listening, speaking, reading and writing skills is closely related to an individual's level of motivation in language learning. There are studies revealing that the motivation of students who learn a second language is at a satisfactory level only. This is in line with the findings of Tan et al., 2016. Thus, the underlying B2 learning mechanism has not been fully explored by highly motivated students (Han, 2017) achieving outstanding achievement in listening in order to acquire and generate knowledge more efficiently (Deci et al., 1991) in learning. Thus, most researchers (Chen et al., 2021; Csize ´r & Kormos, 2009; Henry, 2010, 2011, 2015; Huang, Hsu, & Chen, 2015; Oga-Baldwin & Fryer, 2020; Oh, 2019; Palmer, 2005; Siridetkoon & Dewaele, 2018; Taguchi, Magid, & Papi, 2009) agreed that motivation is a very important factor in language learning, especially it is very important for a person in mastering skills in a second language. Clearly, motivation has been the focus of empirical researchers in studying theories in the context of second language learning in addition to mother tongue in recent times (Boo et al., 2015). Thus, it can be explained that a student cannot achieve goals in learning a second language if they are not motivated in learning a second language.

Researchers (Chen et al., 2021; Henry, 2010, 2011, 2015; Huang, Hsu, & Chen, 2015; Oga-Baldwin & Fryer, 2020; Oh, 2019; Siridetkoon & Dewaele, 2018) believe that second or additional language learners will devote sufficient effort to achieve their goals until successful. Therefore, learning goals are important in learning a second or foreign language. Unfortunately, studies show the level of student motivation is not encouraging in learning CSL. Thus, a study on the relationship of motivation with achievement in listening skills is needed for students learning BCSK as an additional language in primary school.

### **Motivation in Second Language Learning**

Motivation is a process that motivates a person to do something. Motivation is seen as an order or systematic steps to influence an individual in carrying out a task (Abdullah et al., 2019). Thus, research on motivation began to be a highly controversial issue beginning 50 years ago. Since the introduction of motivation by (Gardner & Lambert, 1959), motivational research on second language has undergone many changes. The development of motivation in second language learning begins with the social psychological period (Crookes & Schmidt, 1991; Gardner, 1979), subsequent research has changed to the cognitive-situated period (Crookes & Schmidt, 1991), oriented period process (process-oriented period) (Dörnyei & Otto, 1998; Williams & Burden, 1997) and to the socio-dynamic period (Dörnyei, 2005, 2010). The last motivation theory proposed by Dörnyei (2009) in second language is the Second Language Motivational Self System (L2MSS) to date. The Second Language Motivational Self-System (L2MSS) is used to study second language learning. This theory is based on possible theories and theories of the future of the self in the field of psychology. This theory includes three main components, namely Ideal Second Language Self (IL2S), Ought Second Language Self (OL2S) and Second Language Learning Experience (L2LE). The next section will discuss in more detail the developments in second language learning motivation.

L2MSS consists of three components, namely IL2S, OL2S and L2LE which are strongly influenced by the self -concept used in psychology (Higgins, 1987). The emphasis of the IL2S component in L2MSS is a B2 specific aspect of one's self -ideal. If one wants to speak in a second language, then IL2S will reduce the contradiction between the real self and the ideal. The OL2S component is that a person believes should have a responsible

attitude, duty, multi -tasking to avoid the possibility of negative outcomes. Whereas, this L2LE component corresponds to Higgins (1987) and Rajab et al (2012) i.e. self and more extrinsic instrumental motifs. This L2LE is closely related from the ‘executive’ motive to the learning environment and experience (e.g., teacher, curriculum, peer group, experience).

Currently, researchers are more focused on L2MSS where they measure student motivation and achievement. However, there is still a lack of studies that investigate the motivation of Chinese language learning from the point of view of L2MSS. Therefore, this study attempts to provide a description of listening skills from the point of view of L2MSS among students in BCSK learning. From the introductory statement and problem statement above, the researcher will conduct this study by assessing the upward motivation of students in BCSK learning.

## **Research Objective**

The researcher determined several objectives of this study. The objectives determined by the researcher are as follows:

1. Identify the achievement of listening skills and the level of motivation among primary school students in learning BCSK.
2. Identify the relationship between each component of L2MSS with the achievement of listening skills among primary school students in learning BCSK.

## **Methodology**

### **Research Design**

This study uses quantitative data collection methods. This study uses two types of research instruments, namely the L2MSS Questionnaire and the Listening Assessment Test (UPM). The L2MSS questionnaire contained a five -point Likert scale consisting of 18 items, of which 6 items were associated with IL2S, another 6 with OL2S, and another 6 with L2LE as an instrument. The items of this questionnaire were mostly adapted from Taguchi et al. (2009). Taguchi et al. (2009) used six scales namely from Strongly Disagree to Strongly Agree. Since most local respondents are more accustomed to answering questionnaires that use five scales, the L2MSS Questionnaire will use five scales namely Strongly Agree, Agree, Disagree and Disagree, Disagree, and Strongly Disagree in this questionnaire. This adjustment was made because primary school students may be more familiar with the five -scale questionnaire items compared to the six -scale questionnaire items like the original questionnaire. Prior to distributing the L2MSS Questionnaire, the English version was translated into Bahasa Malaysia and the language used was appropriate to the level of the students. In addition, the Listening Assessment Test (UPM) instrument was also used in this study.

Moreover, the sampling technique used in this study is simple sampling. With this, the study sample involved is 48 Year 4 students from six national schools. The participants meet the characteristics required in this study who have received education under BCSK subjects in national primary schools from Year 1 to Year 3. Table 1 shows the demographics of the participants involved in this study.

**Table 1. Demographics by study participants involved in the study**

Demographics	Frequency (n=48)	Percentage (%)
Gender		
Male	23	47.92
Female	25	52.08
Age		
9	-	-
10	48	100
11	-	-
Races		
Malay	44	91.67
Chinese	1	0.02
India	2	0.042
Other	1	0.02



## Data Analysis

Data obtained and processed from the L2MSS and UPM Questionnaires were included in SPSS 23.0. Part A of the L2MSS Questionnaire is a form of participant background information and feedback on the questionnaire items. Background information is about gender, last year's BCSK results and age. Participants' responses to the questionnaire items were calculated in the form of five scales where Strongly Agree equals five points, Agree equals four points, No opinion equals three points, Disagree equals two points, and finally Strongly Disagree equals one eyes. Meanwhile, UPM contains 20 questions taken from instructional materials used by students in classes. UPM Instrument and L2MSS Questionnaire were used to answer research questions 1 and 2.

### Research Objective 1: Achievement of listening skills and the level of motivation among primary school students in learning BCSK.

Based on Table 1 shows the analysis of UPM, found that the level of mastery of listening skills is (mean = 8.58, SD = 2.923) which is at a high level. Meanwhile, Table 1 also shows the analysis of L2MSS, found that the level of mastery of listening skills is (mean = 8.58, SD = 2.923) which is at a high level. There are three components that contribute to the overall mean of second language learning motivation including IL2S, OL2S and L2LE. Among the three components of L2MSS, IL2S ranked highest (M = 3.93, SD = .687), L2LE was in second place (M = 3.18, SD = .862), and OL2S was in third place (M = 3.05, SD = .98). The IL2S mean score is the highest among the L2MSS components, while the OL2S mean score is the lowest among the L2MSS components and this is similar to the Dornyei & Chan (2013) study.

Table 2. Levels of UPM and L2MSS for BCSK students

	Mean	SD
UPM	8.58	2.923
L2MSS		
IL2S component	3.93	.687
OL2S component	3.18	.862
L2LE component	3.05	.978

### Research Objective 2: Relationship between each component of L2MSS with the achievement of listening skills among primary school students in learning BCSK.

To obtain the relationship between UPM and L2MSS scores, Pearson (r) correlation was used. This formula was performed to look at the relationship between student scores and each component of L2MSS, namely IL2S, OL2S and L2LE. Finally, to see to what extent each component of L2MSS students can predict achievement in listening skills. Table 2 shows Guilford's guidelines (from Rodziah, 2004) in determining the strength of a relationship that is very weak ( $r < 0.20$ ), followed by a weak relationship ( $r = 0.20$  to  $0.40$ ), moderate ( $r = 0.40$  to  $0.70$ ), strong ( $r = 0.70$  to  $0.90$ ) and very strong ( $r < 0.90$ ).

Table 2. Value of the correlation coefficient with the strength of the relationship

Correlation coefficient, r	Strength of the relationship
Less than 0.20	Very weak
0.20-0.40	Weak
0.40-0.70	Average
0.70-0.90	Strong
More than 0.90	Very strong

Source: Rodziah, 2004

Table 3. Correlation between UPM's achievement and IL2S component in L2MSS

		UPM	IL2S
UPM	Pearson Correlation	1	.420
	Sig. (2-tailed)		.040
	N	48	48
IL2S	Pearson Correlation	.420	1
	Sig. (2-tailed)	.040	
	N	48	48

Table 3 shows the correlation between UPM's achievement in BCSK learning with the IL2S component. Based on Guilford guidelines (Table 2), the relationship between L2MSS motivation with listening skills achievement was moderate [ $r(48) = 0.42$ ] and showed significant ( $p < .05$ ) between listening skills achievement with IL2S component level in L2MSS motivation. This indicates a significant relationship between the level of IL2S component with the achievement of listening skills. Next, Table 4 shows the correlation between UPM's achievement in BCSK learning with the OL2S component. Based on Guilford guidelines (Table 2), the relationship between L2MSS motivation and BCSK listening skills achievement was weak [ $r(48) = 0.110$ ] and insignificant ( $p < .456$ ) between listening skills achievement and OL2S component levels in L2MSS motivation. This indicates that there is no significant relationship between the level of OL2S component in L2MSS motivation with the achievement of listening skills.

Table 4. Correlation between UPM's achievement and OL2S component in L2MSS

		UPM	OL2S
UPM	Pearson Correlation	1	.110
	Sig. (2-tailed)		.456
	N	48	48
OL2S	Pearson Correlation	.110	1
	Sig. (2-tailed)	.456	
	N	48	48

Furthermore, Table 5 shows the correlation between UPM's achievement in learning with the L2LE component. Based on Guilford guidelines (Table 2), the relationship between L2MSS motivation with listening skills achievement was weak [ $r(48) = 0.137$ ] and insignificant ( $p < .355$ ) between listening skills achievement with L2LE component levels in L2MSS motivation. The null hypothesis is rejected. This indicates that there is no significant relationship between the level of L2LE component in L2MSS motivation with listening skills achievement.

Table 5. Correlation between UPM's achievement and L2LE component in L2MSS

		UPM	L2LE
UPM	Pearson Correlation	1	.137
	Sig. (2-tailed)		.355
	N	48	48
L2LE	Pearson Correlation	.137	1
	Sig. (2-tailed)	.355	
	N	48	48

## Discussion

The IL2S component was shown to have a significant relationship with listening skills in BCSK learning. These findings are supported by the study of Rahman & Sahayu (2020) who explain motivation as an important element in producing perfect learning. Most of the study participants were of the opinion that IL2S motivation had a greater impact on the way of learning and achievement of UPM. Garavalia & Gredler (2002) state that students who have effective goals, use appropriate learning strategies and assess learning needs, tend to achieve higher levels than other students. The IL2S component in L2MSS motivation has a significant relationship with student academic achievement. A significant positive relationship between these two variables is supported by the findings from (Halim et al., 2017) who found motivation to be important for academic achievement. Furthermore, the correlation between UPM and IL2S may be associated with the young people of the study participants being too idealistic towards IL2S. Instead of describing the realistic possibilities of themselves in the future, study participants on IL2S may reflect their hopes and positive attitudes toward their future.

However, the OL2S component and the L2LE component showed no significant relationship with listening skills in BCSK learning. This may be due to the weak learning drive in the student. The findings of this study are contrary to Lamb (2012) who showed that L2LE is the most significant component by high school students from Indonesia in language learning. This is also supported by (Tan et al., 2016) who proved that university students who are taking Mandarin courses have a significant correlation between achievement and L2LE. However, the age of the study participants should also be taken into account. This may be due to the young age of the study participants, so this causes them to lack the desire to further their studies to university. This is supported by Dunn and Dunn (1978) who stated that motivation is built when there is an internal urge in students to participate in learning, especially listening skills to BCSK learning. the findings of the study showed

that each study participant had a different level of motivation and was at a moderate level of motivation. The results also found that there is a significant relationship between IL2S and UPM achievement, but there is no significant relationship between OL2S and L2LE with UPM achievement. Thus, this study hopes that the parties involved as well as each individual can play their respective roles in improving excellence in achievement, especially in CSL learning.

## **Conclusion**

In conclusion, Kannan (2019) is of the view that listening is the first step in language learning, whether the child's mother tongue or an additional language before the child is able to speak, read or write. Therefore, listening skills become key skills in human interaction (Ismail et al., 2011). This is in line with (Vandergrift, 2008) that listening is the most important skill for second/foreign language learning, especially in the early stages. Motivation is seen to have its own importance in the life of each individual and even in every layer of society and is often associated with the purpose of the student himself and his own interest in a subject or activity.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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## Using Learner Feedback to Improve Teacher Practices in Materials Adaptation

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**Abstract:** Commercial textbooks are doomed to disappoint user expectations to various extents because irrespective of origin (global/local), they are designed with an idealised classroom in mind, and their prescribed configuration probably won't be compatible with the ever-diversifying contexts of L2 teaching and learning. Even in the case of a longtime bestseller, EFL teachers may need to customise the student-purchased materials often based on their perceived learning needs, and learner feedback is not as a rule sought on the mostly teacher-led modifications to the textbook content and procedures. Therefore, this study aimed to demonstrate how Maley's (2011) inputs-processes-outcomes model could be used to evaluate and adapt an intermediate unit on modals of deduction, and examine how a multicultural group of 14 prep students from a major metropolitan state-run university in Turkey reacted to the teacher's adaptive practices. Descriptive analyses of students' activity ratings and retrospective reflections demonstrated that the addition of two scaffolded grammar tasks proved better for generating student interest and facilitating learning than replacement of another guessing game with the relatively more open and difficult task on video-based end-of-unit writing activity. Despite being independent users (B1), the participants indicated greater liking for the use of visual aids, ample practice opportunities, collaborative group work, explicit focus on grammar, and learner translations respectively. While their fewer dislikes mainly concerned video quality, activity difficulty and duration, there was almost unanimous agreement that they finally achieved to develop an increased awareness of how to use modality in English. A quick comparison of the 20-item quiz results also showed a considerable increase in their learning gains, for the mean number of correct answers more than doubled from pre- to post-test.

**Keywords:** Inputs-processes-outcomes model, Materials adaptation, Retrospective evaluation

### Introduction

More than two decades ago, Tomlinson (2001, p. 66) reconceptualised L2 materials as "anything... to facilitate the learning of a language", whether produced in "linguistic, visual, auditory or kinesthetic" forms, and presented through print or other media (e.g. live performance, CDs/DVDs, and the internet). And ever since then, the global coursebook, perhaps the most controversial but indispensable product of the ELT industry, has not remained unaffected by the digital revolution sweeping across sectors and communities. The English course as we know today also has come to "provide for everything" the users could possibly want (e.g. downloadable lessons, online activities, videos, whiteboard and test-generating software), to the extent that teachers are supposed to neither supplement it with anything nor feel guilty about it (Littlejohn, 2011, p. 180). However, the teacher-chosen but student-purchased coursebook as a learning partner is no similar to that Benjamin Franklin (as cited in Abbott, 2019, p. 66) recommended to "keep [one's] eyes wide open [for] before marriage [adoption], half-shut afterwards". In the presence of even the most compatible match for their unique classroom, the responsible teacher probably won't fail her learners, and shall employ a range of adaptation strategies in an attempt to teach and include them all.

Contrary to popular opinion, adaptation is therefore not just about alleviatory treatment, but rather more of "a reconciliatory action between the teacher's proposed plan and their reactions" (Simsek, 2017, p. 278). Despite

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the lack of a common language for describing the ways in which teachers can transform L2 materials, McGrath (2013) has rightly indicated that three major distinctions could at least be derived from various schemes (e.g. Maley, 2011; McDonough & Shaw, 2003; McGrath, 2002; Richards, 2001; Tomlinson & Masuhara, 2004) according to the basic nature of their treatments: i.e. *omission* in the *minus* category, referring to partial use (subtracting quantitatively and abridging qualitatively) and non-use of materials (if given as homework); *addition* in the *plus* category, referring to provision of extras (extending with similar items), unintended and alternative uses (exploiting existing materials creatively), more difficult versions, or totally new materials (expanding texts and tasks); and *modification* in the *zero* category, referring to changes in the sequencing (reordering), language (rewriting) and content (replacing) of activities.

An examination of existing studies on textbook consumption has demonstrated that they seemed preoccupied with investigations into the type (e.g. native/non-native, pre-/in-service, or novice/experienced) of teachers that made more adaptations (e.g. Dunford, 2004; Tsui, 2003; Yan, 2007), their rationales for adapting the materials (e.g. Botelho, 2003; Mede & Yalcin, 2019; Tsobanoglou, 2008), and preferred techniques (e.g. Kara, 2019; Simsek, 2017) in different teaching-learning situations. In spite of the focus on teacher self-reports of textbook use, only a few case studies could still be found where the coursebook researchers enacted adaptation strategies and elicited learner views on their transformations of a given (part/unit of) material (e.g. Duarte & Escobar, 2008; Murphy, 1993). Also, it has long been recommended in the coursebook literature that instead of undertaking the laborious task of evaluating a whole coursebook retrospectively, or satisfying oneself with impressionistic evidence, teachers should conduct micro-evaluations, or more precisely, focus on the effectiveness of the specific tasks that they have actually used in the classroom (Ellis, 1996, 1998, 2011; McGrath, 2002; Murphy, 1993). In this way, they can more easily determine whether their self-chosen materials are deemed useful and engaging by “the students as consumer-readers”, and also how efficient they themselves have proved in “mediating between the materials and the learners” (McGrath, 2002, p. 184; Swales, 1995, p. 6).

For this reason, the current study sought to both instantiate how an intermediate unit from a best-selling global coursebook could be made more learner-friendly through the use of addition, and modification strategies, and explore the impact of teacher adaptations on their learning alongside student perceptions of task effectiveness. Maley’s (2011) inputs-processes-outcomes (IPO) framework was especially chosen for the unit analysis and adaptation because of its practicality in guiding materials evaluation and development. There are three pillars of materials design in the IPO model: *inputs*, referring to varied text types (printed/visual/auditory); *processes*, referring to “a set of generalisable pedagogical procedures” to be applied to the inputs in different combinations, and *outcomes*, referring to the goals to be achieved through participation in the processes, with material (e.g. student compositions) and pedagogical (e.g. improved test performance) types as direct products of student learning, besides educational (e.g. critical thinking skills) and psycho-social (e.g. group solidarity) ones relating to even broader objectives (Maley, 2011, pp. 386-387, 2013). By varying the interaction between the coursebook texts (inputs) and processes, the teacher as “the evaluator-reader” attempted to exercise choice for her learners to develop the desired learning outcomes in this study (Swales, 1995, p. 6). Therefore, the following research questions were addressed here: What are the student-perceived strengths and weaknesses of the adapted lesson? How much student learning has taken place as a result of the adapted lesson?

## **Method**

In this mixed-methods study, the participants were formed by a multicultural group of 14 intermediate students (10 female and four male, aged 17-20) (i.e. five Turkish, six Turkic, two Syrians and one Afghan) studying at the English preparatory class of a major metropolitan state-run university in Turkey due to their easy accessibility. During the descriptive analyses of their activity ratings, reflective writing and quiz results, qualitative and quantitative approaches were utilised simultaneously in order to gain a fuller picture of student reactions to teacher-led adaptations of the course material.

## **Data Collection and Analysis**

For the purpose of judging the effectiveness of the teacher’s adaptive manipulations of an intermediate unit on modals of deduction, a nine-item self-report questionnaire was developed on the basis of related literature (Ellis, 1998; Murphy, 1993). The first six items on the learner questionnaire were closed-ended and got them to decide whether each of the three teacher-created activities were fun/boring, and useful/no-use. As in Murphy’s (1993) example, the students were informed of the alternative glosses for the terms of interest and usefulness (i.e. fun>enjoyable, interesting; useful>makes it easier to learn/understand; no-use>unhelpful, difficult). There were

three open-ended items that wanted the students to reflect on the things they liked and disliked about the adapted lesson, as well as what they gained/learned from it. The students were informed of the study purpose and their anonymity was ensured by assigning case numbers (e.g. S8). They were also allowed to respond to the questionnaire in the common/native language of the classroom (Turkish) to promote their self-expression, and translated participant quotations were amply provided.

Besides seeking learner views, a teacher-made 20-item quiz was administered twice to determine what changes took place in their learning from pre- to post-test. The three-section test was focused on evaluating and raising students' grammatical awareness. As a result, they were required to decide if the modal verbs had the same/different meaning in sentence pairs, correct the mistake (of misjudging probability) in conversations, and complete a speculative text using the target grammar. The qualitative data from the learner questionnaire was subjected to descriptive analysis and quantified in this study. Consequently, ratios of interest and usefulness were calculated on the basis of the 14 students' ratings of teacher-created tasks. The qualitative findings from their written reflections were also formulated as thematic statements, and the frequencies/percentages of occurrence were appropriately tabulated. Finally, the change in the mean number of correct answers was determined to evaluate the student progress over the adapted lesson.

## **Procedure**

The *Headway* series has both been a reliable yardstick for judging the quality of any English course and provided the core methodology around which EFL teachers can build both form-focused and communicative lessons for learners worldwide. For this reason, the tenth unit, entitled "Beyond belief", from *Headway 5e Intermediate Student's Book* (Soars et al., 2019a) was chosen for examination and adaptation with Maley's (2011) inputs-processes-outcomes model. To begin with, two auditory texts (i.e. long dialogues with at least 10 turns) and ten images (i.e. eight with functional and two with decorative purposes) were used for introducing the target language, while written texts might have better served to concentrate conscious attention on the grammatical forms. The inputting texts to the two following activities were however found efficient in providing learners with abundant examples of present and past modals of deduction and developing a feeling for speculative grammar. In the first of the processing activities, the students were requested respectively to look at the illustrations of eight optical illusions (inherently intriguing), guess which of them related to the eight lines (e.g. "It looks like a skeleton. It can't be a lady") from the listening, point to the pictures being talked about, and identify the ones the woman could not see (Soars et al., 2019a, p. 100). In the second case, they were similarly asked to guess what the conversation was about (i.e. what went wrong) just by looking at Rick's side of the conversation, work out with their partners Alex's side, tick the most likely answer (e.g. "He may have forgotten his passport/Hannah could have forgotten her passport") to the comprehension questions (e.g. "Why was Alex furious?"), and finally check their responses again after listening to the full conversation (Soars et al., 2019a, p. 102). Therefore, both processing activities were considered useful for going beyond simple contextualisation in that they guided the learners from the very first into making deductions.

Yet, the participants, being mostly Middle Eastern and Asian expatriates, were accustomed to a traditional didactic culture of education, and seemed to care more about their exam performance. They sought teacher authority on the subject-matter and preferred the grammatical knowledge to be dictated to them. The coursebook's *grammar spots*, on the other hand, made use of discovery questions (e.g. "Which sentence is the most sure? Which are less sure?") in order for the learners to formulate the grammar rules for themselves (Soars et al., 2019a, p. 100). The present material could still have generated enough language focus, if only they were also helped to become aware of the difference between degrees of possibility and dual use of all true modals (not just *must*) for expressing epistemic and non-epistemic (root) meanings (e.g. "Remember *must* also expresses obligation. What is the past of these sentences?") (Soars et al., 2019a, p. 103). Consequently, the addition of two scaffolded grammar activities, i.e. probability scale and bilingual table completion, was considered to do no harm to their learning (Simsek, 2010). In the first of these activities, the students individually ranked further examples from the first listening on a scale of low- to near-certainty (e.g. "I'm not sure about that. It may [50% sure] be a candlestick" vs. "It must [90% sure] be a soldier – he's wearing a helmet") (Soars et al., 2019a, p. 137). Secondly, student groups were given a scaffolding table with relevant hints (e.g. "The speaker thinks something was possibly true") and asked to classify the modal sentences they had underlined in both tapescripts by time (as present/past), polarity (as positive/negative) and degree of certainty (as near/low-certainty). They finally inserted their Turkish translations because cross-lingual links were considered to increase their chances of retaining and retrieving new knowledge.



During the productive phase, two subsequent practice activities were adopted with only minor changes in interaction patterns and procedures to increase learner involvement, while another two were omitted due to time constraints and relative challenge. In the teaching of both present and past modals, pairs initially engaged in controlled output practice, i.e. by taking turns to read the lines (e.g. “I can’t find my ticket.”) in their coursebook and responding to them (e.g. “You must have dropped it”) using the bracketed cues (e.g. “*must, drop*”) (Soars et al., 2019a, p. 103). Then, they switched into the relatively less controlled activities, where groups of four (originally pairs), for instance, listened to five short conversations, wrote modal sentences (about their negotiated guesses) (e.g. “They can’t be at home...”) in response to the cued questions (e.g. “Where do you think the people are? At home? In a restaurant? In a pub?”) and also gave reasons for their conclusions (e.g. “...because they’re paying for the drink”) (Soars et al., 2019a, p. 101). The last coursebook activity involved holding a whole-class discussion on “the different meanings” of modal verbs, or more precisely, which ones could complete the given sentences (e.g. “He <can’t/may/could/might/must/should> have been born in the 1960s”) (Soars et al., 2019a, p. 103). In the adapted lesson, the teacher also elicited their explicit knowledge on epistemic (e.g. *should* for what is possible) and non-epistemic uses (*should* for what is advisable).

Because just another guessing game (i.e. researching urban myths and testing peers with true/false statements) was suggested in the teacher’s book for consolidation (Soars et al, 2019b, p. 130), the teacher chose to replace it with a video-based writing activity on the American myth of discovery to ensure relevance and skills balance. The interactive phase of the adapted lesson started with the students’ choral response, “Columbus did!” to the teacher’s provocative question, “Who discovered America? ... Did he really?”. Upon viewing the funny clip from *Horrible Histories Series 4, Episode 6 (Potty Pioneers)*, where serious doubts about Columbus’s discovery were aroused (Brigstocke & Connelly, 2012), the students were asked to do an internet search and write their conclusions about alternative discoverers of America. Having predicted classroom constraints, the teacher also devised a factsheet from Maurer’s (2017, pp. 69-70) article about the discovery of America, so that they could invest more time in reading different stories about Viking, Irish and Japanese explorers, assessing their plausibility and reformulating speculative sentences in a descending order of possibility. In return for the teacher’s adaptive practices, the learners were ultimately expected to have a good command of English modality (pedagogical), work collaboratively, think critically and reflectively (educational), and develop cultural awareness (psycho-social).

## Results and Discussion

When the 14 prep students were asked to evaluate the effectiveness of their teacher’s adaptive practices by using Murphy’s (1993) 2-point Likert scale, the results in Table 1 were obtained. By looking at their interest and usefulness ratios, the two scaffolded grammar activities, probability scale and bilingual table completion, were found better at both generating enjoyment and promoting learning than the apparently more difficult reformulation activity based on the comic video prompt.

Table 1. Results from students’ ratings of task effectiveness

Adaptive Practices	Interest Ratio (Fun/Boring)	Usefulness Ratio (Useful/No-use)
Addition of probability scale	14:0 (1:0)	14:0 (1:0)
Addition of bilingual table	13:1 (1:0.07)	13:1 (1:0.07)
Replacement with video-based writing	10:4 (1:0.40)	8:6 (1:0.75)

In addition to rating these teacher-created activities in terms of interest and usefulness, the participants were also requested to elaborate on their likes and dislikes about the adapted lesson, as well as ultimate attainments. According to Table 2, their responses concentrated more on the students’ self-perceived benefits (84%) from the adapted lesson than on its limitations (16%). Despite being independent users (B1), the participants expressed appreciation primarily for ample practice opportunities (S6: “We solved a lot of examples and were able to practise well”) (f=8), collaborative group work (S14: “Group work let us have discussions and chat about the subject, so we did the activities without getting bored”) (f=6), explicit focus on grammar (S9: “The thing that I liked in this lesson was detailed presentation of modal verbs and comprehensible handling of the subject”) (f=5), and use of learner translations (S7: “Translating sentences was good reinforcement. It helped us keep information in mind”) (f=4).

Yet, the most-cited advantage of the adapted lesson turned out to be the use of visual aids (f=11). The adjectives, “exciting” (S4), “entertaining” (S12), “facilitating” (S13) and “lasting” (S2) were commonly preferred to characterise the incorporation of the graphic organisers (probability scale and bilingual table) and funny clip from *Horrible Histories* into the processing and interactive phases of the instruction. Due to the

complexity of the English modal system and previous failed attempts, the majority of the respondents like S4 (“Placing the sentences into the summary table added vigour to the lesson. Everything fell into place in my mind more rapidly”) and S8 (“Probabilometer was very useful for me. I used to confuse modal verbs because I misunderstood their possibilities [degrees of possibility]”) seemed more pleased with the catalytic effect of alternative learning mediums.

As to which other factors contributed to enhanced learning and retention, few were however as specific as S1, who also acknowledged the role of skills integration (“It was much better to be able to do reading, listening, speaking and grammar on the same day”) (f=3) and active participation (“Today’s lesson is one where we, too, have been very active... Being different from our usual was good and fun”) (f=2). Similarly, only four participants, taking a more holistic approach to lesson evaluation, distinguished the given case collectively as a “pleasant” diversion from classroom routines (e.g. textbook (in)dependency in S1’s terms). Moreover, S14 drew attention to the affective dimension of their learning process: “When the lesson is enjoyable, it stays in one’s mind... We learn by enjoying what we receive, and we aren’t afraid of making mistakes... Your way of teaching was very relaxing”.

Table 2. Results from students’ retrospective evaluation of the adapted lesson

User Responses	f	%
Likes (I liked...)	46	52
ample practice opportunities	8	9.09
collaborative group work	6	6.81
use of an amusing video as a lead-in to writing activity	6	6.81
use of visual organisers for clarifying and summarising complex concepts	5	5.68
explicit focus on grammar	5	5.68
use of learner translations	4	4.54
diversion from the monotony of classwork	4	4.54
acquisition of general knowledge	3	3.40
integration of the language skills	3	3.40
active participation	2	2.27
Dislikes (I disliked...)	14	16
video quality	7	7.95
activity difficulty	4	4.54
activity duration	2	2.27
topic selection	1	1.13
Gains (I learned/developed...)	28	32
increased awareness of how to use modality	13	14.77
facts about the discovery of America	6	6.81
new words	3	3.40
how to make cross-lingual comparisons	2	2.27
how to practise grammar communicatively	2	2.27
group work skills	1	1.13
deductive reasoning skills	1	1.13
Total	88	100

\*Respondents gave multiple answers.

It can also be observed from Table 2 that more than half of their complaints (f=8) related to the components of the video-based end-of-unit writing activity, namely, the picture and sound quality, video length (S11: “The video can be longer, and the quality of sound and images should be better”) and thematic choice (S14: “The [cueing text] reading was a bit boring because the topic wasn’t attractive”). A closer look at their negative reactions to activity duration and difficulty also showed that just as high-achievers (S2: “I didn’t like that it took so long to complete the activities. There were too many sentences in the Columbus activity”) could lose interest because of the time on task, so low-achieving students could get bored if they encountered “challenging questions” (S9) that might cause them to “feel as if [they] knew nothing” (S10).

Finally, when they were surveyed about their gains from the adapted lesson, 13 out of 14 students asserted that they finally achieved to develop an increased awareness of how to use modality in English (S4: “After this lesson, I really came to understand them [modals] consciously. I learned their present, past and even passive uses. I noticed my misconception. I used to think modal verbs had past forms [inflections]... May and might were the same and could replace each other. I learned the subtle difference between them”). While six participants referred to the learning of facts about the discovery of America (S6: “I got to know some interesting

events about America's discovery"), only three of them actually indicated their liking for acquisition of such general knowledge (S12: "I enjoyed it [Columbus activity]. We obtained very useful knowledge. It was fun"), and also went on to state that acquisition of new words was another gain from their learning experience. It was worth noting that only three students again undertook higher-order reflections in the current study group. S1 and S5 addressed how their learning was facilitated by comparisons between the common/native and target languages as well as communicative use of newly-learned grammar/structures (S5: "Doing more activities than usual, comparing and reinforcing with our mother tongue, using mathematical formulas and expressing our learning with our own sentences have been effective in that [better learning]. But what matters most is the product of our own pen"), whereas S3 remarked on improved adaptivity to group work and inferencing abilities.

Apart from the responses to the learner questionnaire, student performance on the teacher-made quiz underwent evaluation. A quick comparison of their results revealed that the mean number of correct answers grew from 4.85 on the pre-test to 9.92 out of 20 items on the post-test. In other words, the students, on the average, more than doubled their scores from pre- to post-test. The considerable increase in the learning gains resonated with their self-reported outcomes and was considered encouraging despite constraints on time and sampling. As Ellis (1998) pointed out, dual evaluation of tasks, as presently constituted, investigates not only the extent of learning from a task (i.e. whether the task works) but also the learners' own views of the task (i.e. how it can be improved), and is not frequently undertaken due to the amount of time and effort they cost the evaluator. Despite offering valuable insights into the effectiveness of the materials L2 teachers teach by, micro-evaluations still have not received adequate attention in the literature also because they are often found "too localised and too small scale" (Ellis, 2011, p. 232).

Yet, the few existing studies that focused on (at least) the teacher and/or student reviews of the adapted lesson revealed similar patterns of adaptive action and learner reaction. In one of the earliest examples, Murphy (1993) analysed 20 teachers' opinions on the experience of conducting task evaluation with their secondary school pupils in Malaysia, and similarly found that their students, with a dislike of their textbook and traditional teaching methods, demanded variety and responded positively to the use of group work and real-life tasks, while they rejected those embodying difficult content. Duarte and Escobar (2008), who compared 15 Colombian students' perceptions of their global English coursebook (*Cutting Edge Intermediate*) and the locally adapted material for greater sociocultural compatibility, also reported that 93% of them expressed enjoyment of participation in the activities of the latter primarily because the adapted material enabled them to not only recycle grammar and varied vocabulary at the right level of difficulty, through the use of more familiar, realistic situations, and in a more integrated way, but also develop their cognitive abilities in problem-solving activities.

Despite being limited to 14 (in)experienced instructors' self-reported beliefs about adapting another global English coursebook (*New English File Intermediate*) at the English preparatory department of a private university in Turkey, Mede and Yalcin's (2019) qualitative analysis of their reflective essays, lesson plans and semi-structured interviews uncovered similar motives for teacher practices; for instance, they tended to omit repetitive tasks, add warm-up and exam-related (reading) activities, modify the class mode and content of speaking tasks mainly to increase student interest and classroom interaction, and also to maintain the prescribed pace. In a recent study by Karatepe and Civelek (2021), a dialogue activity for teaching requests was likewise modified, and 100 Turkish EFL teachers' views were surveyed with a 19-item questionnaire and semi-structured interviews after examining the original and adapted versions. 96% of the teacher respondents indicated a preference for the adapted activity because the addition of pragmatic awareness-raising exercises (i.e. focus on direct/indirect requests, modals and politeness markers, discussion on request strategies and comparisons between Turkish and English uses) and the more popular discourse role-play tasks were believed to foster their students' pragmatic development and language use.

## **Conclusion**

As is often the case with non-native contexts, where (government-)published coursebooks are imposed upon teacher- and student-users, EFL teachers from different educational stages in Turkey have lately admitted their reluctance to carry out materials adaptation for various reasons (i.e. lack of time, heavy workload, students' low-proficiency and exam-orientation) but attributed it more to lack of confidence, or more precisely, their own lack of knowledge and experience in making modifications to existing coursebooks (Karatepe & Civelek, 2021). Consequently, the present study sought to instantiate how an intermediate unit from a best-selling global coursebook could be made more learner-friendly through the use of addition and modification strategies, and also explored the impact of teacher adaptations on their learning alongside student perceptions of task effectiveness. Descriptive analyses of students' activity ratings and retrospective reflections demonstrated that

the addition of two scaffolded grammar tasks, probability scale and bilingual table completion, proved better for generating student interest and facilitating learning than replacement with the relatively more open and difficult task on video-based end-of-unit writing activity. Despite being independent users (B1), the students also indicated greater liking for the use of visual aids (i.e. graphic organisers and video prompt), ample practice opportunities, collaborative group work, explicit focus on grammar, and learner translations respectively. While their fewer dislikes mainly concerned video quality, activity difficulty and duration, there was almost unanimous agreement that they finally achieved to develop an increased awareness of how to use modality in English. A quick comparison of the 20-item quiz results also showed a considerable increase in their learning gains, for the mean number of correct answers more than doubled from pre- to post-test. In the light of these findings, the teacher as reflective practitioner might be well-advised to consider offering alternatives to the video content (e.g. local historical, detective or medical mysteries) and communicative output (e.g. spoken, written or multimodal texts) so as to increase contextual relevance and accommodate different learning styles. Such co-use of student-based and learning-based evaluations can thus be argued to incorporate accountability in teacher actions and inform development of future learning tasks (Ellis, 1998, 2011).

## **Recommendations**

Although the current micro-evaluation was not intended to make generalisations but rather document the impact of teacher adaptations of a grammar unit on the learning and attitudes of a specific group of intermediate learners of English at tertiary level, the sample size (n=14), sampling method (convenience sampling) and duration (eight 45-min periods) could be listed among the limitations of this study. Future research should consider evaluating the efficiency of published coursebooks (global/local) and their adapted versions by different teacher types (e.g. expertise levels and language backgrounds) through the use of multiple data sources (e.g. classroom discourse) besides self-reports and achievement tests.

## **Scientific Ethics Declaration**

The author declares that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the author.

## **Acknowledgements or Notes**

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**IConSoS 2022: International Conference on Social Science Studies**

## **Bayesian Network Approach in Education: A Bibliometric Review Using R-Tool and Future Research Directions**

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**Abstract:** The development and multiple variations in technology and science have endured the education. Nevertheless, education is one of the primary components that uphold the development of a country. In the meantime, diverse technologies have been introduced to blend in education. For example, Bayesian Networks is a probability-based data modelling approach that illustrates a set of variables and their conditional dependencies through a Directed Acyclic Graph (DAG). Each node formed inside the graph has a Conditional Probability Table (CPT). Therefore, the endurance of this bibliometric review is to identify peer-reviewed literature on the Bayesian network approach in education. Scopus citation databases are used in the data-gathering phase. In addition, PICOS Framework and PRISMA approach were obtained and analysed for keyword search on the research topic. This bibliographic data of articles published in the journals over ten years were extracted. R-tool and VOS viewer were used to analyse the data contained in all journals and articles. This bibliometric review shows the usage of the Bayesian network approach in education, especially in educational application development. The findings from 87 articles extracted show that teaching and learning activity delivery and educational management have improved. The findings show an increasing trend in published studies related to the Bayesian network in education. Next, the United Kingdom and the United States became highly productive countries in the publication of studies within the scope of the Bayesian network. Next, interdisciplinary became the primary choice in the publication of studies in the field of Bayesian networks. The level of predictive accuracy generated through the Bayesian network approach improves the quality of educational application development. However, the findings of previous studies indicate that there is a need to extend the Bayesian network approach in education.

**Keywords:** Bayesian Network, R-tool, Bibliometric Analysis, Technology, Teaching Application

### **Introduction**

Education has undergone drastic developments since the world faced the Covid-19 pandemic. 80% of schools had been affected by the Covid-19 pandemic (Azrin & Nurfaradilla, 2021). The Covid-19 pandemic has drastically impacted the world education system (Teras et al., 2020). Practices in teaching and learning activities that have long depended on the classroom are also affected, and all teaching activities are carried out with the help of technology (Chabibie, 2020).

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Based on a United Nations Educational, Scientific and Cultural Organization (UNESCO) (2019) report, as many as 74% of students worldwide are affected by this Covid-19 pandemic. This situation makes teachers and students rely on technology solely to collaborate to access Education. The post-Covid-19 situation, has applied the importance of technology in the world of Education. As a result, there is a need to provide learning aids that students can access even as the world faces a pandemic such as Covid-19. According to Raja and Nagasubramani (2018), technology has become compulsory for fulfilling 21st-century education skills among students. According to Al-Qozani and Aleryani (2018), the use of technology has opened up space in the world of Education to facilitate students' access to Education from a place without time limitations and gaps between teachers.

Developments in technology today recreate a vital role in life. The 21st-century era is often considered the era of technology (Raja & Nagasubramani, 2018). It is also seen as the basis of economic growth of a country where the effect can be felt in every field, one of which may be Education. The Covid-19 pandemic has prompted the ranks of teachers to explore e-teaching methods and platforms such as Google Classroom, Google Meet, and Zoom. Cai et al., (2020) stated that teachers played a critical role in adapting e-teaching during the Covid-19 pandemic period, which had suddenly changed the pattern of teaching delivery method. As a result, the quality of the teaching and learning process can be improved. Its conveyance and gathering are expanded through a few procedures, for example, PC-supported programming, network frameworks, data sets, and data frameworks. Furthermore, the use of teaching aids helps stimulates interest and invigorates students thinking skills in this digital age and has been thought of and perceived as an impetus for the educating and growing experience. In many fields of computer science, artificial intelligence (AI) is a challenging and creative field. Using the computer-assisted instructional system (CAI) can provide an ideal instructional environment and easily stimulate students' enthusiasm and initiative to learn, thus significantly enhancing the instructional effect (Huang & Zhou, 2022). The increasing development of multimedia technology and integration with other leading technologies will undoubtedly encourage the further development of CAI. The Bayesian network approach is one of the artificial intelligence techniques often used in education. Bayesian Network is one of the applications of data mining that produces an interactive opportunity prediction model in the form of a description of the relationship between variables and provides information on probabilities.

### Antecedent of Bayesian Network

A Bayesian network is an approach derived from the Bayesian theorem. The Bayesian network approach serves as an approach used in software development to determine the uncertainty measured using probabilities. Thomas Bayes put forward this theorem with the basic formula:

$$P(B|A) = \frac{P(A|B)P(B)}{P(A)}$$

Bayesian Network is a Directed Acyclic Graph (DAG) equipped with a Conditional Probability distribution Table (CPT) for each node. Each node addresses a domain variable, and each arrow between nodes addresses a probabilistic reliance (Pearl, 1988). Bayesian networks can generally calculate the conditional probability by assigning values to other related nodes. Naive-Bayes Bayesian Network is a simple structure with nodes classified as parent nodes from several other nodes.

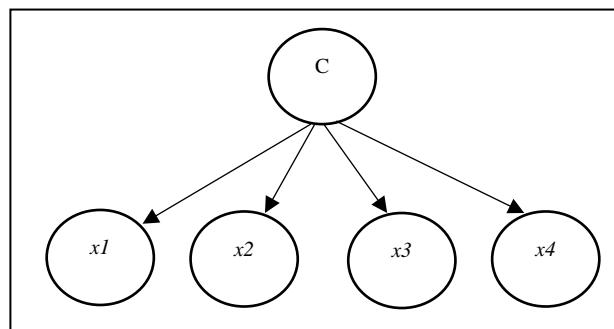


Figure 1. Bayesian network tree

Figure 1. Shows the structure of a Bayesian network classified using probability nodes. The calculation of the chance value at a node in the Bayesian Network structure is by the following formula:

$$P(X_1) = \sum_{j-i}^x P(X_1 - Y_1)$$

In conclusion, a Bayesian network is an approach that can represent uncertainty and reasoning in the field of artificial intelligence. Bayesian network is represented by an actual state and not a process of reasoning the probability of joint events between two events  $X_1$  dan  $X_2$ , where the probability of  $P(X_1) > 0$  determined by the above formula.

### *Bayesian Network Structure*

The Bayesian Network is a probabilistic graphical structure that illustrates causal relationships between interrelated variables. There are four things that Bayesian Network can offer as a method (Dita et al., 2018):

- i. Bayesian Networks can easily handle inaccuracies or problems with data.
- ii. The Bayesian Network allows one to learn about causal relationships. The learning process becomes essential when trying to understand the domain of a problem.
- iii. The Bayesian Network can facilitate a combination of domain and data knowledge.
- iv. Bayesian Network offers an efficient and principled approach to avoid overfitting the data.

Bayesian Network approach involves two steps which are creating the network structure and estimating the probability value of each node. One of the algorithms that can be used to form the network structure is to use the Maximum Spanning Tree algorithm. The Bayesian Network consists of two components, the Directed Acyclic Graph (DAG) and the Conditional Probability Table (CPT) for each attribute variable (Han & Kambe, 2001). DAG can be denoted by  $G = (X, E)$ , where  $X$  consists of variables called nodes and  $E$  is a pair of nodes connected by an arrow line. Nodes on the DAG represent random variables, while arrows indicate probabilistic dependence relationships between attributes. The arrow line only points in one direction and does not rotate back to its original node. The use of the Bayesian network in the development of software and applications in education is also seen to have a comprehensive impact. According to Dita et al., (2018) the Bayesian Network approach was used in developing an Intelligent Tutoring System (ITS) that can recommend materials appropriate to students' level of understanding. Meanwhile et al., (2015) used the Bayesian Network approach to identify the relationship between the factors of this study and analyse the data as it can represent variables in the form of nodes and relationships with directional lines. Constraint-based algorithms and score-based algorithms were used to generate networks in several categories to make comparisons and identify the factors that most influenced student learning in the subject of Additional Mathematics. Past studies have shown that this Bayesian Network approach is widely used for software development and educational applications. In line with that, this bibliometric analysis explores the literature on the Bayesian Network approach in education in the Scopus database. Furthermore, it aimed to answer the following research question:

1. How far has the Bayesian Network approach in education research progressed in the publication?
2. What is the scientific productivity pattern in the Bayesian Network approach in education field research?
3. What is the main area of the Bayesian Network approach in education research?
4. What is the future direction of the Bayesian Network approach in education?

It attempted to divulge publishing trends, patterns of scientific productivity, patterns of research conducted, and the primary area of the Bayesian Network approach in education.

## **Method**

This study was conducted using the PRISMA approach (Preferred Reporting Items for Systematic Review and Meta-Analysis) and Bibliometric analysis to answer all research questions. The PRISMA approach is used to shortlist and select articles from Scopus databases based on the research topic. In addition, the PRISMA method has a specific procedure of how it is produced and a comprehensive scope that enfolds all appropriate materials and can replicate other researchers with the same approach to discussing a topic. Table 1 shows the inclusion and exclusion criteria for selecting and shortlisting the articles from the Scopus database.



Table 1. Inclusion and exclusion criteria

Inclusion	Exclusion
The article period of 2012 to 2021.	Duplicate article with same author and topic removed
The article focusses Bayesian network approach in education.	Bayesian network in other areas than education is excluded in this analysis.
English language papers only analysed in this study.	Other than English language excluded.

### Data Collection

Data analysis begins with a keyword search by applying inclusion and exclusion criteria. Then, the keywords and search strings can be repeated to get the latest material and future research.

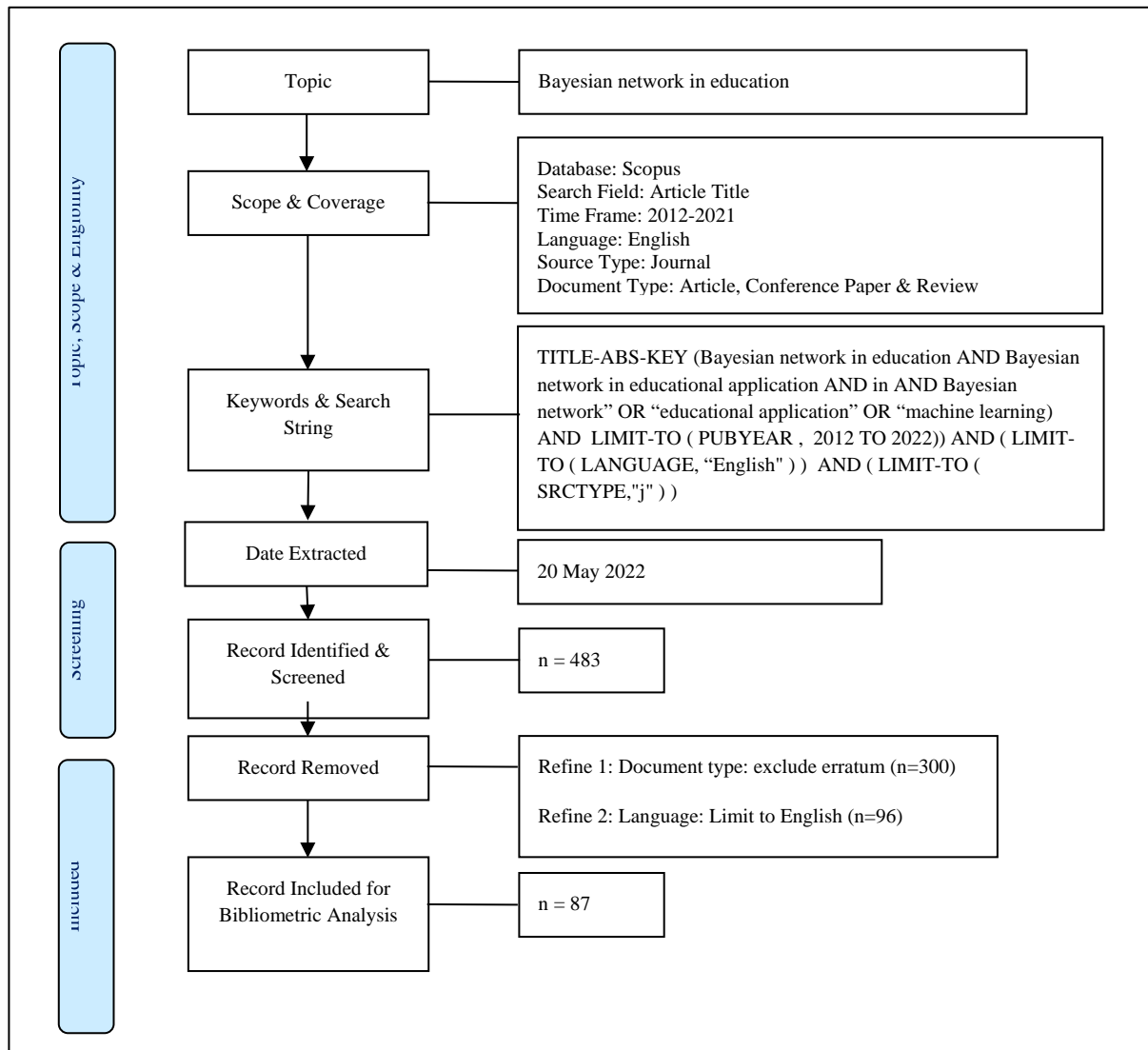


Figure 2. PRISMA flowchart of data inclusion and exclusion (Page et al., 2021)

This study included all the reports written in English from 2012 to 2022. Furthermore, excluding the erratum (n=300) to avoid twofold counting. Finally, 87 records are distinguished and downloaded for additional analysis. As in Table 2, three sets of keywords were used to select and shortlist the articles from the Scopus database. The primary keyword is the Bayesian network approach in education. While the secondary keyword is Bayesian network in educational application. The keywords used in this bibliometric analysis regarding Bayesian network and model are depicted in Table 2, in which the set of keywords are used with “AND” or “OR” operator.

Table 2. List of keywords

Keywords set	Keywords
Keywords_Set1	“Bayesian network in education” OR “Bayesian network”
Keywords_Set2	“Bayesian network in educational application”
Keywords_Set3	“Bayesian network” OR “educational application” OR “machine learning”

## Data Analysis and Finding

In this study, performance and bibliometric analysis were blended to answer the research question. Based on Harzing (2007), the Bibliometrix R package and Perish software was used to conduct citation and publication analysis by running performance analysis. Meanwhile, VOSviewer were used to map the author's keyword. The usage of this software determined the significance of the study and involved prior Bayesian network clusters. On the other hand, the Total Link Strength (TLS) was used to decide the centrality of the study. The density of the scope is utilized to decide the research extension's internal strength or level of interaction within a network. Then again, the novelty was identified through the median value of the average publication. Average publication years greater or equal to the median value were considered a novel and the other way around.

## Publication and Citation Trend

Table 3. Annual total citation

Year	N	TC	Mean TC per Art	Mean TC per Year	Citable Years
2012	4	224	56.00	5.60	10
2013	5	54	10.80	1.20	9
2014	4	4	1.00	0.13	8
2015	1	1	1.00	0.14	7
2016	5	71	14.20	2.37	6
2017	3	102	34.00	6.80	5
2018	5	8,3	1.67	0.42	4
2019	10	27	2.70	0.90	3
2020	20	20	1.00	0.50	2
2021	30	90	3.00	3.00	1
Total	87	601,3			

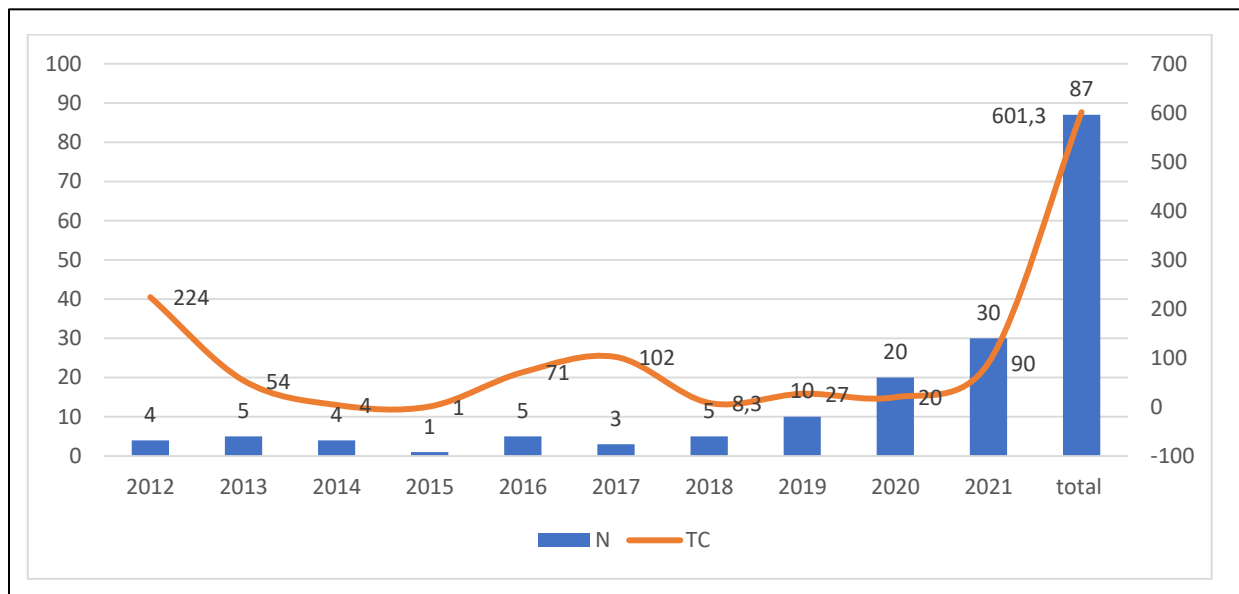


Figure 3. Total publication and citation on Bayesian network from 2012 to 2021

There were 87 publications on the Bayesian network in education research retrieved from the Scopus database for this study. The first publication for 2012, “Evaluation of simulation games for teaching engineering and manufacturing,” was included in the analysis (Hauge & Riedel, 2012). The number of publications related to the Bayesian network in education remained in the single digits from 2012 until 2018. However, the publications have been steadily increased since then (Table 3). The trend line shows that the number of publications increases polynomials ( $R^2 = 601.33$ ), more significant than the linear increase.

*Scientific Productivity Pattern*

A total of 416 authors contributed to the publication of the Bayesian network in education research. Table 4 lists the number of publications based on countries has contributed. Based on the analysis, most authors have only published once on the topic of Bayesian networks in education. On the other hand, the United Kingdom became the country where it produced the most publication among the other 14 countries. Table 4 shows the United Kingdom published 18 publications, followed by United States with a complete publication of 16 publications, whereas Italy with seven publications.

Table 4. Top 10 countries contributed to publication on bayesian network in education

Country	Total Citations	Average Article Citations	Total Citation
United Kingdom	18	16	160
United States	16	14	179
Australia	5	7	115
Italy	7	6	58
Germany	6	5	78
China	3	1.5	50
South Korea	5	4	34
Spain	5	4	57
Netherland	5	3	20
Iran	5	3	0

*Main Area of the Research on Bayesian Network in Education*

The primary province of the Bayesian network in education research was distinguished utilizing keyword analysis. The analysis shows, only 49 of the 3249 keywords used by the authors outperformed the minimum occurrence level of 10 (Figure 4). Model, computer vision, structure, and machine learning are the main clusters that emerge from the map. The keyword overall strength was determined by generated the Enhanced Strategic Diagram (Figure 4). The link strength showed on centrality and meanwhile frequency showed by density. The average year of publication determined the novelty of publication. The high density shows publication on scope of child epidemiology, risk assessment of learning, besides interdisciplinary shows research on bayesian network in education related to students.

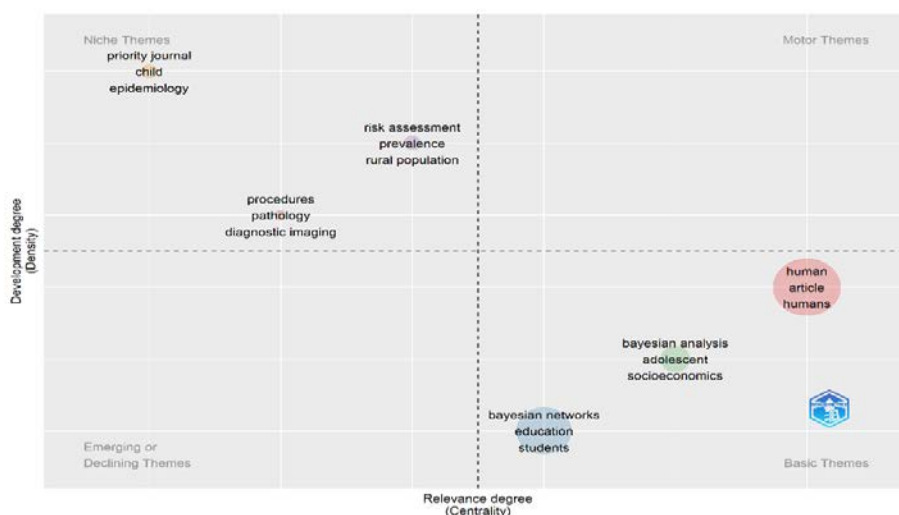


Figure 4. Enhanced Strategic Diagram (ESD)

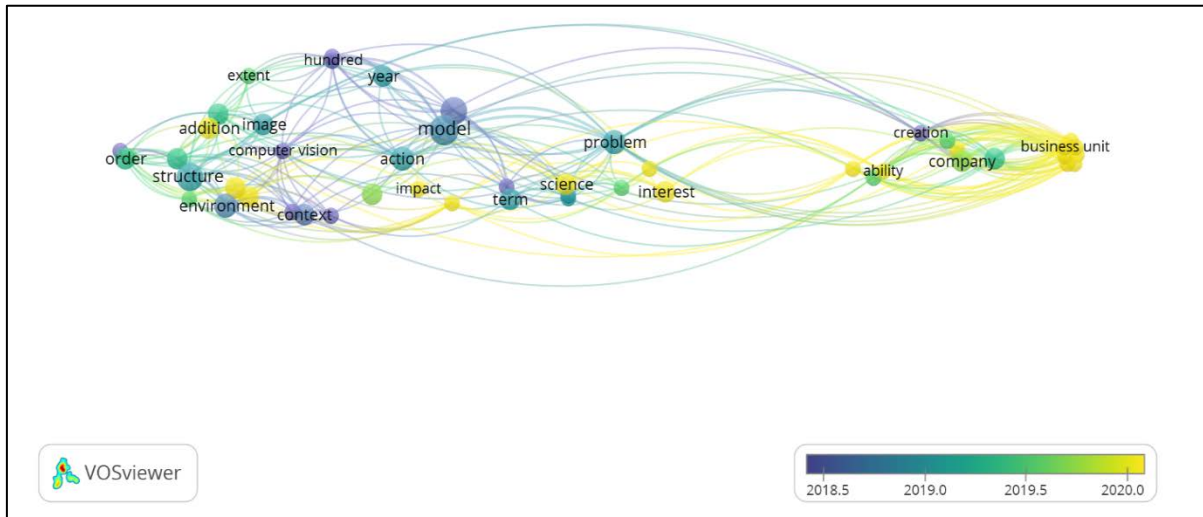


Figure 5. The co-occurrence of the author's keyword with minimum threshold of 10

## Discussion and Future Direction

Bayesian networks were constructed in the current study of 'Probabilistic Arguments in Systems Intelligence' by Pearl (1988), which prompted the acceptance of probability and decision theory in artificial intelligence. The Bayesian Network officially allows for efficient representation and careful reasoning with definite science. Bayesian networks make it possible to be able to work from experience as well as combine the best artificial intelligence and neural networks. Bayesian networks are a family of probabilistic graph models. According to Devni et al., (2016), data mining in education has become widespread. Bayesian network, which is one of the data mining approaches, is also one of the main components inherited in data mining. Therefore, the use of the Bayesian network in education is increasing where the development of intelligence-based systems can facilitate educators' educational affairs. Furthermore et al., (2017) found that using the Bayesian network in the development of e-learning-based applications facilitates the ability to conclude the characteristics of individual users by receiving information data in the form of input from the user. Thus, the development of artificial intelligence applications in education can be realized using the Bayesian network approach. Moreover, the e-learning platform developed in the future can be expanded in all educational institutions using Bayesian Network. The Bayesian network approach was successfully implemented to generate individual student reports (Salwa et al., 2021). In this case, the method provides recommendations related to an e-learning session attended by students. Thus, the need to use the Bayesian network approach in education is increasing to guide students in making a decision related to learning. The finding can be girded by the increasing trend in implementing studies from 2018 to 2021 (Table 3). In particular, studies for 2019 and 2020 in Bayesian networks in education have increased. Thus, the future of the Bayesian field is envisioned to increase. This can be seen through the findings of previous studies that show the significance of the Bayesian network approach in the development of educational applications and software.

## Conclusion

Overall, the findings of previous studies show that research trends in the field of Bayesian networks show an increased over the past five years. The use of the Bayesian network approach in the development of educational applications has also shown an increase. Bayesian networks are increasing in line with the expansion of artificial intelligence and data mining in education (Johnson et al., 2022). The increasing use of tablet and smartphone facilities among school students also contributes to developing applications using the Bayesian network approach and artificial intelligence that facilitate the decision-making process in terms of learning (Huang & Zhou, 2022). This study's findings describe the situation in using the Bayesian network in education, particularly aspects of trends, the number of publications, and the country published. It also discusses the future direction of the Bayesian network in education. However, the trend shows an increase in the use of Bayesian networks in education. There is still a need to expand research related to Bayesian networks in education. In particular, studies related to the importance and benefits of using Bayesian networks in studies should also be conducted. Studies on the importance and benefits can show productivity in using the Bayesian network approach in education.

## Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

## Acknowledgements

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## **Effect of Dark Triad Personality on Cyberbullying Behavior among Malaysian University Students**

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**Abstract:** Cyberbullying has become more prevalent in this age due to the increased usage of electronic gadgets, the Internet, as well as the personality traits of the aggressor. The purpose of this study is to examine the effects of Dark Triad personality traits on cyberbullying behaviour among university students. The personality model adopted in this study is the Dark Triad Model, which includes Machiavellianism, Narcissism and Psychopathy. This current study used a cross-sectional quantitative research design to collect data through online questionnaires. This study utilized the 9-Item Cyberbullying Offending Scale and the 12-Item Dirty Dozen scale to gather the data. A total of 400 samples from Malaysian public university students were selected based on the convenience sampling methods. The data were analyzed using descriptive and inferential statistics through SPSS version 27. The finding shows a low level of cyberbullying behaviour among Malaysian university students. The findings also indicated that all three dark traits (i.e. Machiavellianism, Psychopathy, Narcissism) are significantly correlated with cyberbullying behaviour. Meanwhile, the regression analysis indicates that both Psychopathy and Machiavellianism significantly positive affect cyberbullying behaviour. The study contributes to the existing literature by providing evidence from the Malaysian perspective, which is a collectivistic culture in nature. Additionally, the findings provide information to the stakeholders as guidelines for future intervention and prevention programs development for cyberbullying.

**Keywords:** Dark Triad, Machiavellianism, Narcissism, Psychopathy and Cyberbullying

### **Introduction**

In this digital era, online social media usage has become a ubiquitous phenomenon among youth as it acts as a vehicle for individuals to connect and build relationships virtually. With the rapid increase in social media usage, cyberbullying has emerged as a new form of bullying that occurs in cyberspace, becoming a salient issue that needs to be focused on. Cyberbullying activities include engaging in a short online argument utilising malicious languages, harassing by spamming derogatory messages, circulating spiteful rumours, impersonating someone else with ill intentions and purposely isolating a person from an online group (Willard, 2007). The huge online platform enables massive numbers of people with perceived anonymity to view or participate in

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online bullying, making the situation even more distressing (Watts et al., 2017). The motivations that led perpetrators to conduct this negative behaviour may stem from jealousy, boredom, revenge and/or seeking acknowledgement from others (Varjas et al., 2010).

This problematic social media use has become a troubling issue in Malaysia, as the country was ranked sixth among 28 countries worldwide in a report recently released by tech review site “Comparitech” (Nur, 2020). Malaysia was also second in problematic social media use in Asian countries (Nur, 2020). These perturbing statistics of cyberbullying cases in Malaysia have called for immediate attention to tackle this matter at hand to ensure the wellbeing of online users. Information about the factors and predictors of cyberbullying is critical to learning about this problematic behaviour. As the number of cyberbullying cases has steadily grown in Malaysia, it is crucial to provide empirical research data on this area of study. Hence, the knowledge implication of this study is that it can contribute to the existing literature in the conceptual areas of cyber bullying. In addition, there is still a lack of literature that researched the effects of dark triad personality such as Narcissism, Machiavellianism and Psychopathy traits on cyberbullying (Alonso & Romero, 2017), as most of the past studies focus on the other aspects of bullying. The psychological reasons behind cyberbullying behaviour may shed some light on the motivators that galvanise this immoral act. Hence the findings from this study can provide some essence of personality traits on cyberbullying behaviours to further understand the motive of the perpetrator.

Previous research has shown that cyberbullying can cause various negative outcomes that can be detrimental to both the physical and psychological health of the victims (Zhang et al., 2020). Negative emotions and behaviours, such as social anxiety, poor concentration, substance abuse, and even suicide are to be expected from the victims. This is because the consequences of cyberbullying attacks are just as harmful as traditional bullying or perhaps even worse. Traditional bullying differs from cyberbullying in terms of the time and frequency of the attack from the perpetrators. For instance, a victim who was physically bullied at school may feel safe during the evenings and nights as the person are in the comfort of his own home during those times. Whereas cyberbully victims are not blessed with that safe period of harassment, as it will continuously occur every time of the day due to the support of media circulation. In addition, the harassment is presented towards a larger virtual audience which can be more humiliating for the victims to show their faces in public (Peluchette et al., 2015). To make things worse, embarrassing pictures, videos or comments towards the victim can be downloaded and shared repeatedly in multiple social media platforms, which eventually leads to the person becoming viral and a target for harassment as well as a laughingstock. Hence, this present research can be one of the attempts to understand the pattern of this negative antisocial online behaviour to curb this problem from being more widespread. By knowing the effects of the personality traits towards cyberbullying behaviour, this can assist future researchers to apply the knowledge in detecting cyberbullies that exist online as conducted by past research, in which they incorporate the dark triad features in a machine-learning algorithm to detect cyberbullying among Twitter communities (Balakrishnan et al., 2019).

Cyberbullying research among young adults, or more specifically, university students, is critical as they are equally susceptible to the harm of cyber aggression. Based on past research, it has been asserted that almost all university students are internet literate and have higher access to the internet for their studies (Lai et al., 2017). Thus, this increases the percentage of university students as cyber users, which justifies the need to investigate further the cyberbullying incidence among this population. According to Gilroy (2013), there is a higher probability for university students to be engaged in cyberbullying behaviour when exposed to an extensive amount of Internet and social media. Research on this population is necessary to comprehend the nature of this phenomenon fully. This present study can add new knowledge and empirical data related to the influence of Narcissism, Machiavellianism and Psychopathy as the dimensions of the Dark Triad personalities on cyberbullying behaviour among university students in Malaysia. This is because it has been stated that not much research has been done on the university students regarding cyberbullying (Watts et al., 2017). Thus, with the data gathered through this study, the levels of cyberbullying behaviour among university students in Malaysia can be brought to light and assist future researchers in further investigate this research area.

From previous studies, numerous researchers have discovered that personality traits, such as the Dark Triad Personality and the Big 5 Model, can be one of the predictive factors for antisocial online behaviours, including cyberbullying (Moor & Anderson, 2019). Some researchers have utilised the Dark Triad Personality model in their research, whereas few incorporated the Big 5 Model to predict cyberbullying behaviour (Van Geel et al., 2017). In this research, the Dark Triad model, which encompasses the traits of Machiavellianism, Narcissism and Psychopathy, is utilised as the personality model. This model fits for this research due to the theoretical perspectives of each trait associated with cyberbullying behaviour. Since the three Dark Triad traits are linked with values such as power, hedonism, and manipulation, people high on these traits may use cyberbullying as a



coping method to feel powerful, entertained, or relieved from ordinary real-life issues (Kircaburun et al., 2018). By investigating the linkages between personality traits and cyberbullying, one may assess what personality trait has a significant relationship with this negative online behaviour, which can contribute to society in terms of aiding educators to develop effective strategies to guide and demotivate students from cyberbullying behaviours. However, studies on the relationship between personality traits and cyberbullying are pretty scarce (Alonso & Romero, 2017). Thus, this study aims to examine the effects of Dark Triad personality traits on cyberbullying behaviour among university students in Malaysia.

## **Literature Review**

### **Personality Traits**

Personality traits can be defined as a neuropsychic system capable of making several functionally identical stimuli and triggering and facilitating equivalent (meaningfully consistent) reactive and expressive behaviour (Allport, 1961). This definition implies that personality traits do not mean that people would react the same way regardless of any situation, instead, there is a concept of variance. The newer definitions of personality traits acknowledge that personality traits are related to inconsistency based on different situations, as pointed out by Allport (1961). Moor and Anderson (2019) defined personality traits as the relatively constant patterns of thinking, feeling, and attitude that represent the inclination to react in specific ways according to situations. Social and personality psychologists have substantiated that personality traits can precisely specify specific differences in behaviour even from environments (Gosling et al., 2002).

In this study, personality traits refer to the dark personality traits often associated with negative, undesirable behaviour that can cause harm to others, such as cyberbullying. The personality model deemed fit for this study is the Dark Triad model (Paulhus & Williams, 2002). This model consists of three dimensions that are Narcissism, Machiavellianism and Psychopathy. Narcissism can be described as an extreme feeling of entitlement and superiority. Machiavellianism is the likelihood of the person manipulating others deliberately. Psychopathy refers to incautious thrill-seeking behaviour and lack of empathy (Paulhus & Williams, 2002). The personality traits are measured by using the 12-item Dirty Dozen Dark Triad Scale (Jonason & Webster, 2010).

### **The Dark Triad Model**

Several personality models have been applied by previous researchers to study the correlation between cyberbullying and personality traits. The Dark Triad Model is utilised as the underpinning theory in this study. The Dark Triad Personality is the most widely accepted model of malicious personality traits (Paulhus & Williams, 2002). The dark triad concerns three socially unappealing personality traits: narcissism, Psychopathy, and Machiavellianism. The trait *Narcissism* can be defined as an enhanced sense of superiority, uniqueness, and self-importance while demeaning others (Rauthmann & Kolar, 2012). *Psychopathy* can be described as a stable pattern of blatant indifference and abuse of the rights of others with a pronounced affinity for deception and manipulation. *Machiavellianism* is a trait that involves deception and manipulation for personal gain in relationships due to their fear of rejection (Rauthmann, 2011). Even though the traits of the Dark Triad Model are commonly displeasing, it is essential to highlight that they are still within the normal, sub-clinical range, which makes people who scored high in these traits can still be considered normal and should not be confused with those in forensic and clinical populations (Vernon et al., 2008). However, it is erroneous to assume that people with these subclinical traits are less harmful to society and themselves than to the clinical population with the same traits (Gibb & Devereux, 2014). Past research found that people often view narcissists as socially unpleasant despite being in a clinical or subclinical population (Leary et al., 1997; Paulhus, 1998). The trait psychopathy is also deemed the most malicious among the other traits in the Dark Triad, even at a subclinical degree, as it was found to influence a broad range of self-report behavioural measures of antisocial behaviour (Paulhus & Williams, 2002; Rauthmann, 2012). People that score high in Machiavellianism are regarded as dishonest, and deceitful, and perceive that interpersonal manipulation is the secret to achieving what they want in life; hence they act as such (Jones & Paulhus, 2009).

Furthermore, despite their disparate backgrounds, the dimensions in the "Dark Triad" share several similar characteristics. All three traits have the disposition to exhibit self-glorifying, emotional indifference, and aggression to the varying extent as they possess socially malicious personalities (Paulhus & Williams, 2002). Paulhus and Williams (2002) also discovered that the Dark Triad traits all displayed a common core of disagreeableness in non-clinical samples, which makes it frighteningly normal for them to behave destructively

in social situations. Other research also supported the statement, claiming that these three characteristics are considered exploitative as they exhibit an indifference to the damage they inflict on others in the pursuit of their goals." (Jones & Paulhus, 2011, p. 253). According to Jones and Figueredo (2013), all three characteristics have an antagonistic essence of callousness and manipulation in nature, which are in line with the previously stated research. When compared to the Big Five Model, the Dark Triad traits have shown that they all have one commonality, which is low agreeableness (Paulhus & Williams, 2002; Jakobwitz & Egan, 2006). Hence, it is not surprising that people with the Dark Triad traits suffer psychosocial consequences (Jonason, Li & Czarna, 2013) because of a lack of self-control, emotional intelligence, and equity sensitivity (Goodboy & Martin, 2015).

### **Cyberbullying Behaviour**

Cyberbullying can be described as any vile act against another cyber user through the internet or other digital technologies, such as distributing or uploading deeply offensive content or using other forms of social harassment (Willard, 2006). Cyberbullying is classified into seven categories by Li (2007) and Willard (2006): flaming, online harassment, cyberstalking, denigration, masquerading, trickery and outing, and exclusion. Furthermore, cyberbullying behaviour can also be defined as causing distress to others by the constant means of technology (Slonje et al., 2013). However, previous research discovered that university students disagreed with the definition (Gibb & Devereux, 2014). They stated that there is an issue with the evolving nature of technology, which calls for a more comprehensive set of behaviours related to cyberbullying. The participants asserted that cyberbullying should be associated with the perceived distress of victims and not solely based on the intended harm of the perpetrator. The operational definition of the present study is aligned with the definition provided by the university students in the past research, as the study focused on the most integral elements that are most commonly included in defining cyberbullying behaviour, which is repetition and harm caused to the victim. Aside from that, cyberbullying has been associated with other indirect forms of aggression, which makes it vary from traditional bullying, due to its perceptually covert nature (Gibb & Devereux, 2014).

Social media, e-mail, chat rooms, instant messages and mobile phones are all the typical platforms where cyberbullying tends to take place. Since many of today's students are members of the digital generation, educators should be mindful of the cyberbullying issue and recognise that it affects teens and young adults. As stated in past research, college students spend most of their time online due to the nature of their studies which require them to access the internet. Thus, this increases the probability of them engaging in cyberbullying behaviours (Lai et al., 2017). Aside from that, Calvete et al. (2010) discovered that cyberbullying is linked to proactive aggression, the rationale for violence, openness to violence, and a lack of perceived social support from peers. Cyberbullying, which relates to persistent, deliberate, and malicious online activities directed at weaker people (Patchin & Hinduja, 2015), has been linked to psychopathy from the Dark Triad traits, and sadism from Dark Tetrad traits specifically (Van Geel et al., 2017). Thus, these could potentially lead university students to cyberbully others as they could be more exposed to these factors.

### **Prevalence of Cyberbullying among University Students**

There is a large amount of research surrounding cyberbullying among adolescents. However, there seems to be a scarcity of articles that have the research samples of university students (Watts et al., 2017). This study aims to tackle this research gap to provide more knowledge on cyberbullying. Thus, it is rational to conduct a thorough review of the limited existing research that has been done on university samples.

According to a study by Gibb and Devereux (2014), it was discovered that about 52% of college students are involved in cyberbullying behaviours, which is quite a high level of incidences compared to previous estimates in the study. Their study employed 297 college students, 67.4% of whom were female, to take part in an online survey to test the correlation of the dark triad personality with cyberbullying. This study used the Cyberbullying Questionnaire (CBQ; Calvete et al., 2010) as the instrument to measure cyberbullying behaviour. The research findings were aligned with past research that stated cyberbullying behaviour can still occur at the university level (e.g. Kowalski et al., 2013; MacDonald & Roberts-Pittman, 2010). The plausible reason for this result may be due to university students' time spent on the Internet (Lai et al., 2017). Based on Gilroy (2013), university students are more inclined to engage in cyberbullying behaviour when exposed to the Internet for a considerable amount of time. Furthermore, a systematic literature review conducted by Watts et al., (2017) aimed to increase awareness of the ongoing phenomenon of cyberbullying among undergraduates. Their study analysed numerous databases to look for existing literature on cyberbullying. A total of 100 articles were examined, with 54

included in the final literature review. From this study, it can be discovered that high school cyberbullies were much more likely to cyberbully in university (e.g., Beran et al., 2012), with the sample of 1368 Canadian and American college students. This claim can be supported by a study conducted by Chapell et al., (2006) studied 119 students and found that 54% (14 of 26 participants) of college cyberbullies were also cyberbullied when they were in high school and elementary school. A researcher also claimed that male university students are more likely to be cyberbullies than females (Ozden & Icelliglu, 2014).

Most of the research previously was conducted in Western countries, and still limited study from Asian countries like Malaysia. From Malaysian perspective, the cyberbullying phenomenon has not yet been thoroughly investigated. There is still scarce research regarding this topic among Malaysian samples (Lai et al., 2017). Thus, the data obtained on cyberbullying cases in Malaysia is quite limited. In 2013, 389 incidents of cyberbullying were identified based on the data published in a local newspaper. In contrast to 250 cases in 2012, this figure had risen by 55.6 per cent in 2014. Nevertheless, it is erroneous to assume that the article considers all cyberbullying cases, in fact, many cases are unreported due to the victims' silence. Their silence may be stemmed from feelings of helplessness, embarrassment, and depression.

A study from Malaysia was conducted by Lai et al. (2017), it was stated that 66% (470 out of 712) of their samples have experienced cyberbullying. The research gathered up a total of 712 public and private university students as their participants. Males comprised 310 (43.5%) of the total participants, while females made up 402 (56.5%). The study consists of 374 Malays, 64 Chinese, 109 Indians, 160 Borneo native peoples, and five other ethnic groups. The findings of the stated research is in line with a more recent study conducted at a university in Johor Bahru, Malaysia, which has a total sample of 400 undergraduates comprising 32% male respondents and 68% female respondents. The study also discovered that 61% of their 244 respondents have experienced cyberbullying. The result of this study further proves that cyberbullying is currently on the rise, particularly among university students in Malaysia, due to the high incidence rate. According to an online safety site, this is analogous to the situation in the United Kingdom, where 69% of young people were cyberbullied (Cyber Bullying Statistics, 2015). However, the trends exhibited by Malaysia are pretty contrasting with the USA, as research in the latter country only showed 21.9% of college students having been cyberbullied (MacDonald & Roberts-Pittman, 2010).

Finally, cyberbullying among Malaysian students in higher education institutions has reached alarming levels. From an academic standpoint, cyberbullying can have a negative impact on victims' academic success due to mental and physical complications caused by cyberbullying. Thus, it is essential to carry out this research to obtain more empirical data on the level of cyberbullying behaviour among university students in Malaysia.

### **Types of the Dark Triad Personality Traits among University Students**

The model of the Dark Triad personality consists of three malevolent traits: Machiavellianism, Narcissism and Psychopathy. Hence, the present research intended to identify the type of Dark Triad personality that exists among university students in Malaysia. According to a previous finding by Mumin (2021), out of all the dark traits, the trait Narcissism appeared to be the most prevalent among university students in Malaysia. The study incorporated the same Dark Triad instrument, the Dark Triad Dirty Dozen Scale, and obtained data from 549 respondents to study the role of Dark Triad personality as a buffer against stress. Aside from that, Vedel and Thomsen (2017) also found the same trend in their results, with Narcissism scoring highest, followed by Machiavellianism and Psychopathy in their university student samples. The research aimed to see if there are any pre-existing Dark Triad distinctions between academic majors, which involved 487 students. The same result can be seen in a study by Rauthmann and Kolar (2012), which also showed Narcissism as the most prevalent type of dark personality trait and Psychopathy with the least prevalent score. The study also used the Dirty Dozen Scale on 244 respondents to examine the perceived darkness of Narcissism, Machiavellianism and Psychopathy.

However, a study by Rauthmann and Kolar (2012) related to the relationship between bullying behaviours and the Dark Triad showed differing results. The research finding showed that the trait Machiavellianism scored the highest level out of all the three traits, followed by Narcissism and Psychopathy. Interestingly, it can still be observed that Psychopathy remained the least prevalent among university students. These findings may probably be because psychopathy is known as the most malicious trait in the Dark Triad Model (Rauthmann & Kolar, 2012). Hence, due to the varying results of the Dark Triad personality traits among university students, the need to conduct this study is deemed more significant to contribute further knowledge in dark personality traits. The findings could potentially be beneficial for preventing and intervening in cyberbullying problems.

## **Dark Triad Personality Traits and Cyberbullying Behaviour Relationships**

This section discusses the findings from prior studies investigating the relationship between personality traits and cyberbullying among university students. Goodboy and Martin (2015) conducted a study to examine the relationship between the dark triad personality traits and self-reported cyberbullying behaviours. This study accumulated 227 questionnaires from college students to report their traits of narcissism, psychopathy, and Machiavellianism as well as their cyberbullying behaviours. It was revealed that all three dark traits were correlated with cyberbullying. In the same vein, a study by Van Geel et al., (2017) also found that Narcissism, Machiavellianism and Psychopathy have a significant relationship with cyberbullying. However, those studies were conducted among university students in the USA, which is individualistic culture and cannot be generalised to other countries, especially Malaysia. Thus, this research fills up the gap by conducting research among public university students in Malaysia.

Upon further investigation, most prior research on this topic had discovered inconsistent results on the relationship between personality traits and cyberbullying. For instance, Kircaburun et al., (2018) studied the direct and indirect associations of the Dark Tetrad traits with Problematic Social Media Use (PSMU), such as cyberbullying, by using 761 participants from a Turkish university. The participants consist of 274 male and 487 female university students. This study showed that only Machiavellianism and Psychopathy were directly associated with cyberbullying. The trait of Narcissism was indirectly correlated with cyber-trolling, which was another type of PSMU (Kircaburun et al., 2018). This finding did not align with the previous research that asserted all the Dark Triad traits were correlated with cyberbullying behaviour from the USA sample. (Goodboy & Martin, 2015; Van Geel et. al, 2017). These inconsistent findings could be due to the different geo-locations between the studies.

A study by Balakrishnan et al. (2019) found that cyberbullying detection mechanism was greatly enhanced with the assistance of factoring in the user's personality. Out of the Dark Triad traits, psychopathy emerges as the most significant trait that can effectively detect bullies online (Balakrishnan et al., 2019). This result is supported by previous researchers that had concurred that the trait psychopathy has a significant positive relationship with cyberbullying (Goodboy & Martin, 2015; Van Geel et al., 2017; Kircaburun et al., 2018). Hence, the current research could potentially aid future researchers in detecting cyberbullies online by factoring in the related personality traits of a cyberbully.

In conclusion, a few limitations exist in the prior research regarding this subject. Some studies are conducted on samples from only one university. Besides that, none of those mentioned above articles are located near the geo-location of Asia. Hence, the research result cannot be fully applied to populations beyond the geo-locations of the studies. The previous research also has the issue of inconsistency in the results. Some studies claimed that all the Dark Triad traits were correlated with cyberbullying while others have conflicting results. This research can overcome the limitations by conducting research in Malaysian public university students. Therefore, this study tested the following hypotheses:

- H1 There is a significant positive relationship between Machiavellianism and cyberbullying behaviour among university students.
- H2 There is a significant positive relationship between psychopathy and cyberbullying behaviour among university students.
- H3 There is a significant positive relationship between narcissism and cyberbullying behaviour among university students.

## **Effects of the Dark Triad Personality Traits on Cyberbullying Behaviour**

A large body of past literature had elucidated the effects of personality traits on problematic social media uses such as cyberbullying. However, studies on the potential role of dark personalities were entirely overlooked (Kircaburun et al., 2018). But there are still some available studies that can give a good picture on how these dark traits are related to cyberbullying. A study done by Gibb and Devereux (2014) among 297 college students aimed to investigate cyberbullying behaviours among university samples. Most of the participants were non-Hispanic White (67.4%), female (61%), and heterosexual (91.9%). Cyberbullying Questionnaire was modified and completed by the participants (CBQ; Calvete et al., 2010). The Dark Triad short form scale, which measures Machiavellianism, subclinical narcissism, and subclinical psychopathy, was then completed by the participants. Cyberbullying behaviour was more likely reported by people who scored high on a subclinical test of

psychopathy. Cyberbully victims, men, and people with subclinical psychopathy also participated in a broader spectrum of cyberbully behaviour. The findings of their study showed that individuals that scored high in subclinical psychopathy were more inclined to engage in cyberbullying behaviour, hence this supported their hypothesis that psychopathy trait is related to cyberbullying. Meanwhile, the other two traits, Machiavellianism and narcissism were not significant predict cyberbullying. Another study by Goodboy and Martin (2015) also revealed that psychopathy emerged as the unique predictor of cyberbullying among 227 undergraduate students (104 male, 112 female, 11 sex not identified) from the United States of America. Their study used the Dirty Dozen scale (Jonason & Webster, 2010) to measure the Dark Triad personality and the Revised Adolescent Peer Relations Instrument (RAPRI) to measure the cyberbullying behaviour. In the same vein, a study by Pabian et al., (2015) conducted among 324 Belgian participants to study the effect of Dark Triad personality traits on cyber aggression also discovered Psychopathy as the only significant predictor of cyber aggression, which includes cyberbullying.

Furthermore, Safaria et al. (2020), that examines the relationship and the effects of Dark Triad personality on cyberbullying behaviour, had collected 2407 respondents from Indonesia. The study discovered a contradicted result from previous research in which Machiavellianism is the strongest predictor of cyberbullying behaviour, followed by Psychopathy and Narcissism. The instruments used in the study are the Short Dark triad (SD3) and a one-item cyberbullying scale. Hence, the finding of this study showed that there would be a significant positive effect of Machiavellianism on cyberbullying behaviour among university students.

Van Geel et al., (2017) researched to investigate the relationship between personality traits with traditional bullying and cyberbullying. The study included two personality models, the Big Five Model and the Dark Triad Model, with the addition of subclinical sadism. 1568 respondents are ranging in age from 16 to 21 years old, with 61.9% of them being female. The European Cyberbullying Intervention Project Questionnaire was used to assess cyberbullying (Del Rey et al., 2015). The Short Dark Triad Questionnaire (Jones & Paulhus, 2014) considers the presence of the dark triad. This study showed that sadism is a significant predictor of cyberbullying, while narcissism and psychopathy were only slightly substantial. Machiavellianism, on the other hand, was not significant. This study is in line with a study by Kircaburun et al., (2019) which found that Psychopathy and Sadism were the only traits that influence cyberbullying as a result showed that men with Sadistic traits are more inclined to engage in cyberbullying behaviour, while Psychopathy played a role in cyberbullying behaviour among women. The research involved 772 Turkish university students (280 male, 492 women) recruited through convenience sampling. These findings contradicted the earlier research by Goodboy and Martin (2015) and Gibb and Devereux (2014), which showed that only psychopathy was found to be a significant predictor. The past researchers concluded psychopathy was the sole trait related to cyberbullying. Hence, it is rational to note that in the model, psychopathy can be raised as the only predictor of cyberbullying.

Finally, it can be concluded that some researchers have substantiated that psychopathy is the sole predictor of cyberbullying behaviour out of all the Dark Triad traits (Goodboy & Martin, 2015; Gibb & Devereux, 2014) meanwhile another research showed Machiavellianism to be the strongest predictor of cyberbullying behaviour (Safaria et al., 2020). However, research that included the trait Sadism in the study had discovered varying results as it was asserted that psychopathy was shown to be only slightly significant predictor (Van Geel et al., 2017). Thus, it is important to conduct this research to bring a broader understanding of personality traits and cyberbullying behaviour among university students. Therefore, this study tests the following hypotheses regarding the influence of the Dark Triad personality traits on cyberbullying behaviour.

- H4: There is a significant positive effect of Machiavellianism on cyberbullying behaviour among university students.
- H5: There is a significant positive effect of psychopathy on cyberbullying behaviour among university students.
- H6: There is a significant positive effect of narcissism on cyberbullying behaviour among university students.

## **Research Framework**

This research aims to study the effects of dark triad personality traits on cyberbullying behaviour among university students in Malaysia. This study utilised the Dark Triad Personality Model as the fundamental model for the study to measure the effects of personality traits on cyberbullying behaviour among Malaysian university students. The conceptual framework of this study is shown in Figure 1. This research used three sub-dimensions

of the Dark Triad Model, such as Narcissism, Machiavellianism, and Psychopathy as the predictor of the cyberbullying behaviour among university students in Malaysia.

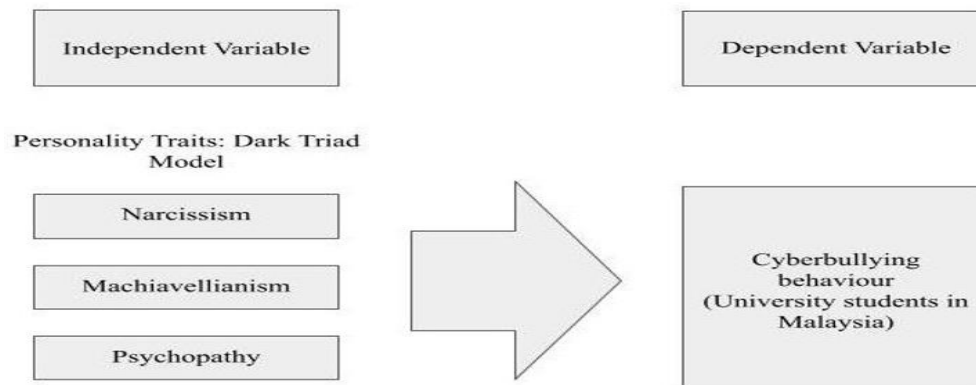


Figure 1. Conceptual framework of study

## Method

### Research Design

The research design is based on a quantitative approach using descriptive, correlational and non-experimental causal studies. This research utilised a cross-sectional design that enables the researcher to acquire a large amount of data at one point. The researcher used questionnaires to measure the variables of personality traits and cyberbullying behaviour as it is deemed the most suitable research design to collect specific and well-structured quantitative data for the data approach (Kumar, 2019). The data will be analysed using descriptive and inferential statistics.

### Population and Sampling

The population of this study is university students in Malaysia. The targeted sample to represent the population data is obtained from public university students in Malaysia. The total number of students in public higher education institutions in Malaysia has reached around 706,550 students, which is significantly higher among females compared to male students (Hirschmann, 2021). Based on the Krejcie and Morgan table, the minimum sample size required for this study is around 384 respondents (Krejcie & Morgan, 1970). However, to maximise the response rate of the data collection, the targeted sample size decided for this research will be 400 public university students. Due to the wide range of the population and the difficulty to get the sampling frame of the population, this study utilised non-probability sampling, a convenience sampling method to select the respondent. The questionnaires were distributed online through WhatsApp, Twitter, Instagram and Facebook to reach the targeted sample.

### Research Instrument

There are three sections in the questionnaire of this study. Section A is to obtain demographic information, that consists of 4 items, which are age, gender, race, and place of study. In Section B, to measure the variable of personality traits, which is utilised the 12-item Dirty Dozen Dark Triad Scale developed by Jonason and Webster (2010). This 12-item questionnaire is used to assess Machiavellianism, Psychopathy and Narcissism based on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). All dimensions in the scale scored a Cronbach's Alpha of above .79. The items in this instrument were proved to have acceptable psychometric properties such as construct validity (Jonason & Luévano, 2013), and it is reliable over time and across several tests (Jonason & Webster, 2010). In Section C, the Cyberbullying Offending Scale (Patchin & Hinduja, 2015) measures the level of cyberbullying behaviour among the respondents. The questionnaire consists of 9-items that represent the most integral elements commonly included to define cyberbullying, which are repetition and harm. It only included five response options, on a scale of 0 (never) to 4 (many times). Researchers have revealed that the Cyberbullying Offending Scale has excellent psychometric properties, where the alpha coefficient of the original scale exceeded 0.89 and has a high construct validity and internal reliability

(Hamburger et al., 2011). The inter-item correlations for each item in the scales exhibited relatively high numbers, and it was statistically significant (Patchin & Hinduja, 2015).

### **Data Collection Procedure**

The researcher used online platform to collect the data due to the ease of implementation (Kokkinos et al., 2016). The online tool “Google Form” is used to create online questionnaires in order to directly receive responses from respondents. It circulated through various social media and messaging apps such as WhatsApp, Twitter, Instagram and Facebook to acquire the data more easily as it is more widespread and cost-effective. Potential respondents may read the instructions and the confidentiality agreement stated in the online questionnaire. Hence, the respondents that choose to answer the questionnaire can be considered that they are already given informed consent. Aside from that, the researcher also asked fellow students from various public universities in Malaysia to spread the questionnaire to their friends and other students in their respective universities to participate in the study.

### **Data Analysis**

This study uses descriptive and inferential statistics to analyse the data through SPSS Version 27. The descriptive will be used to analyse the demographic information and the overview of the study variables. Pearson correlation analysis and Multiple Linear Regression are used to test the hypothesis. Pearson Correlation analysis is conducted to determine the relationship between personality traits and cyberbullying behaviour. The value will be regarded as significant if the value is  $p < 0.01$  for two tails, which means that the dimension is correlated to cyberbullying. Their  $r$  values will also be examined to identify the strength of their relationship. Multiple Linear Regression analysis is used to determine the effects of personality traits on cyberbullying. It is suggested from previous research that Multiple Regression should be conducted in addition to correlations when studying the influences of Dark Personality due to the common core they share (Furnham et al., 2013). This is calculated by analysing the  $\beta$  value in the standardised coefficient table of each personality dimension.

## **Results and Discussion**

### **Demographic Profile of Respondents**

A total of 400 online questionnaire responses were received from public university students all over Malaysia. The response rate for this study is 100%, as the target number of samples is precisely 400. All data obtained from the students were used in the data analysis. Table 4.1 presents the demographic information of the respondents in this study. The results indicated that most of the respondents were female students, with 283 (70.8%) and only 117 male students (29.3%) participated in the study. Most respondents are aged between 18-22 years (70.5%) followed by 110 students aged 23-37 years (27.5%). Students aged 28-32 and above 33 years old have the same value, only 4 students (1.0%). Most of the respondents are of Malay ethnicity, with a total of 336 students (84.0%), 39 are Chinese (9.8%), 9 are Indians (2.3%), 8 are Bumiputera Sabah (2.0%), 3 are Bumiputera Sarawak (0.8%), and 5 respondents answered others (1.3%). Most respondents are from UiTM with 121 students (30.3%), followed by UTM with 115 students (28.7%), UM with 33 students (8.3%), and UMT with 24 students (6.0%) and the rest of the universities have below than 5% response rate.

### **Prevalence of Cyberbullying Behaviour among University Students**

The first objective of this study is to examine the prevalence of cyberbullying among undergraduate students in Malaysia. Table 4.1 shows the level of cyberbullying behaviour among the respondents. The level of cyberbullying behaviour is identified through the 9-item Dirty Dozen scale questionnaire, which consists of a 5-point Likert scale of 0 (never) to 4 (many times). Based on Table 4.1, the level of cyberbullying behaviour among university students is low as the overall mean for the variable is 0.35 (SD = 0.622). The highest mean score out of all the items is seen to be Item-5, which is spreading rumours about someone online (M=0.58, SD=0.993).

Meanwhile, the lowest mean score is Item-8, which relates to creating a mean or hurtful web page about someone (M=0.16, SD=0.588). However, it can be observed that the mean score for each item is in the low-

level range as all of them are below 1.33. Most university students (93.8%) have a low level of cyberbullying behaviour, while 4.5 per cent students scored moderate, followed by 1.8 per cent with high cyberbullying behaviour.

**Table 4.1. Descriptive analysis of items for dimension cyberbullying behaviour**

No.	Item	N f (%)	O f (%)	AFT f (%)	ST f (%)	MT f (%)	Mean	S.D.
1.	I cyberbullied others.	303 (75.8)	53 (13.3)	33 (8.3)	5 (1.3)	6 (1.5)	0.40	0.813
2.	I posted mean or hurtful comments about someone online.	301 (75.3)	53 (13.3)	36 (9.0)	5 (1.3)	5 (1.3)	0.40	0.804
3.	I posted a mean or hurtful picture online of someone.	308 (77.0)	51 (12.8)	27 (6.8)	10 (2.5)	4 (1.0)	0.38	0.801
4.	I posted a mean or hurtful video online of someone.	306 (76.5)	49 (12.3)	27 (6.8)	11 (2.8)	7 (1.8)	0.41	0.868
5.	I spread rumours about someone online.	272 (68.0)	59 (14.8)	43 (10.8)	17 (4.3)	9 (2.3)	0.58	0.993
6.	I threatened to hurt someone online.	346 (86.5)	26 (6.5)	13 (3.3)	9 (2.3)	6 (1.5)	0.26	0.757
7.	I threatened to hurt someone through a cell phone text message.	339 (84.8)	29 (7.2)	20 (5.0)	7 (1.8)	5 (1.3)	0.28	0.745
8.	I created a mean or hurtful web page about someone.	364 (91.0)	20 (5.0)	6 (1.5)	8 (2.0)	2 (0.5)	0.16	0.588
9.	I pretended to be someone else online and acted in a way that was mean or hurtful to them.	338 (84.5)	30 (7.5)	16 (4.0)	10 (2.5)	6 (1.5)	0.29	0.786
<b>Overall Mean</b>							<b>0.35</b>	<b>0.622</b>

\*Note: 5-Likert scale is used, where N=Never, O=Once, AFT=A Few Times, ST=Several Times, MT=Many Times, f=frequency, %=percentage, S.D.=standard deviation

The result of descriptive analysis indicated that the overall level of cyberbullying behaviour is low, as 93.8% of university students scored low level in cyberbullying behaviour, while only 7.3% scored moderate to a high level. However, despite the low level of cyberbullying behaviour, more than half of the participants (55.8%) responded that they had acted in at least one of the cyberbullying behaviours specified, whereas 44.3% reported that they had not engaged in any of them. This result raises a concern about cyberbullying behaviour among university students, which justifies the need to expand and focus our research on this population.

The finding of the present study is consistent with previous research, in which MacDonald and Roberts-Pittman (2010) stated that only 8.6% of American college students in their study, reported cyberbullying someone else. Meanwhile, a study among 1,263 Malaysian young adults by Balakrishnan and Fernandez (2018) found that 20.3% of their samples reported cyberbullying, which is quite comparable to the result of the present study. Hence, there is evidence that cyberbullying behaviour also happens beyond school years, even at a low level. It is important to consider the overall level of cyberbullying behaviour to avoid being too simplistic by just considering whether or not students engaged in cyberbullying. This is because cyberbullying does not follow any known patterns. Individuals may have simply participated in a single act of cyberbullying behaviour and therefore been mislabelled as 'cyberbully,' even though one incident of cyberbullying does not indicate one is a cyberbully, as has been stated (Slonje et al., 2013).

There are a few possible reasons for this finding. One of the plausible reasons is from previous research, that it has been stated that Malaysian university students showed low intention to engage in cyberbullying due to being subjected to negative social pressure from their friends and family towards the behaviour (Shaikh et al., 2021). Besides that, students in higher education settings do not tolerate cyberbullying as easily, since they tend to express more empathy towards the victims (Watts et al., 2017). Hence, this explains the low level of cyberbullying behaviour among university students in this present study.



Aside from that, according to Baldasare et al. (2012), participants in their study expressed reluctance to label their behaviour as cyberbullying, as they claimed that they were 'just joking' and tend to associate the term 'cyberbullying' with adolescent behaviour. Participants may also refuse to admit to the negative behaviour due to their tendency to look at themselves in higher regard. Thus, the low rates of cyberbullying obtained in the present and prior studies were most likely due to reporting bias, as participants were either reluctant to classify themselves as cyberbullies or perceived the behaviour as unfit to the definition of cyberbullying.

### **Types of Dark Triad Personality among University Students**

The second objective of this study is to determine the Dark Triad personality types among university students. The descriptive statistics and prevalence for each Dark Triad personality trait (Machiavellianism, Psychopathy, Narcissism) are presented. Table 4.2 shows the descriptive statistics of Machiavellianism. The overall mean of Machiavellianism is 2.50 (SD = 0.91), which can be considered moderate. More students scored low in Machiavellianism (45.5%) compared to the moderate level (44.3%). Only 10.3 per cent of university students scored high in Machiavellianism. As for the Psychopathy traits, the overall mean for Psychopathy is 2.11 (SD = 0.84), which is considered low among university students. Most of the students scored low in Psychopathy (66.3%). While 115 university students (28.7%) scored moderate, followed by 20 students that scored high (5.0%) in Psychopathy. Next, for the dimension of Narcissism in the Dark Triad personality traits, the overall level of Narcissism among university students is moderate with a score of 2.84 (SD = 1.03), as all the items have a mean score of moderate level.

Table 4.2. Types of dark triad personality

Variables	Mean	S.D.	Level
Machiavellianism	2.50	0.91	Moderate
Psychopathy	2.11	0.84	Low
Narcissism	2.84	0.50	Moderate

Mean value (Low = 1.00 - 2.33; Moderate = 2.34 - 3.67; High = 3.68 - 5.00)

The findings indicated that Narcissism emerged as the most prevalent trait among university students. This is because 99 university students (24.8%) have a high level of Narcissism, which is higher compared to the other two Dark Traits, Machiavellianism (10.3%) and Psychopathy (5%). The overall level of Narcissism and Machiavellianism is moderate meanwhile, the level of Psychopathy among university students is low. The findings of previous studies also showed a similar trend in which the level of Narcissism is the highest in the Dark Triad personality, followed by Machiavellianism and Psychopathy among university students in Malaysia (Mumin, 2021). Vedel and Thomsen (2017) also presented the same pattern in their findings, as their university student samples also scored Narcissism as the highest, then Machiavellianism and Psychopathy. Thus, it can be observed that the findings for the Dark Triad personality traits of the present research align with the past studies.

This finding would probably be because the traits of Psychopathy and Machiavellianism were known to be the "darkest" among the Dark Triad (Rauthmann & Kolar, 2012), which can result in a lower prevalence rate compared to the trait Narcissism. Furthermore, it would also make sense that respondents' answers to the questionnaires were influenced by their social desirability as it is a self-administered questionnaire. Thus, participants would be more comfortable admitting their Narcissistic traits than Machiavellianism and Psychopathic traits.

### **Relationship between Dark Triad Personality Traits and Cyberbullying Behaviour.**

The third objective of this study is to identify the relationship between the Dark Triad personality traits and cyberbullying behaviour among university students. Table 4.3 shows the relationship between Dark Triad personality traits and cyberbullying behaviour. The findings indicated a significant positive relationship between the Dark Triad personality traits and cyberbullying behaviour among university students.

The findings of the present study showed that there is a significant positive relationship between the Dark Triad personality traits and cyberbullying behaviour among university students. Of all the Dark Triad traits, Machiavellianism has the highest correlation to cyberbullying behaviour ( $r = 0.417$ ,  $p < 0.001$ ), indicating a moderate correlation. Meanwhile, Psychopathy ( $r = 0.376$ ,  $p < 0.001$ ) and Narcissism ( $r = 0.274$ ,  $p < 0.001$ ) both have significant weak correlation with cyberbullying behaviour (Dancey & Reidy, 2007). Hence, the results indicated that Hypothesis 1, Hypothesis 2 and Hypothesis 3 are accepted.

The result of this present study can be supported by various past research, in which they reported consistent results. Goodboy & Martin (2015) examined the association between the dark triad personality traits and self-reported cyberbullying behaviours across a body of research. They found that all three Dark Triad traits positively correlate to cyberbullying behaviour among college students. Previous studies had discovered a positive and significant relationship between personality and cyberbullying behaviour, in which they incorporated the Dark Triad personality as the personality construct of their study (Shaikh et al., 2021). Research that aims to identify bullying trends within Twitter by referring to the relationship between personality traits and cyberbullying also found that Psychopathy is the most significant trait that can be used to detect cyberbullies online (Balakrishnan et al., 2019). The result of the study was consistent and can be supported by much previous research that reported Psychopathy to have a significant correlation to cyberbullying. Even though there are studies that support the present research, there were also a few past research that contradicts the current findings. Kircaburun et al., (2018) studied the direct and indirect associations of the Dark Tetrad traits with Problematic Social Media Use (PSMU), such as cyberbullying. The results of the study reported that only Machiavellianism and Psychopathy were directly associated with cyberbullying behaviour. Besides that, A study also found that all the three Dark Triad traits have a positive correlation with cyberbullying behaviour, however, the correlation between them was classified as weak correlation (Van Geel et al., 2017).

The reason for these conflicting findings may be due to the fact that the study conducted has a different geo-location, which could affect the findings mainly if the instrument used was translated into a foreign language. Besides that, some of the research also used other instruments to measure the Dark Triad traits, as some used the Short Dark Triad questionnaire instead of the Dirty Dozen questionnaire. Since the questionnaires were developed based on different conceptual definitions of the Dark Triad personality traits, the measuring system of the questionnaire can cause differing results. However, as for the studies that have consistent findings with the present research, the result is most probably due to personality being the driving component that triggers irrelevant thinking, which tends to boost engagement and attracts people to cyberbullying (Kubiszewski et al., 2015). Aside from that, the finding could also be because of the malevolent nature of each Dark Triad personality trait, which is deemed as probable to be correlated with cyberbullying due to the expected negative core they share.

Table 4.3. Relationship between dark triad personality traits and cyberbullying behaviour

Dimension	Cyberbullying Behaviour	
	r	p
Machiavellianism	0.417**	<0.001
Psychopathy	0.376**	<0.001
Narcissism	0.274**	<0.001

Note: \*\*. Correlation is significant at the 0.01 level (2-tailed)

### Effects of the Dark Triad Personality Traits on Cyberbullying Behaviour

The last objective of the present study is to identify the effects of the Dark Triad personality traits on cyberbullying behaviour among university students. The Variance Inflation Factor (VIF) value for each dimension of the Dark Triad personality trait is all lower than 2.5, thus there is no issue of multicollinearity among the independent variables (Johnston et al., 2018). The regression analysis findings in Table 4.4 indicated that the Dark Triad personality traits significantly influenced cyberbullying behaviour. The trait of Machiavellianism ( $\beta = 0.28$ ,  $p < 0.01$ ) and Psychopathy ( $\beta = 0.223$ ,  $p < 0.01$ ) have significant positive effects on cyberbullying behaviour among university students, supporting Hypotheses 4 and 5. However, Narcissism did not significantly affect cyberbullying behaviour of university students ( $\beta = 0.07$ ,  $p > 0.01$ ), Hence, the finding did not support Hypothesis 6. The regression analysis indicated that Machiavellianism and Psychopathy both significantly positively affect cyberbullying behaviour. However, the Narcissism trait does not significantly influence cyberbullying behaviour of university students.

Table 4.4. Multiple regression analysis between the dark triad traits and cyberbullying behaviour

Variables	Cyberbullying Behaviour		
	$\beta$	P-value	VIF
Machiavellianism	0.280	<0.001	1.460
Psychopathy	0.223	<0.001	1.297
Narcissism	0.076	0.132	1.283

Note:  $R^2 = 0.221$ ,  $F = 37.464$ ,  $P\text{-value} = <0.001$

The current study found that Machiavellianism was the most influential predictor of cyberbullying and followed by Psychopathy. The findings are consistent with the results of the previous study by Safaria et al. (2020) that was conducted in Indonesia. As stated by Paulhus and Williams (2002), Machiavellianism is a personality characterised by the externalisation of blame, emotional coldness, and interpersonal strategies to manipulate others for personal gain. Barlow et al., (2010) stated that this Machiavellianism trait tends to see the world cynically with distrust by using others and exploit the weaknesses of others, resent intense emotional involvement with others, and have been found to lack empathy. This finding is consistent with a study by Kircaburun et al., (2018) stated Machiavellianistic traits would move past moral standards, and an absence of guilt can be the unique determinant of antisocial online behaviour.

Gibb and Devereux (2014), as well as Goodboy and Martin (2015), also found that psychopathy is the only significant predictor of cyberbullying behaviour, while Machiavellianism and Narcissism did not significantly predict cyberbullying. Hence, this showed that past researchers also supported the Psychopathy trait as one of the significant predictors of cyberbullying behaviour. Another study by Van Geel et al., (2017) showed that the Psychopathy and Narcissism traits are only slightly important predicts cyberbullying behaviour, meanwhile, Machiavellianism is not necessary. This is probably because Psychopathy was a substantial predictor of cyberbullying, which is consistent with a study about "internet trolling" (Buckels et al., 2014), where psychopathy was shown to be a predictor of trolling, albeit with a lesser impact size than sadism. Psychopathic individuals tend to perform destructive behaviour patterns in interpersonal relationships, using skits and warmth to manipulate others to profit themselves. According to Hare (1999), a psychopath also tends to have high impulsivity and a disposition toward reckless, inappropriate, immoral, or even violent conduct. Meanwhile et al., (2008) mentioned that psychopath tends to lack empathy and do not feel guilty for their destructive behaviour toward others. This is because people with high levels of psychopathy are more aggressive and less sympathetic than others, which are all the traits of a cyberbully (Ang et al., 2011). The immediate thrill of realising that they are possibly harming another person may motivate these people's actions and encourage their proclivity to engage in similar acts in the future.

However, in the present study, Narcissism does not influence cyberbullying behaviour among undergraduate students in Malaysia. According to Kircaburun et al. (2018), narcissism was not associated with cyberbullying, among other attributes. It is possible that after psychopathy is considered, narcissism's impact on interpersonal violence fades away. One of the plausible reasons for this finding is that perhaps the narcissistic trait involves a pattern of self-centred, arrogant thinking and behaviour, a lack of empathy and consideration for other people, and an excessive need for admiration. Thus, this characteristic is only focused on themselves rather than others.

## **Implication of Study**

The present research contributes to a greater understanding of the following ways to grasp better and minimise cyberbullying. First, Dark Triad personality characteristics will be used to investigate previously understudied cyberbullying behaviour. Second, only a few researchers have recruited university students as sample participants. Most of the research on cyberbullying has been conducted on pupils in schools. Even studies focusing on university students only covered a small aspect of cyberbullying. As a result, this study contributes to the recent findings by identifying the personality attributes contributing to cyberbullying among Malaysian university students. This study proposed that two traits of the Dark Triad personality, which are Machiavellianism and psychopath, significantly contributed to the cyberbullying behaviors among undergraduate students from a Malaysian perspective.

This research provides empirical evidence to the Malaysian government, students, IT practitioners, psychologists, university management, parents, and other stakeholders. It will enable them better to understand personal factors' influence on cyberbullying behaviour. The research shows the influence of the Dark Triad personality traits that lead to cyberbullying behaviour among Malaysian university students. This study also aids Malaysia's relevant authorities in developing effective methods to counteract cyberbullying, such as mentoring, role-playing, and legal action to raise awareness of the seriousness of cyberbullying. One of the most critical components in reducing cyberbullying is raising awareness. Educating students about cyberbullying is essential to any effective bullying prevention strategy. Campbell (2005) also says that promoting student understanding can help prevent cyberbullying. Moreover, an individual's level of understanding of cyberbullying can significantly impact their actions. Individuals who have a better awareness of cyberbullying and its effects on victims are less likely to engage in this conduct than those who do not (Lee & Shin, 2017).

Furthermore, to prevent immoral conduct such as cyberbullying in today's digital age, the primary step is to identify the factors that influence such behaviour. It has been proposed that personality traits are crucial explanatory determinants for cyberbullying behaviour, which includes victimisation and aggressiveness (Fang et al., 2020). Policymakers can figure out ways to decrease and manage the negative effects of technology in society by focusing on the factors of personality traits. The present research can provide knowledge on the influence of Dark Triad personality traits, which can be of practical use by applying it to detect cyberbullies online as previously done by Balakrishnan et al. (2019). The previous research incorporates the Dark Triad features in a machine-learning algorithm to detect cyberbullying among Twitter communities. Thus, the finding of this present research can be one of the reasonable attempts for policymakers to curb cyberbullying issues by seeing them online and taking legal actions against them.

The outcomes of this research are likely to help Malaysia achieve Sustainable Development Goal 16: Peace, justice, and strong institutions. Understanding the social variables connected to cyberbullying will also benefit Malaysia's National Transformation 2050 (TN50). This, however, will only have a short-term effect on society. In the long run, parents, universities, and the government should establish rules or policies to minimise cyberbullying by considering the findings of this research. This will assist families and universities in fostering an environment where university students find it challenging to engage in cyberbullying.

## **Limitation and Recommendations**

When analysing the results, some limitations need to be addressed. To begin with, the collection of data was convenient, which caused the inability to generalise the findings of the study to the population as a whole. This engendered most of the respondents in the present study to be female graduates, which limits the generalisability of the findings. Secondly, self-report measures risk eliciting socially desired responses as they tend to look at themselves in higher regard. Thirdly, the present study's limitation is that it only looked at a limited set of behaviours and did not account for all conceivable cyberbullying activities. Individuals who stated that they did not participate in any of these behaviours may have acted in other behaviours that would fit the definitional criteria for cyberbullying, such as harassing someone on Instagram. Lastly, previous studies discovered another dark trait, which is Sadism (tendency to find joy in the suffering of others) that can be incorporated into the Dark Triad to become the Dark Tetrad personality traits. According to Van Geel et al. (2017), Sadism appears to influence cyberbullying behaviour. However, the present study did not include Sadism in the cyberbullying research.

More study is needed to delve deeper into the influence of the Dark Triad personality traits on cyberbullying. Continued research on the role of personality in increasing cyberbullying could aid in developing preventative and intervention initiatives such as anti-bullying educational programmes for parents, educators, and students to help lessen or remove the problem. There are several suggestions that can be listed for future research. Firstly, in order to attempt a generalisation of the findings, future studies may use random sampling to conduct research to increase the accuracy of representation due to the lack of bias. Secondly, future studies could improve by incorporating additional data, such as from interviews, to avoid the risk of biased responses. Thirdly, as new technologies are produced, future studies should continue to study the conceivable spectrum of cyberbullying behaviours and disruptive behaviours associated with these new technologies as it would further characterise and widen the profile of people who engage in cyberbullying behaviour. Last but not least, it is recommended that future studies investigate the trait Sadism, by replicating the same methodology of the present research and using the model of Dark Tetrad personality traits.

## **Conclusion**

In conclusion, cyberbullying among youth has become a great issue today. Cyberbullying can have egregious effects on its victims in which it can lead students to attempt and commit suicide. Prior study has centred on high school students, with university students almost entirely neglected. As a result, the focus of this research has been on further investigating and evaluating cyberbullying by identifying factors that affect university students.

Investigating personality factors related to cyberbullying behaviour could give significant knowledge to researchers, universities, policymakers, the Malaysian government, and practitioners. This research showed the psychological element, such as the Dark Triad personality traits, could drive Malaysian public university students to engage in cyberbullying. This study used the Dark Triad personality trait model to examine the

cyberbullying behaviour of Malaysian university students. The findings obtained from the study can be used as criteria to predict cyberbullying behaviour.

This study tested Dark Triad personality factors as antecedents of Malaysian students' attitudes. The data analysis results suggest that all three Dark Triad personalities (Machiavellianism, Narcissism, Psychopathy) are significantly correlated to cyberbullying behaviour. This study also reports that the level of cyberbullying behaviour among university students is low. The study confirms that Machiavellianism and Psychopathy can lead to the development of cyberbullying attitudes of Malaysian undergraduates. Meanwhile, the Narcissism trait is not an antecedence of cyberbullying behaviour. Therefore, it can be concluded that most of the findings are in line with empirical shreds of evidence from the literature. The Dark Triad personality traits have given an exciting insight into cyberbullying behaviour among Malaysian undergraduate students. It eventually helped this study to highlight the relationship and the effects between toxic cyberbullying behaviour and personality traits.

## Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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## **Parent Groups Established with Instant Messaging Applications for Math Lessons During Covid-19: Parents' Opinions**

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**Abstract:** It is known that communication between parents and instructors has decreased significantly due to the lockdowns and distance education implemented due to Covid19. This shortcoming is being attempted to be remedied via instant messaging applications. Therefore, the purpose of this study is to learn what parents' opinions are of parent groups that math teachers have created using online instant messaging applications like WhatsApp, Bip, Telegram, etc. during the Covid-19 pandemic. Semi-structured interviews were used to collect data for the study, which was planned as a case study, and content analysis was used to analyze the data. Five male and five female parents of secondary school-aged children make up the study group, they were chosen using the criteria sampling method. The parent groups created using instant messaging applications are commonly used for announcements, homework, homework controls, the distribution of course materials, video URLs, reminders, and the delivery of lesson URLs and passwords for online courses. Students in certain groups also sent mathematics questions to the parent groups, where the problems were answered by the students' teachers. Although it is clear that these groups are helpful for parents in general, there are some drawbacks, including teachers' loss of interest in the groups towards the end of the school year, concerns about security of personal information, late-night messages, and unnecessary talks.

**Keywords:** WhatsApp, Parent groups, Mathematic lesson, Instant messaging applications

### **Introduction**

The Covid-19 outbreak, which has become a pandemic, has affected not only the field of health but also the economy, education and social fields. The rapid spread of Covid-19, which was first seen in Wuhan, China in December 2019, has caused social troubles and concerns in many countries of the world (Karatepe et al., 2020). Therefore, many countries have temporarily suspended face-to-face education and accelerated distance education activities. In addition to existing applications to ensure communication with students and parents, live lessons and online courses have been carried out by educational institutions in almost every country (Chang & Satako, 2020). During this process, elementary, secondary and high schools in Turkey continued teaching activities through TRT EBA TV channels and Education Information Network (EBA). Not only is it limited to TV channels, but also synchronous education opportunities, in which teachers and students interact simultaneously, have increased. In this way, to provide effective education and training, Turkey, like most countries, has adopted digital technology and carried out the distance education process.

However, it is known that this situation weakens communication between parents and teachers. Creating chains of home and school life and ensuring continuity in education is achieved with successful school-family cooperation (Çağdaş & Seçer, 2011). However, studies have revealed that family involvement is important and contributes to children, educators, families and schools at all levels (Atabey & Tezel-Şahin, 2011; Çakmak, 2010; Özdamlı & Yıldız, 2014; Wahyuni & Febianti, 2019; Wasserman & Zwebner, 2017). According to

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Hamlin and Flessa (2018), the academic success of children with family members who communicate regularly with the school and support their child based on this communication is higher. This shows the importance of family involvement. However, this requires an effective link between teachers and parents.

Creating chains of home and school life and ensuring continuity in education is achieved with successful school-family cooperation (Çağdaş & Seçer, 2011). Schools use many different ways to maintain communication between parents and teachers. Techniques such as phone calls, newsletters, correspondence, photographs, booklets, school visits, notice boards, tape and video recordings, brochures, newsletters, portfolio files, meetings, and arrival and departure times are the most common (Aktaş-Arnas & Yaşar, 2011; Çağdaş & Seçer, 2011; Çalışkan and Ayık, 2015; Temel et al., 2010; Tezel-Şahin & Özyürek, 2016; Tuncer et al, 2018). However, due to the pandemic, the fact that we have switched to distance education and the lockdowns have inevitably caused old habits to be replaced by new methods and techniques (Balcı, 2017). In the last few years, thanks to the diversification and expansion of the use of new technologies, communication channels between teachers and parents have increased through Internet-based computer or smartphone applications (Thompson, 2009). Researchers state that new technologies provide communication between parents and teachers and this will continue increasingly in the future. (Avcı, 2020; Balcı & Tezel-Şahin, 2018; Wasserman & Zwebner, 2017). With the help of instant messaging applications such as WhatsApp, Telegram, and Bip, uninterrupted and fast communication can be achieved (Shechtman & Boucherian, 2015). The importance of these applications has increased with the pandemic.

Since instant messaging applications allow direct messaging anytime and anywhere, using these applications significantly increases mutual accessibility between parents and teachers (Ayçiçek, 2019; Shechtman & Boucherian, 2015). In the literature (Avcı, 2020; Balcı & Tezel-Şahin, 2018; Sanders, 2016; Wasserman & Zwebner, 2017), it is possible to find many studies examining the intended use of instant messaging applications in terms of teachers. However, studies examining the opinions of families, which is another side of the use of instant messaging applications, are less common (Tuncer, 2021). In some studies, it is emphasized that it is important to investigate the use of these applications, which are stated to have significant disadvantages as well as advantages, in terms of putting forward the necessary recommendations for proper use (Avcı, 2020; Bouhnik et al., 2014). This study is carried out to reveal reasons for using instant messaging groups for mathematics lessons in families' communication with their children's teachers, the advantages and disadvantages of them and the opinions of parents on this practice.

## **Method**

In this study, one of the qualitative research methods, the case study, was used. In the case study, the fact or event that the researcher cannot directly control is examined in depth by focusing on the questions of how and why (Yıldırım & Şimşek, 2018). This study aims to reveal the reflections of parents' groups created for mathematics lessons through instant messaging applications on the parents and how they are evaluated by the parents during the pandemic process.

### **Study Group**

The study group consists of five male and five female participants selected by criterion sampling method. All cases meeting a predetermined set of criteria are studied. The criterion or criteria can be prepared by the researcher or a previously created criteria list can be used (Patton, 2005). The criterion used in the selection of the participants is that the children of the participants go to secondary school and are included in the parent groups created for the mathematics course through instant messaging applications.

### **Data Collection Tools and Data Collection**

The qualitative data obtained in this study were collected with the "semi-structured interview". The semi-structured interview technique is relatively more flexible than the structured interview method. In addition to the certain level of standardization this method provides, it can be seen as more suitable for educational research due to its flexibility (Ekiz, 2003). Thus, it was aimed that the participants would express their opinions independently and without limitations.

A semi-structured interview protocol was prepared by the researchers after the literature review to determine the opinions of the parents participating in the study on the usability of the groups created in instant messaging applications. During the development of the qualitative data collection tool, two separate experts (Psychological Counseling and Guidance specialist, Mathematics Education specialist) were asked to examine the interview form. Also, the appropriateness of the language used in the form was edited according to the views of a Turkish Education field expert. Then, a pilot study was conducted with two participants and the feedback obtained from the semi-structured interview form designed as a measurement tool with the experts was compared. After the edits, its suitability in terms of language was reconsidered and the necessary arrangements were made by taking the opinions of the experts in the field of Turkish Teaching. This phase was used to structure the interview questions and was not presented as a finding. Then, an average of 30-minute interviews were held with the parents voluntarily.

### **Data Analysis**

The data collected as a result of "semi-structured interviews" were analyzed with the "content analysis" method. Content analysis is the process of arranging and interpreting the concepts and relationships that can understandably explain the collected qualitative data within the framework of codes and themes (Yıldırım & Şimşek, 2013). The interviews recorded in the first stage of the analysis process were transferred to an Office program. The diversification method was adopted in the data analysis process. First, the data was coded with open coding and a draft code tree was created. Then the coding made by two independent researchers and the coding made by the researchers who carried out this study were compared and necessary corrections were made by discussing the conflicting coding. According to the Miles and Huberman (1994) formula, the consistency rate between the coders was found to be 84%. In the analysis process, explanations were made by giving a code number (P1, P2, ...) to the participants whose opinions were taken, so that the names were hidden in the semi-structured interview records considering ethical principles. Then, direct quotations were made to convey the views of the participants, the code of the participant was specified, and the interview notes were given in quotation marks. In the last stage, the data were interpreted considering the literature and the quantitative data of the study.

### **Results and Discussion**

The categories obtained as a result of the content analysis categories related to codes, frequencies of these codes and the verbatim quotations from parents about these categories are given below. Also, the participant codes given in the parentheses after the quotations indicate which participant stated the note.

#### **Genders of the Participants in the Groups**

Table 1 shows which parents are included in the groups created with instant messaging applications.

Table 1. Parents in the groups

Group participants	f	Quotations
Only mother	5	“As our teacher is a woman, woman-to-woman communication is easier.” (P2) “I am the only one in the group because my husband is working.” (P6)
Only father	2	“My wife doesn't have a smartphone so only I participate.” (P7) “I don't want anyone else to have my wife's phone number.” (P3)
Both mother and father	3	“We're both in the groups so that if one of us skips a message, the other reads it.” (P8) “Our teacher specifically asked us both to be in the group.” (P5)

Five of the parents who participated in the study stated that there were only mothers in the groups, while two parents stated that only the father was involved. Three of the participants stated that both parents were in the group together. In groups with only mothers, mothers stated that women can communicate better because the teacher is a woman and they are busy because their husbands are working. However, they emphasized that mothers are generally included in the groups and fathers are busy. Only one of the men in the fathers' groups stated that his wife did not have a mobile phone, and the other stated that he did not want others to see his wife's

mobile phone number. In the groups in which both parents were involved, the participants stated that the teacher wanted both the mother and the father to be present and that this was a more appropriate way to follow the child together.

### Instant Messaging Applications Used

The results regarding the applications in which the mathematics teachers of the children of the participants set up the groups are presented in Table 2.

Table 2. Instant messaging applications used

Applications	f	Quotations
WhatsApp	7	"I'm quite happy that I already have the application on my phone, so we didn't need to install a second application." (P4)
Telegram	1	"Although I am glad we are using Telegram after rumours about WhatsApp, I would prefer a native software." (P5)
Bip	2	"Better having a local application, I feel our data is safe." (P1)

Participants mostly use the WhatsApp application (n=7). They stated that the reason is that the WhatsApp application is already so common. Two users stated that they are happy to use the Bip application because it is local, and one user stated that they use the Telegram application, but would prefer to use a local application instead.

### The Most Common Intended Purpose of Groups

The most common intended purpose of groups is given in Table 3 according to the opinions of the participants.

Table 3. The most common intended purpose of groups

Category	Code	f	Quotations
The most common intended purpose of groups	Announcements	8	"Announcements are made about the school or the extra lessons" (P1)
			"Since our teacher is also a classroom teacher, she also makes announcements about the class" (P2)
	Homework checks	6	"The teacher sends the assignments from the group." (P4)
			"We take a picture of our child's homework and send it to the teacher." (P5)
	Course materials	2	"Teacher sends us lesson notes and questions in pdf" (P9)
			"Our teacher shares YouTube URLs of some topics with us" (P3)
	Video URLs	6	"Reminders about the lesson are sent from the group." (P10)
			"URLs are sent to the group before each lesson." (P5)
	Reminders	9	"Sometimes, when EBA (Educational Information Network) is busy, the password is sent from here." (P6)

In the analysis of Table 3, it is understood that the groups mostly use the URLs and passwords of online lessons, announcements, reminders and assignments. Also, it is understood that assignments are made in groups and homework control is carried out in some groups. In very few groups, course materials and video URLs related to the courses were shared.

### Positive Aspects of the Groups

The positive aspects of the groups created for the mathematics lesson are given in Table 4 according to the opinions of the participants.

Table 4. Positive aspects of the groups

Category	Code	f	Quotations
Positive aspects of the groups	Supervision	4	“My child completes his homework because the teacher checks them.” (P3)
			“The math teacher gives feedback on the students who do not attend the classes” (P4)
	Question-solving	4	“My child can send the questions he cannot solve to the group and learn the solution immediately.” (P2)
			“We can also see the math questions other kids send and their solutions.” (P6)
	Fast communication	7	“We can reach the teacher immediately during the day.” (P2)
Being free	5	“It is very good that it is not paid like a phone call or an SMS.” (P8)	
Motivation	3	“Our teacher always motivates our children” (P10)	

According to Table 4, it has been understood that the dominant factor in terms of the positive aspects of the groups is to provide fast communication. Also, it is understood that the applications are free, the mathematics teachers inform the parents of the students who do not attend the lesson, they supervise the students by checking homework and they solve the mathematics questions in groups. Thus, students can both find answers to their questions and see the solutions to the questions asked by other students. Also, it is understood that mathematics teachers use groups for motivating children.

### Negative Aspects

The negative aspects of the groups created for the mathematics lesson are given in Table 5 according to the opinions of the participants.

Table 5. Negative aspects of the groups

Category	Code	f	Quotations
Negative aspects of the groups	Unnecessary conversations	5	“Sometimes there are unnecessary discussions.” (P7)
			“It is unnecessary to discuss personal matters in a group and expose everyone to these messages.” (P3)
	Teacher's loss of interest	2	“Towards the end of the year, our teacher started not responding to messages. I understand they're tired, but if this group was created, they should do their part.” (P4)
	Messages sent late	7	“Announcements in the middle of the night are annoying.” (P5)
Security concerns	4	“It is quite annoying to share personal information in groups” (P6) “I wish that no parent could see my phone number” (P8)	

In the analysis of Table 5, it is understood that the most notable negative aspect of the groups is the late-hour messages. Unnecessary discussions or discussing personal matters in groups are also among the negative aspects. Sharing personal information in groups and that group members can see the phone numbers of other group members also cause security concerns. Some participants stated that towards the end of the year, teachers lost interest in groups.

### Conclusion

In this study, notable results were obtained in the light of the purposes of instant messaging groups in the communication of families with mathematics teachers, the advantages and disadvantages of them and the opinions of parents on this matter. It is seen that usually mothers participate in the class groups created to communicate with the teachers. It can be said that the reason for this situation is that men are not at home due to their workload. This is also consistent with the results of Tuncer (2021). The gender roles in Turkish society are quite different (Dedeoğlu, 2012). It is important that both parents are included in the groups, and it is clear that a

family participation process carried out in this way will also have positive results on students' performance (Mayangsari & Aprianti, 2017). Also, parents and teachers, as two common partners of education, have to work together to carry out the best education.

Another result of the study is about the instant messaging applications used. While the WhatsApp application is mostly used in the classes, Bip and Telegram applications follow. The main reason for this may be the prevalence of these applications (CNN TÜRK, 2021). However, most parents think that it would be safer to use local applications. According to another result of the study, groups are mostly used to send announcements, homework, homework checks, course materials, video URLs, reminders, and online lesson URLs and passwords. Avcı (2020); Balcı and Tezel-Şahin (2018), Duru and Çöğmen (2017), Tuncer (2021), and Wasserman and Zwebner (2017) have also reached consistent results. However, the use of parent groups to send online lesson URLs and passwords, which are not included in these studies, is an understandable situation since the lessons are instructed online during the pandemic.

In the consideration of the results of the study, it is understood that the positive aspects of the parent groups are the supervision of the students, the solving of the mathematics questions in the groups, the ability to communicate quickly with the mathematics teacher, the free applications and the motivation of the students. Balcı and Tezel-Şahin (2016) and Tuncer (2020) also reached similar results. According to another result of the study, the negative aspects of the groups are the unnecessary conversations made in the groups, the loss of interest of the teachers in time, the messages sent late at night and the safety concerns. In the literature review, it is seen that there are studies reaching similar results (Avcı, 2020; Balcı & Tezel-Şahin, 2018; Wahyuni & Febianti, 2019).

## **Recommendations**

This study was carried out with parents who were included in the parent groups created for mathematics lessons and had children at the secondary school level. Comparisons can be made by checking how these practices are conducted in different education levels and different courses. Also, notifying the group rules to everyone after the group is created can prevent unwanted situations. With a family education program, family education and awareness studies can be carried out on how to provide school-teacher-family communication in digital environments and what to pay attention to.

It may also be appropriate to disseminate the solving of math problems in parent groups, and even to set specific time intervals for this. Also, it is important to increase father participation in parent groups. Responsibility should not be left only to mothers. It is also important for teachers to keep their interest in the parent groups they created. It is clear that parent groups are considered positive for parents. Therefore, dissemination of this practice is thought to be important. However, some restrictions should be applied, such as turning off messaging or assuring that only the teacher can send messages after a certain hour.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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## **Benefits of Service-Learning through Community Volunteer Programmes to Pre-University Students**

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**Abstract:** Service-learning in the Malaysia context is a course-based, credit-bearing education experience in which students participate in a structured service learning activity that meets academic and societal demands (Balakrishnan et al., 2022). Service-learning is a method of community engagement that is enriching students and empowering the community. This study discusses the findings of service-learning via volunteerism for the community by pre-university students. The objective of the study is to investigate the effect of service-learning via community volunteer programmes on the students who enrolled in the Critical Analysis of Current Issues course at the pre-university level. A mixed methods approach was used in the research design, whereby participants' responses to their level of comprehension, level of knowledge, level of social responsibility, level of personal development, and level of academic achievement related to their involvement in community volunteer programmes were assessed with a pre- and post-test questionnaire. Document analysis of participants' reflections of their experiences conducting the community volunteer programmes was also conducted. Responses were analysed to identify key themes and subthemes. The findings reveal that the mean for their level of comprehension, personal development, and academic achievement was high for both the pre- and post-test. The mean for their level of comprehension, knowledge, social responsibility, personal development, and academic achievement was higher in the post-test. The mean for their level of knowledge and social responsibility was at a medium level for the pre-test. However, this was at a high level in the post-test. This shows that the participants showed significant improvement in their knowledge and social responsibility from involvement in voluntary programmes. Finally, recommendations for youth empowerment in becoming involved in community volunteer programmes were highlighted.

**Keywords:** Pre-university students, Service-learning, Community volunteering programme

### **Introduction**

Service-learning is a practical and experiential form of education where students learn from being involved in community volunteer work and where the tasks are connected to the topics in a course (Beehr et al., 2010). Service-learning via volunteerism is a method of instruction that combines learning through service for the

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community with an aim to foster civic and social responsibility among students. Through the collaborations and interactions during community engagement, participants' life skills and personal development, such as social skills are developed. Service-learning can be instrumental in instilling the qualities of being proactive and creating the willingness to act on current issues surrounding the pre-university students.

Service-learning is related to Service Learning Malaysia (SULAM) – University for Society, which was introduced by the Malaysian Higher Learning Institutions (HLIs). Experiential learning is the focus of SULAM as SULAM “is part of a university class and a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development” (Department of Higher Education Malaysia, 2019, 84).

Service-learning as a community engagement program was included as part of the Critical Analysis of Current Issues (PNAP0283) course assessment of the ASASIpintar pre-university programme. The course outcomes, which are related to volunteerism, encourage pre-university students to be initiative-taking and act on the current issues surrounding them and be involved in community engagement. The group project on volunteerism was called the Youth-Led Project and forty marks were allocated for the course task and assessment. The marks were distributed into four aspects: overall class project, peer evaluation, individual reflection paper, and group exhibition. Marks were allocated for individual reflection as Osborne and Renick (2006) stressed that learning derives from the reflection that students have done during their volunteering experiences in relation to the course content.

The group project on volunteerism is introduced as part of the Critical Analysis of Current Issues (PNAP0283) course as youths in pre-university programme often have creative change-making ideas. This is due to their earnest passion for a variety of social causes, and they desire to make a difference through their commitment in turning their inspiration into action. As a class, students discussed and chose one of the significant issues of concern currently faced on the college campus, in the surrounding community, or at a state, national or global level. Then, they proposed a project and at least three subtopics for the proposed project. Students then chose to participate in one of the groups which were formed based on subtopics and each group comprised of four to six students. Some projects that were conducted by the students were voluntary work with the Malaysian Federation of the Deaf (MFD), beach cleaning, feeding those in need, and a project with an orphanage.

## **Literature Review**

Students may gain benefits from community volunteer work. Eppler *et al.* (2011) investigated college students' attitudes and motives in a service-learning course where they tutored low-income English Language Learning kindergartners, first-, and second-graders in reading. The researchers explored the benefits for elementary school children. The focus was on the measurement of changes in the college students' motivations for voluntary work and social attitudes, and effects on the kindergartners' reading performance and achievement goals. The findings showed that in comparison with non-service-learning college students, the service-learning students volunteered more hours, had higher gains in esteem and protective motives. Besides that, there was a significant increase in participants' motivation to volunteer for their professional growth.

There was a positive correlation between hours tutored and increases in the kindergartners' reading scores, and the kindergartners showed increases in adaptive achievement goals. Eppler *et al.*'s (2011) findings suggest that benefits of the service-learning project were reciprocal. The researchers concluded that through volunteerism, students may gain confidence as they get the chance to try new activities and get involved in new projects. This may lead to a sense of achievement among the involved students where the students exhibited higher gains in esteem, felt better about themselves and had better coping skills in handling personal issues (Eppler *et al.*, 2011).

However, Beehr *et al.* (2010) highlighted that nonrequired volunteers had stronger commitment to and satisfaction with their university. Not only that, but they also shared stronger internal and weaker external motivations to volunteer compared to required volunteers. The researchers investigated required versus nonrequired volunteerism, internal and external motivations for volunteering, and attitudes of student volunteers towards their university among 273 college students made up of non-volunteers, required volunteers, and nonrequired volunteers.

Although Beehr *et al.*'s (2010) findings showed that nonrequired volunteers were more committed in carrying out voluntary work, Sax *et al.*, (1999) findings proved that although pre-college service participation is

controlled and made compulsory to students, the participation in volunteer service during the undergraduate years resulted in a variety of cognitive and affective outcomes measuring nine years after entering college. Moreover et al., (2013) stressed that individuals who participated in a combination of voluntary and mandatory community-based civic activities as an adolescent are most likely to continue participating in voluntary work. However, the researchers highlighted other factors that positively lead to continued community engagement which include religiosity, sense of belonging in school, achievement, and parents who are actively engaged in civic activities.

In addition, Cheung et al., (2015) findings showed that volunteers' social responsibility has a positive effect on volunteerism six months later, but not a positive effect on social responsibility. These results suggest that the emphasis on social responsibility is crucial to sustain volunteerism. The findings also indicated the need for universities to plan and organize volunteering projects which encourage students' volunteerism and social responsibility.

## **Method**

This study utilized a mixed method research methodology. The instruments used to collect the quantitative data were pre and post-tests, which contained five main questions. The Likert scale range of 1 to 10, with 1 being the least acquired and score 10 as the most acquired, was used in the pre and post-tests. The pre and post-tests had related questions. The questionnaire was adapted from Selvaratnam's (2013) study. The objective was to investigate the effects of service-learning through community engagement on the participants. The pre and post-tests were tabulated through the SPSS software package and the data were analysed descriptively. Document analysis of the students' reflections provided the qualitative data to triangulate the quantitative data. Responses in the reflections were analysed to identify key themes and subthemes.

## **Participants**

The participants of the study were sixty-two students of a pre-university programme at a public university in Malaysia. The participants were aged 18 years. As part of the assessment for the Critical Analysis of Current Issues Course (PNAP0283), the pre-university students conducted a class project named the Youth-Led Project which was related to current issues.

## **Results**

The results of this study discuss the obtained research outcome by first presenting the research respondents' profile followed by the descriptive and inferential research outcome.

### **Respondents' Demographic Profile**

Sixty-two participants participated in this research. Demographic data on gender are presented in Table 1 below.

#### **Sample Profile based on Gender**

The information in Table 1 shows the sample profile based on gender. Out of the overall sixty-two students involved in this research, 18 or 29.0 percent were male students whereas the other 44 or 71.0 percent were female students. This shows that the total of respondents among female students were more than the total of male students in this research.

Table 1. Sample profile based on gender

	Number	Percentage
Male	18	29.0
Female	44	71.0
Total	62	100.0

### Instrument Reliability Test

The Cronbach's alpha reliability results for pre and post-test on the level of comprehension, knowledge, social responsibility, personal development, and academic achievement related to the Community Volunteer Programme among students are displayed in Table 2.

Table 2. Instrument reliability

Variables	Cronbach's Alpha	Number of Items
Level of comprehension		
• Pre-test	0.754	4
• Post-test	0.810	4
Level of knowledge		
• Pre-test	0.767	4
• Post-test	0.862	4
Level of social responsibility		
• Pre-test	0.879	4
• Post-test	0.789	4
Level of personal development		
• Pre-test	0.873	4
• Post-test	0.849	4
Level of academic achievement		
• Pre-test	0.908	3
• Post-test	0.803	3

Table 2 above shows the range of reliability for pre and post-test level of comprehension, knowledge, social responsibility, personal development, and academic achievement related to the Community Volunteer Programme among students is between 0.754 to 0.908. Hence, the above Cronbach's alpha showed that the instrument used has good and acceptable reliability.

### Normality Distribution

The Skewness and Kurtosis statistical test was employed to determine the key relative frequency distribution. Based on the statistical analysis, research variables had normal distribution which obtained a variable test result between  $\pm 2$  standard deviations. The test result demonstrating statistical values of Skewness and Kurtosis is shown in Table 3. Therefore, the data in this result were suitable for further analysis.

Table 3. Normality distribution

	Skewness		Kurtosis	
	Statistics	Std. Error	Statistics	Std. Error
Level of comprehension				
• Pre-test	-.687	.304	.733	.599
• Post-test	.210	.304	-.419	.599
Level of knowledge				
• Pre-test	-.750	.304	1.979	.599
• Post-test	-.211	.304	.248	.599
Level of social responsibility				
• Pre-test	-.328	.304	-.343	.599
• Post-test	-.523	.304	.896	.599
Level of personal development				
• Pre-test	-.989	.304	1.742	.599
• Post-test	-.401	.304	.876	.599
Level of academic achievement				
• Pre-test	-1.093	.304	1.749	.599
• Post-test	-.109	.304	-.855	.599

### Students' Level of Comprehension related to the Community Volunteer Programme

In this section, the level of students' comprehension related to the Community Volunteer Programme was measured in the pre and post-test. The descriptive analysis is shown in Table 4 below.

Table 4. Students' level of comprehension related to community volunteer programme pre and post test

No	-Statement	Pre-test		Post-test	
		Mean	SD	Mean	SD
1	Volunteer	7.85	1.458	8.44	1.002
2	Volunteerism	7.23	1.664	8.19	.989
3	Criteria of volunteerism	6.68	1.836	7.98	1.109
4	Ways to involve in volunteering programmes	7.21	1.549	7.95	1.372
	Overall	7.24	1.238	8.14	.900

(Level: Low = 1.00 – 4.00, Medium = 4.01 – 7.00, High = 7.01 – 10.00)

The results in Table 4 show that the mean range of the level of students' comprehension in the pre-test is between 6.68 to 7.85 which is medium to high level. Overall, the pre-test score for the comprehension level (mean = 7.24, SD = 1.238) among students related to the Community Volunteer Programme is at a high level. The mean range of the level of students' comprehension in the post-test is between 7.95 to 8.44 which is at high level. Overall, this shows that the post-test score for the comprehension level (mean = 8.14, SD = 0.900) among students related to the Community Volunteer Programme is at a high level.

### Students' Level of Knowledge Related to the Community Volunteer Programme

In this section, the level of students' knowledge related to the Community Volunteer Programme was measured in the pre and post-test with four items, respectively. For clearer representation, the descriptive analysis is shown in Table 5 below.

Table 5. Students' level of knowledge related to the community volunteer programme pre and post test

No	Statement	Pre-test		Post-test	
		Mean	SD	Mean	SD
1	Volunteer	7.63	1.571	8.13	1.109
2	Volunteerism	7.06	1.628	7.89	1.161
3	Criteria of volunteerism	6.53	2.030	7.82	1.138
4	Ways to involve in volunteer programmes	6.79	1.757	7.92	1.441
	Overall	7.00	1.346	7.94	1.025

(Level: Low = 1.00 – 4.00, Medium = 4.01 – 7.00, High = 7.01 – 10.00)

The results in Table 5 show the mean range of students' level of knowledge in the pre-test is between 6.53 to 7.63 which is medium to high level. Overall, the score of knowledge level (mean = 7.00, SD = 1.346) for the pre-test among students related to the Community Volunteer Programme is at a medium level. The mean range of the level of students' knowledge in the post-test is between 7.82 to 8.13 which is at a high level. Overall, this shows that the score for the level of knowledge (mean = 7.94, SD = 1.025) among students related to the Community Volunteer Programme in the post-test is at a high level.

### Students' Level of Social Responsibility related to the Community Volunteer Programme

In this section, the level of students' social responsibility related to the Community Volunteer Programme was measured in a pre and post-test with four items, respectively. For clearer representation, the descriptive analysis is shown in Table 6 below.

The results in Table 6 above show the mean range of students' level of social responsibility in the pre-test is between 6.08 to 8.15 which is medium to high level. Overall, the score of social responsibility level (mean = 6.85, SD = 1.730) among students related to the Community Volunteer Programme is at a medium level in the pre-test.

Table 6. Students' level of social responsibility related to the community volunteer programme pre and post test

No	Statement	Pre-test		Post-test	
		Mean	SD	Mean	SD
1	I like to share information related to volunteer programmes.	6.08	2.227	7.23	1.850
2	I will report if there is a need for volunteer programmes.	6.11	2.334	7.23	1.712
3	I can contribute ideas related to volunteer programmes.	7.08	1.721	7.84	1.369
4	I can contribute manpower for volunteer programmes.	8.15	1.716	8.74	1.200
	Overall	6.85	1.730	7.76	1.217

(Level: Low = 1.00 – 4.00, Medium = 4.01 – 7.00, High = 7.01 – 10.00)

The mean range of students' level of social responsibility is between 7.23 to 8.74 which is at a high level in the post-test. Overall, this shows that the score for social responsibility level (mean = 7.76, SD = 1.217) among students related to the Community Volunteer Programme in the post-test is at a high level. The findings which show that the involvement in voluntary work enhanced students' social responsibility are supported by responses from students' reflections as shown in the excerpt below:

*"We can make a difference. I become more aware of the issues around me as I can have a real and valuable positive effect on people, communities, and society in general."*

*"I feel like I am part of the community. Volunteering makes me feel part of something besides my studies, friends, and family."*

#### Students' Level of Personal Development Related to the Community Volunteer Programme

In this section, the level of students' personal development related to the Community Volunteer Programme was measured in a pre and post-test with four items, respectively. For clearer representation, the descriptive analysis is shown in Table 7 below.

Table 7. Students' level of personal development related to the community volunteer programme pre and post-test

No	Statement	Pre-test		Post-test	
		Mean	SD	Mean	SD
1	I am interested in running volunteer programmes.	8.31	1.869	8.69	1.301
2	I always make effort to find information about volunteer programmes.	6.23	2.213	6.94	1.845
3	I can manage volunteer programmes.	6.71	1.876	7.73	1.621
4	I have the interpersonal interaction skills to run volunteer programmes.	7.10	1.897	8.06	1.401
	Overall	7.08	1.675	7.85	1.291

(Level: Low = 1.00 – 4.00, Medium = 4.01 – 7.00, High = 7.01 – 10.00)

The results in Table 7 show the mean range of the level of students' personal development is between 6.23 to 8.31 which is medium to high level. Overall, the score for personal development level (mean = 7.08, SD = 1.675) among students related to the Community Volunteer Programme is at a high level in the pre-test. The mean range of students' level of personal development is between 6.94 to 8.69 which is at medium to high level in the post-test. Overall, this shows that the score for personal development level (mean = 7.85, SD = 1.291) among students related to the Community Volunteer Programme in the post-test is at a high level.

The responses from the students' reflections also showed that the students' interpersonal interaction improved as shown in the extract below:

*“I learn to engage with people that I have never known before and I make some effort to at least make the kid gain something that day. I become more determined to convince the underprivileged people about the importance of education. The involvement in this project encourages me to be an educator one day.”*

The response was shared by a student who conducted a voluntary project, ‘Education for the Underprivileged Children’ which aimed to tutor the Indigenous children. The students planned and conducted activities such as educational games and sports activities. Another student highlighted improvement in her social interaction as shown in the excerpt below:

*“I learn how to communicate effectively with my friends and others. I believe that the opportunity to deal with a lot of people helps me gain more knowledge. I observe my group members’ communication skills, how they choose their words to make people understand them and to avoid hurting people with harsh words, especially when they tried to break the ice with the Indigenous kids who were shy.”*

Besides improving their interaction skills, participants also commented that they learned about leadership and teamwork. One participant highlighted that the leader of her project ‘Education for the Underprivileged Children,’ showed a good example of inspirational leadership where she managed conflicts and miscommunication among group members efficiently. The leader was reported to focus on behaviour and events, and not on individuals’ personalities despite the negative attitudes shown earlier by some of the group members such as consistently coming late for group meetings, and carelessly performing tasks. A reflection from another member for the ‘Education for Underprivileged Children’ project reported that eventually all her group members were committed for the project, as shown in the excerpt below:

*“All of us did our part in the project and I can guarantee that each one of us was grateful for the opportunity given to plan and carry out this project. Although at first there were few members who missed meetings and did not complete their tasks, we managed to resolve the issue.”*

Another student highlighted in her reflection of her voluntary work, ‘Food for the Homeless,’ the experiences that she had gained from the group project as shown in the excerpt below:

*“Through volunteering I can challenge myself by doing something different. I am able to discover my hidden talents and achieve my personal goals.”*

For this project, the group of students cooperated with Dapur Jalanan, a Non-Governmental Organisation (NGO), to prepare and distribute food for the homeless in Kuala Lumpur. Some students shared their gratitude for being given the chance to contribute to people who are in need. The experience made them appreciate their privileged life more.

### **Students’ Level of Academic Achievement Related to the Community Volunteer Programme**

In this section, the level of students’ academic achievement related to the Community Volunteer Programme was measured from a pre and post-test with three items, respectively. For clearer representation, the descriptive analysis is shown in Table 8 below.

Table 8. Students’ level of academic achievement related to community volunteer programme pre and post-test

No	Statement	Pre-test		Post-test	
		Mean	SD	Mean	SD
1	Involvement in volunteer programmes helps my academic achievement.	6.98	2.123	8.13	1.287
2	Involvement in volunteer programmes helps my critical thinking.	7.98	1.860	8.74	1.070
3	Involvement in volunteer programmes helps build persistence and retention related to my academic achievement.	7.85	1.791	8.53	1.170
Overall		7.61	1.774	8.47	.998

(Level: Low = 1.00 – 4.00, Medium = 4.01 – 7.00, High = 7.01 – 10.00)



The results in Table 8 show the mean range of the level of students' academic achievement in the pre-test is between 6.98 to 7.98 which is medium to high level. Overall, the score of students' academic achievement level in the pre-test (mean = 7.61, SD = 1.774) related to the Community Volunteer Programme is at a high level. The mean range of the level of students' academic achievement in the post-test is between 8.13 to 8.74 which is at a high level. Overall, this shows that the score for the academic achievement level (mean = 8.47, SD = 0.998) in the post-test among students related to the Community Volunteer Programme is at a high level.

Interestingly, the reflection from one of the participants showed that the hours spent for the planning and execution of the project did not really affect her commitment for her studies. She elaborated that with effective time management and good teamwork, she could juggle both responsibilities. This is shown in the excerpt below:

*“When we first started, I am worried that I may not be able to focus on my studies as there is so much to be done for the voluntary project. However, my teammates cooperated well, and we managed to divide our time for studies and also the project.”*

### Comparison of Pre and Post-test Score for the Level of Comprehension of the Community Volunteer Programme

Ho1 There is no significant difference between the pre and post-test scores of students' comprehension level of the Community Volunteer Programme

The comparison of the pre and post-test scores for the level of comprehension of the Community Volunteer Programme among students is exhibited in Table 9.

Table 9. Pre and post t-test scores of students' comprehension of the community volunteer programme

	Pre-test		Post-test		T value	Sig. P
	Mean	SD	Mean	SD		
Comprehension level	7.24	1.238	8.14	.900	-6.128	.000

\*\*p<0.01

Based on the results of statistical test data as shown in Table 9, there is a significant difference in score of students' comprehension level towards the Community Volunteer Programme [t = -6.128, p = 0.000], p < 0.01 between pre and post-test. Hence, **Ho1 is rejected**. This result shows that the score of students' comprehension level towards the Community Volunteer Programme in post-test (mean = 8.14, SD = 0.900) is higher than the pre-test (mean = 7.24, SD = 1.238).

### Comparison of Pre and Post-Test Score for the Level of Knowledge towards the Community Volunteer Programme

Ho2 There is no significant difference between the pre and post-test score of students' knowledge level towards the Community Volunteer Programme

The outcome of pre and post-test score comparison for the level of knowledge towards the Community Volunteer Programme among students is exhibited in Table 10.

Table 10. Pre and post t-test score of students' knowledge level towards the community volunteer programme

	Pre-test		Post-test		t value	Sig. P
	Mean	SD	Mean	SD		
Knowledge level	7.00	1.346	7.94	1.025	-5.739	.000

\*\*p<0.01

Based on the result of statistical test data as shown in Table 10, there is a significant difference in the score of students' knowledge level towards the Community Volunteer Programme [t = -5.739, p = 0.000], p < 0.01 between pre and post-test. Hence, **Ho2 is rejected**. This result shows that the score of students' knowledge level towards the Community Volunteer Programme in post-test (mean = 7.94, SD = 1.025) is higher than pre-test (mean = 7.00, SD = 1.346).

### Comparison of Pre and Post-test Scores for the Level of Social Responsibility towards the Community Volunteer Programme

Ho3 There is no significant difference between the pre and post-test scores of students' social responsibility level towards the Community Volunteer Programme

The outcome of pre and post-test scores comparison for the level of social responsibility towards the Community Volunteer Programme among students is exhibited in Table 11.

Table 11. Pre and post t-test scores of students' social responsibility level towards the community volunteer programme

	Pre-test		Post-test		t value	Sig. P
	Mean	SD	Mean	SD		
Level of social responsibility	6.85	1.730	7.76	1.217	-5.126	.000

\*\*p<0.01

Based on the results of statistical test data as shown in Table 11, there is a significant difference in score of students' social responsibility level towards the Community Volunteer Programme [t = -5.126, p = 0.000], p < 0.01 between pre and post-test. Hence, **Ho3 is rejected**. This result shows that the score of students' social responsibility level towards Community Volunteer Programme in post-test (mean = 7.76, SD = 1.217) is higher than pre-test (mean = 6.85, SD = 1.730). This is supported by the analysis of the participants' reflections, as one of them reported that she had managed to **make a difference** from the real and valuable positive effect on people, communities, and society in general. This is shown in the excerpt from her reflection below:

*"I realise that I am responsible not just for my life. I must contribute to the community and society."*

### Comparison of Pre and Post-test Scores for the Level of Personal Development towards the Community Volunteer Programme

Ho4 There is no significant difference between the pre and post-test score of students' personal development level towards the Community Volunteer Programme

The outcome of pre and post-test score comparison for the level of personal development towards the Community Volunteer Programme among students is exhibited in Table 12.

Table 12. Pre and post t-test score of students' personal development level towards the community volunteer programme

	Pre-test		Post-test		T value	Sig. P
	Mean	SD	Mean	SD		
Level of personal development	7.08	1.675	7.85	1.291	-5.117	.000

\*\*p<0.01

Based on the result of statistical test data as shown in Table 12, there is a significant difference in score of students' personal development level towards the Community Volunteer Programme [t = -5.117, p = 0.000], p < 0.01 between pre and post-test. Hence, **Ho4 is rejected**. This result shows that the score of students' personal development level towards the Community Volunteer Programme in post-test (mean = 7.85, SD = 1.291) is higher than pre-test (mean = 7.08, SD = 1.675). Data from the participants' reflections supported this as shown in the excerpt below:

*"I realized that the small things that we do, can bring greater effect in someone's life. Throughout this project I have changed to be a better person and my soft skills have improved. This project makes us believe in the quote, 'Living is giving.'"*

Another excerpt from the students' reflections supported this:

*"I feel I have more worth. Doing something for other people make me always remind myself that I can optimize my energy and I have to do something that bring good things for this universe."*

### Comparison of Pre and Post-test Scores for the Level of Academic Achievement towards the Community Volunteer Programme

Ho5 There is no significant difference between the pre and post-test scores of students' academic achievement level towards the Community Volunteer Programme

The outcome of pre and post-test scores comparison for the level of academic achievement towards the Community Volunteer Programme among students is exhibited in Table 13.

Table 13. Pre and post t-test scores of students' academic achievement level towards the community volunteer programme

	Pre-test		Post-test		T value	Sig. P
	Mean	SD	Mean	SD		
Level of academic achievement	7.61	1.774	8.47	.998	-4.302	.000

\*\*p<0.01

Based on the results of statistical test data as shown in Table 13, there is a significant difference in score of students' academic achievement level towards the Community Volunteer Programme [ $t = -4.302$ ,  $p = 0.000$ ],  $p < 0.01$  between pre and post-test. Hence, **Ho5 is rejected**. This result shows that the score of students' academic achievement level towards the Community Volunteer Programme in post-test (mean = 8.47, SD = 0.998) is higher than pre-test (mean = 7.61, SD = 1.774). An analysis of the students' responses in their reflections support the finding that involvement in voluntary work does not necessarily affect academic performance as shown in the following excerpt:

*"I become better at time management as I know that I have to complete assignments, course work and at the same time executing the activities for the voluntary work. I do not see my studies is affected."*

### Pre and Post Test Score Difference of Comprehension Level between Male and Female Students

Ho6 There is no significant difference between pre-test score of comprehension level towards the Community Volunteer Programme between male and female students

Ho7 There is no significant difference between post-test score of comprehension level towards the Community Volunteer Programme between male and female students

The t-test outcome to assess pre and post-test score difference of comprehension level towards the Community Volunteer Programme between male and female students is displayed in Table 14.

Table 14. Pre and post t-test score difference of comprehension level towards the community volunteer programme between male and female students

Comprehension Level	Gender	N	Mean	SD	t Value	Sig. P
Pre-test	Male	18	6.64	1.412	-2.563	.013
	Female	44	7.49	1.082		
Post-test	Male	18	7.85	.888	-1.668	.101
	Female	44	8.26	.888		

\*\*p<0.01

The result from t-test analysis as shown in Table 14 found that there is a significant difference in pre-test comprehension level towards the Community Volunteer Programme [ $t = -2.563$ ,  $p = 0.013$ ],  $p < 0.05$  between male and female students. Therefore, **Ho6 is rejected**. This outcome shows pre- test comprehension level among female students (mean = 7.49, SD = 1.082) is higher than male students (mean = 6.64, SD = 1.412).

However, in Table 14, it was found that there is no significant difference in post-test comprehension level towards the Community Volunteer Programme [ $t = -1.668$ ,  $p = 0.101$ ],  $p > 0.05$  among male and female students. Hence, **Ho7 is accepted**. This means that there is no difference in post-test comprehension level among male and female students.

### Pre and Post Test Score Difference of Knowledge Level between Male and Female Students

Ho8 There is no significant difference between pre-test score of knowledge level towards the Community Volunteer Programme between male and female students

Ho9 There is no significant difference between post-test score of knowledge level towards the Community Volunteer Programme between male and female students

The t-test outcome to assess pre and post-test score difference of knowledge level towards the Community Volunteer Programme between male and female students is displayed in Table 15.

Table 15. Pre and post t-test score difference of knowledge level towards community volunteer programme between male and female students

Knowledge Level	Gender	N	Mean	SD	t Value	Sig. P
Pre-test	Male	18	6.54	1.466	-1.759	.084
	Female	44	7.19	1.263		
Post-test	Male	18	7.60	.982	-1.708	.093
	Female	44	8.08	1.020		

\*\*p<0.01

The result from t-test analysis as shown in Table 15 shows that there is no significant difference in pre-test knowledge level towards the Community Volunteer Programme [t = -1.759, p = 0.084], p > 0.05 between male and female students. Therefore, **Ho8 is accepted**. This means that there is no difference in the pre-test knowledge level among male and female students.

Similarly in Table 15, it was found that there is no significant difference in post-test knowledge level towards the Community Volunteer Programme [t = -1.708, p = 0.093], p > 0.05 among male and female students. Hence, **Ho9 is accepted**. This means that there is no difference in post-test knowledge level among male and female students.

### Pre and Post Test Score Difference of Social Responsibility Level between Male and Female Students

Ho10 There is no significant difference between pre-test score of social responsibility level towards the Community Volunteer Programme between male and female students

Ho11 There is no significant difference between post-test score of social responsibility level towards the Community Volunteer Programme between male and female students

The t-test outcome to assess pre and post-test score difference of social responsibility level towards the Community Volunteer Programme between male and female students is displayed in Table 16.

Table 16. Pre and post t-test score difference of social responsibility level towards the community volunteer programme between male and female students

Social Responsibility Level	Gender	N	Mean	SD	t Value	Sig. P
Pre-test	Male	18	6.28	1.843	-1.706	.093
	Female	44	7.09	1.645		
Post-test	Male	18	7.29	1.448	-1.975	.053
	Female	44	7.95	1.070		

\*\*p<0.01

The result from t-test analysis as shown in Table 16 shows that there is no significant difference in pre-test social responsibility level towards the Community Volunteer Programme [t = -1.706, p = 0.093], p > 0.05 between male and female students. Therefore, **Ho10 is accepted**. This means that there is no difference in the pre-test social responsibility level among male and female students. Similarly in Table 16, it was found that there is no significant difference in post-test social responsibility level towards Community Volunteer Programme [t = -1.975, p = 0.053], p > 0.05 among male and female students. Hence, **Ho11 is accepted**. This means that there is no difference in post-test social responsibility level among male and female students.

### Pre and Post-test Score Difference of Personal Development Level between Male and Female Students

Ho12 There is no significant difference between pre-test score of personal development level towards the Community Volunteer Programme between male and female students

Ho13 There is no significant difference between post-test score of personal development level towards the Community Volunteer Programme between male and female students

The t-test outcome to assess pre and post-test score difference of personal development level towards the Community Volunteer Programme between male and female students is displayed in Table 17.

Table 17. Pre and post t-test score difference of personal development level towards the community volunteer programme between male and female students

Personal Development Level	Gender	N	Mean	SD	t Value	Sig. P
Pre-test	Male	18	6.13	1.766	-3.079	.003
	Female	44	7.48	1.485		
Post-test	Male	18	7.08	1.419	-3.234	.002
	Female	44	8.17	1.103		

\*\*p<0.01

The result from t-test analysis as shown in Table 18 found that there is a significant difference in pre-test personal development level towards Community Volunteer Programme [ $t = -1.706$ ,  $p = 0.093$ ],  $p > 0.05$  between male and female students. Therefore, **Ho12 is rejected**. This outcome shows pre-test personal development level among female students (mean = 7.48, SD = 1.485) is higher than male students (mean = 6.13, SD = 1.766).

Similarly in Table 17, it is shown that there is a significant difference in post-test personal development level towards the Community Volunteer Programme [ $t = -3.234$ ,  $p = 0.002$ ],  $p < 0.01$  among male and female students. Hence, **Ho13 is rejected**. This outcome shows post-test personal development level among female students (mean = 8.17, SD = 1.103) is higher than male students (mean = 7.08, SD = 1.419).

### Pre and Post-test Score Difference of Academic Achievement Level between Male and Female Students

Ho14 There is no significant difference between pre-test score of academic achievement level towards the Community Volunteer Programme between male and female students

Ho15 There is no significant difference between post-test score of academic achievement level towards the Community Volunteer Programme between male and female students

The t-test outcome to assess pre and post-test score difference of academic achievement level towards the Community Volunteer Programme between male and female students is displayed in Table 18.

Table 18. Pre and post t-test score difference of academic achievement level towards the community volunteer programme between male and female students

Academic Achievement Level	Gender	N	Mean	SD	t Value	Sig. P
Pre-test	Male	18	6.93	1.762	-1.981	.052
	Female	44	7.89	1.721		
Post-test	Male	18	8.19	.972	-1.438	.156
	Female	44	8.58	.996		

\*\*p<0.01

The result from t-test analysis as shown in Table 18 shows that there is no significant difference in pre-test academic achievement level towards the Community Volunteer Programme [ $t = -1.981$ ,  $p = 0.052$ ],  $p > 0.05$  between male and female students. Therefore, **Ho14 is accepted**. This means that there is no difference in pre-test academic achievement level among male and female students.

Similarly in Table 18, it was found that there is no significant difference in post-test academic achievement level towards the Community Volunteer Programme [ $t = -1.438$ ,  $p = 0.156$ ],  $p > 0.05$  among male and female

students. Hence, **Ho15 is accepted**. This means that there is no difference in post-test academic achievement level among male and female students.

## **Discussion**

The present study was designed to investigate the effects of service-learning through community volunteer programme on the participants. The findings showed pre-university students benefit from service-learning through community engagement. This is consistent with Bromnick et al., findings (2012) where students clearly gained benefit from both voluntary work and the reflection on their experiences.

The present study's findings demonstrating students' higher scores for post-test comprehension and knowledge level prove that the students are more aware of voluntarism, criteria of voluntarism and ways to involve in voluntary work. The students found ways they could contribute to the betterment of society, and they learned that their actions have a broader impact on society. This finding supports Gray's (2010) previous research which highlighted that being involved in voluntary work helps students realise they could make a difference in society. However, further research may need to be conducted to understand if such level of knowledge is applied in their real-lives.

This result shows that the score of students' personal development level towards the Community Volunteer Programme in post-test is higher than pre-test. This supports previous research (Gray, 2010) which showed that voluntary work had a positive effect on character and personal development and helped developed individuals' skills. Through engagement in voluntary work, students acquire important abilities and dispositions through the identification, planning and implementation of the action. As shown in this study's findings, the pre-university students developed important skills, including problem solving, conflict resolution and empathy. This corroborated the findings of Mária Jármai and Palányi's (2015) which showed that voluntary work has several advantages which positively influences the development of an individuals' personality. Since soft-skills are greatly needed in study and working life, this sort of experiential pedagogy should be encouraged and implemented at all levels of learning.

The findings in this study demonstrated that with good cooperation, voluntary group work enhances the sense of personal and collective efficacy. Through resolution of conflicts, students learned that there are responsible ways to address issues, and that everyone can play a role in social change. This is consistent with the observations of O'Dell et al., (2016) that voluntary work promotes individual growth which is likely to inspire long-term participation in social change activities. Conflict resolution and problem solving are life-long skills needed for students to ensure that in any situation, they can systematically organise their thoughts and solve an issue.

It is also shown in this study that the post-test personal development level among female students is higher than male students. This is consistent with the findings of Darawsheh et al., (2020) which highlighted that female students manifest a more positive attitude and more dedication in carrying out voluntary work. Further research can be conducted to validate the qualitative reasoning of female students developing better than their male counterparts.

The result in this study evidenced the score of students' academic achievement level towards Community Volunteer Programme is higher in the post-test. This finding is in agreement with Selvaratnam's (2013) findings which found that there was an increment in the level of academic performance in post-test when students involved in volunteerism. The participants' level of academic achievement showed the highest mean and that could imply involvement in voluntary work did not negatively affect academic performance.

## **Conclusion**

Pre-university students aged 17 to 18 years old normally possess creative change-making ideas as they have heartfelt passion for a variety of social causes, and they want to make a difference. The inclusion of the volunteering project in the Critical Analysis of Current Issues course of the ASASIPintar UKM Program is to help the students gain a sense of empowerment as they engage in projects designed to result in change of attitude, information sharing and involvement in an important social cause. Voluntary work may be linked with individual benefits. Involvement in Community Projects (Magoon, 1980, as cited in Educational Services Division, 2007) could help develop leadership in students. Volunteering can help students gain confidence by

giving them the chance to try something new and build a real sense of achievement. Moreover, student engagement in voluntary work may help students enhance their employability (Bromnick et al., 2012; Paine, 2014).

## **Recommendations**

Youths are often an untapped source for creative change-making ideas. They normally are passionate about social issues, and they want to contribute to the society. Thus, educational administrators must support them at every step of the process by promoting volunteer work among the youth. Administrators and lecturers can help the students gain a sense of empowerment as they engage in projects planned. Below are the actions that could be taken by administrators and lecturers to assist students in accomplishing their voluntary programs:

- 1) assist students with the formal correspondence with relevant authorities
- 2) include voluntary work as part of course assessment as this motivates students to do their best to secure satisfactory results.

Although this may seem like “forcing” them to commit to voluntary work, findings from previous research (Domaradzki & Walkowiak, 2021; Selvaratnam, 2013) have shown that involvement in voluntary work instills social responsibility among students. This may eventually make them volunteer on their own. Students instilled with voluntary work through service learning would have been equipped with knowledge, skills, and values that will enable them to adapt, adjust and initiate service learning within their own capability. The deep learning and ripple effect involved would transform every student into a better human being.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

## **Acknowledgements or Notes**

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## The Biggest Winners and Losers of the Coronavirus Crisis Based on European Macroeconomic Data

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**Abstract:** The 21st century has brought significant changes for economic operators, not only from a technological point of view. Some of these changes have been positive, while others have created major challenges or problems that have had to be adapted to very quickly. The COVID-19 pandemic or the Russian-Ukrainian conflict have triggered a clear crisis process in many countries and businesses. However, it is assumed that crises do not affect everyone in the same way. This study aims to examine the impact of these two events on certain European countries. To this end, five macroeconomic indicators have been selected and their changes before and after the crises are examined. The study seeks to answer the question of how the crisis events have affected the basic macroeconomic indicators of the countries and whether it can be said that the crisis has left everyone worse off. Are some countries more resilient to the current adverse trends? We base our analysis not only on macroeconomic indicators, but also review the evolution of the IMD competitiveness indicator as a confirmation. The macroeconomic indicators and the competitiveness report will show how the macroeconomic and competitiveness situation of each country has changed following the outbreak of the COVID-19 pandemic, which was also significantly affected by the Russian-Ukrainian conflict. By reviewing this period, it will become clear to what extent the countries under study were affected by the events and it will be possible to identify which countries can be considered the biggest losers.

**Keywords:** COVID-19 pandemic, Russian-Ukrainian conflict, crisis, competitiveness

### Introduction

The study was designed to examine the impact of the COVID-19 crisis on economic indicators. It is hard to argue that the crisis has had some form of impact on all countries. It is in the nature of crises that a good period can be followed by a bad period in the life of an economic agent, very often referred to as a crisis or recession. The word crisis conveys a negative connotation. Everyone thinks of downturns, poor results or negative effects, but in reality it is far from certain that a crisis always has negative consequences. In order to prove this, it is necessary to examine the question of whether crises have actually caused a setback for everyone or whether they have caused the opposite. There is a strong presumption that some countries' economic indicators even improved after the crisis and the focus of this study is now on GDP as a measure of economic growth. However, economic growth cannot be the only measure to prove this assumption. More complex, multidimensional indicators need to be looked at, so that in addition to economic growth, changes in competitiveness can also provide evidence. Two basic assumptions have been made in writing this paper.

- H1: There is a strong assumption that there were countries after and during the crisis that did not suffer a significant decline in GDP and even an increase in GDP during the crisis. There are significantly fewer of these countries, so that for the majority of them COVID-19 has indeed had a negative impact on GDP.

- H2: There is a strong presumption that the claim that the crisis necessarily has a negative impact on everyone is not true. There are some countries whose international competitiveness has been strengthened even under the impact of COVID-19, so that they have been able to maintain their competitive position during the crisis. It can also be assumed that countries can be grouped into different categories in terms of whether they are winners or losers from the crisis. The grouping is based on which countries have experienced positive changes in GDP and competitiveness, and which countries have experienced a deterioration in these indicators.

Simple macroeconomic data were used for the hypotheses. Before examining the hypotheses, we clarify the concept of national competitiveness and the nature and significance of crises. It is also important to distinguish between the onset and course of crises and recessions, as the two concepts are not the same. The first part of this paper deals with this. In the second part, we will look at the results of statistical or research organisations that can provide real evidence that the hypotheses are or are not correct.

## **Results and Discussion**

### **Theory of the National Competitiveness – Why not GDP?**

The competitiveness of the national economy is one of the most important conditions for development and progress. By this, we mean the ability of a nation to create a social and economic environment in which its actors are best able to create value added that is recognised on the world market. The maintenance of prosperity becomes the driving force of competitiveness in the national economy, prosperity is not the basis of competitiveness, but its goal. Competitiveness in the national economy is crucially a competition of skills, and in particular economic skills. At the same time, this definition does not ignore the social aspects of competitiveness, as factors that are not directly related to market value creation but nevertheless affect a country's performance must also be taken into account (Chikán, 2006). Competitiveness is the balance of advantages and disadvantages that a country can achieve by selling its own products on international markets. (OECD, 1992) Another OECD formulation is that competitiveness is a measure of a country's ability to produce goods and services that can be sold on international markets under free market conditions, while maintaining and raising the living standards of its population in the long run (OECD, 1992). The competitiveness of a nation is a measure of its ability to produce goods and services that are (also) sellable on world markets under perfectly competitive conditions, while increasing the real income of its citizens (Rapkin, 1995). A country is not competitive if its actors are highly productive and operate at low cost, but cannot provide jobs for its population. According to Porter (2003), the standard of living of a nation is determined by the productivity of its economy, which measures how much goods and services a country has produced using a unit of human, financial and natural resources. Productivity is what allows a nation to support high wages, a strong currency and ensure a return on capital, and hence a high standard of living. Competitiveness is an indicator of national economic performance that expresses how efficiently a nation utilises the human, financial and natural capital at its disposal (Porter, 1990, 1993). Krugman (2003) relates competitiveness to participation in international trade. In his view, trade between two countries normally increases the income of both countries. According to Jeffrey Sachs, the competitiveness of one country is the lack of competitiveness of another country. According to the European Commission (2012), the competitiveness of a country is a guarantee of the well-being of its citizens. Competitiveness in the national economy means growth in output, high employment and a sustainable environment, and one of its key elements is adaptability, which also increases resilience to shocks. The objective is to increase competitiveness, for which there is no single EU definition. According to the Commission's 2003 definition, competitiveness is the ability to raise the standard of living of the population and to improve employment, while taking into account sustainability criteria. One of the main foundations of EU competitiveness is the so-called "competitiveness pillar". The White Paper was one of the key factors in establishing competitiveness. The Delors report states that increasing competitiveness is not an end in itself, but a means to increase prosperity and living standards. This goal can only be achieved with an adequate level of employment, and therefore an economy is considered competitive if it can create a sufficient number of jobs while maintaining high economic growth. As can be seen from the above interpretations, economic growth and competitiveness are linked at several points. It can also be said that competitiveness is almost the basis of economic growth, since improved economic outcomes may require a strengthening of competitiveness. If one's competitiveness deteriorates, one will, after a while, no longer have the skills to ensure that one can remain competitive. The logical consequence of this is a decline in indicators, a drop in productivity or a negative change in financial indicators. Yet economic analyses tend to focus on GDP. GDP is the total value of goods and services produced for final consumption in a given country, whether produced domestically or by a foreign operator. The above interpretations of competitiveness have repeatedly shown that it is not enough to think in

terms of GDP alone, as it is equally important to look at changes in quality of life indicators. The latter is also affected by the crisis, not only in terms of GDP. Following this logic, it is therefore important to examine the impact of the COVID-19 crisis on economic indicators, but it is equally important to show the impact on competitiveness or quality of life indicators. One thing is certain. The crisis is still having an impact and there is hardly any economic operator who has not suffered some positive or negative consequences. The question is whether or not this can be identified in the same way for countries. The following outlook will explain this.

### **The Difference between Crisis and Recession**

The concept and meaning of crisis for the organisation has changed significantly in recent decades. In the early 1990s, crisis was still understood as the inadequate response of the organisation to the situation. A crisis situation was defined as a situation in the life of an organisation in which the balance of the organisation was upset and a kind of temporary disorder arose, requiring immediate and urgent intervention by management. As time went by, it became increasingly important to look at the environmental factors and to identify the main causes of the crisis in terms of the extent to which the environment could be observed and adapted to. Increasingly, the crisis was seen as an inadequate response to environmental change. It was interpreted as a mismatch between the organisation and the environment, as previous solutions, which had worked well in the past, no longer served the organisation's objectives. It became apparent that existing management techniques do not always help the organisation, so in addition to product and technological innovations, the use of leadership, organisational and management innovations became increasingly important. This has not only required a transformation of decision-making mechanisms or procedural rules, but in many cases the crisis has also led to a restructuring of the entire organisation, forcing those involved to renew part or all of the organisational processes. This has now led to a situation where crises have become almost closely associated with innovation, modernisation, revitalisation and opportunity. According to modern approaches, there is no difference between a crisis situation and a situation of opportunity. For modern organisations, dealing with a crisis is not an emergency, a panic, a 'necessary evil', but an opportunity to develop, to transform, to renew. Crisis is also an opportunity, a chance for renewal. Crisis is a regular event in the life of organisations, which affects everyone and can affect everyone. The only difference is that some organisations can manage it well or even prevent its effects, while others suffer the consequences, put out fires or, in the worst case, are forced to cease their activities. Crisis management is also a form of change management, but the stakes are much higher for the organisation to remain a player in the business world. A recession is when an economy experiences a few months of GDP contraction, a crisis is when, after such a contraction, GDP falls by a few for a few years or stagnation. It is also common to talk about stagflation and depression. The latter refers to a recession that is persistent or severe and causes significant social damage. A recession is a decline in economic activity associated with a fall in output at the national economy level. GDP does not necessarily have to go negative to be a recession, a significant and sustained slowdown is sufficient. Whichever the case, such crises always have a negative impact on the living standards of a wide section of society, and cases such as stagflation can only exacerbate this. Stagflation refers to a high inflation rate in a context of stagnation. Stagnation, i.e. a slowdown or stagnation of economic growth, and inflation are negative because, when a crisis develops, the inflationary effect further erodes the value of people's real income, which can lead to an increase in poverty. Arthur Okun expressed this relationship in terms of a simple indicator called the Misery, or poverty index. The Misery index is the sum of two simple macroeconomic indicators, the unemployment rate and the inflation rate. The higher the value of the index, the more unfavourable the degree of poverty in society. A crisis means a slowdown in economic growth, when consumption usually falls and the unemployment rate is unfavourable. The purchasing power of money falls, as reflected in inflation. In such a situation, economic agents can buy less real goods for each unit of income, and their needs are therefore met at a lower level. All this leads to lower satisfaction, lower living standards, i.e. increasing social impoverishment. However, the common feature of organisational and economic crises is clear. They always affect the broadest range of people, so they usually affect many people.

### **Winners or Losers? Which One are You?**

In 2011, the Washington Post published a study that looked at who was worst off after the crisis. Five things were examined in this. Inflation, national debt, changes in GDP, unemployment and budget deficit. These numbers were added up and those with the most negative change were the biggest losers. After the covid epidemic, this became relevant again. Even today, the question is who are the biggest losers of the epidemic. Three groups were formed. The indicators of the winners changed positively. In the indifferent group, the indicators did not change significantly, while in the losers group, these indicators dropped significantly. At the same time, not only the macroeconomic parameters have changed, but also competitiveness. Competitiveness

was also significantly transformed by COVID, we also examined these from the competitiveness reports. The 2001 survey is a good illustration of the issues we raised in the first hypothesis. The authors examined five economic parameters to detect the differential impact of crises. They found that some countries even improved their indicators after the crisis. We wanted to see for ourselves how this is evolving. First, we present statistics from the Economist, which show that there was a wide variation in GDP trends across OECD countries. Some countries, such as Ireland or China, have seen significant GDP growth, while countries such as Spain or Portugal are among the big losers in the crisis, according to the Economist.

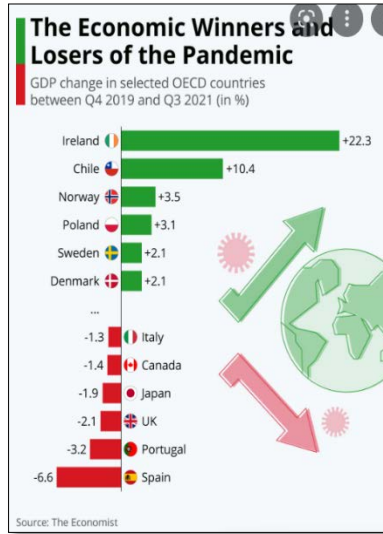


Figure 1. The economic winners and losers of the pandemic. GDP change in selected OECD countries between Q4 2019 and Q3 2021 (in percent) - Source: Economist

(Ranking out of 23 <sup>†</sup> )	GDP	Household income per person	Share prices <sup>‡</sup>	Investment	Public debt to GDP <sup>§</sup>
Denmark (1)	2.1	3.4	57.3	12.1	3.5
Slovenia (2)	1.2	10.1	33.0	6.8	7.4
Sweden (3)	2.1	2.0	50.4	5.6	6.2
Norway (4)	3.5	4.0	31.3	-8.5	-9.0
Chile (5)	10.4	32.7	-5.6	6.7	11.9
Ireland (=6)	22.3	4.8	17.1	-78.8	0.9
Poland (=6)	3.1	3.3	25.4	-7.1	5.0
Netherlands (8)	1.7	1.7	30.8	-4.3	5.6
United States (9)	1.4	6.2	24.4	3.6	18.9
Australia (=10)	-0.2	3.5	9.1	7.4	10.2
Canada (=10)	-1.4	9.4	25.9	0.7	11.6
Finland (12)	1.5	-0.8	31.3	-1.3	9.7
Hungary (13)	0.6	0.1	16.9	4.2	11.1
Greece (14)	1.2	1.5	1.1	19.0	21.8
France (=15)	-0.1	0.7	17.4	1.3	14.4
Italy (=15)	-1.3	-0.2	18.5	6.9	20.1
Belgium (=17)	0.5	1.1	2.2	2.4	14.5
Portugal (=17)	-3.2	-0.3	27.1	0.5	12.0
Austria (19)	1.1	-5.8	18.6	-1.1	14.0
Germany (20)	-1.1	-0.9	15.6	-1.9	13.6
Japan (21)	-1.9	1.0	17.4	-3.8	20.7
Britain (22)	-2.1	-2.3	-2.2	-7.4	21.9
Spain (23)	-6.6	-6.3	-7.2	-6.5	22.3

\*Compares Q3 2021, or latest available data, with Q4 2019. Share-price data are monthly figures. <sup>†</sup>Average score of five indicators: changes in real GDP, real household income per person, share prices, gross fixed capital formation, net public debt to GDP.  
<sup>‡</sup>National all-share or broad index. <sup>§</sup>Percentage points. Uses gross data for Greece.  
 Sources: OECD; IMF; World Bank; national statistics; The Economist

Figure 2. League table of nations . selected OECD countries, % change during the COVID-19 pandemic - Source: OECD Statistics

We get a much more nuanced picture when we look behind the scenes. Macroeconomic performance is not solely dependent on changes in GDP. In addition to GDP, we also need to look at factors such as household income and consumption, or the evolution of investment in a country. In relation to hypothesis H1, it is also strongly suggested that the propensity to invest has also evolved very differently across countries. It is also very interesting to see that although there were some countries where GDP increased following the COVID-19 crisis,

it is very interesting to see that even in countries with increasing GDP, investment rates did not increase in all cases. The example of Ireland illustrates this well, as although it has shown a significant increase in GDP, it is clear that it is not the increase in the investment rate that explains the better economic performance. In this respect, Ireland is a curious exception. This is interesting because, in principle, if the GDP of a country has increased as a result of the COVID-19 crisis, the volume of investment in that country has not typically moved into negative territory. Such countries include, for example, the Nordic countries, but the biggest winner in this respect is also China, where the volume of investment has also risen, not just the total value of goods and services for final consumption.

The covid crisis has changed the situation of countries. It didn't have the same effect on everyone. There were countries that did not suffer much damage as a result of the crisis, while there were groups of countries where the declines were significant. We examined this in relation to OECD and EU countries. Poland, for example, was a big loser from the epidemic, which suffered a significant drop in competitiveness in Europe. At the same time, there were countries that were able to stably maintain their competitive position. Among these we can find, for example, the Czech Republic. Hungary did not fall significantly in the competitiveness rankings, but at the same time, our macroeconomic results fell significantly. All this can be said in relation to several countries, since macroeconomic indicators have basically deteriorated in most countries. Competitiveness has already been discussed in the literature section. It is much more than simply producing or supplying something and intending it for final use. The above findings on competitiveness are supported by the Swiss-based competitiveness research organisations. The Institute for Management and Development (IMD) and the World Economic Forum (WEF) publish annual competitiveness studies. These clearly show what was already reported in the Washington Post in 2011. The international organisations also provide data to show that changes in national competitiveness have not taken the same form across countries. There were some countries that were able to strengthen their position in the international competitiveness rankings even after the COVID-19 outbreak. However, one thing needs to be mentioned and corrected here. Achieving competitiveness requires economic actors to make targeted investments and investments. The expected impact of an investment can be felt years later, so it is also possible that countries that have shown competitiveness gains under COVID may still be reaping the benefits of their actions a few years ago. If we were to look at international competitiveness rankings, say five years after COVID, we might not get the same results. As a follow-up to this study and to our research, we will have this opportunity and it will be worth looking at macroeconomic indicators and international competitiveness rankings a few years later.

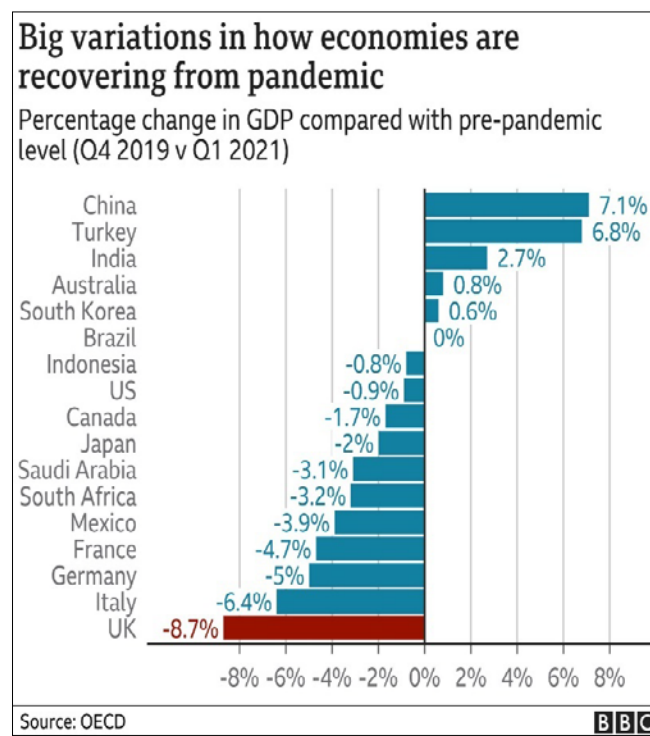


Figure 3. Big variations in how economies are recovering from pandemic - Source: OECD Statistics

In the 21st century the competitive national economy can only be improved by establishing the conditions of the knowledge-based (innovative) economy. Knowledge and human capital has a leading role in that process. This is why strengthening competitiveness requires the investments into knowledge, thus we need to spend more on education (sciences), innovation, research and development, like many countries do (for example the Scandinavian countries). We can come to the conclusion when examining competitiveness that there will always be economic participants, who are forced to face a decline for some reason. The aim of these lesser developed participants is to catch up, but in order to do so they have to be able to answer the questions of what to compete with and how to gain a competitive edge on the global and local markets. The covid crisis fundamentally affected the economic situation of the countries. Macroeconomic indicators were adversely affected in most countries. However, they show a more varied picture in terms of competitiveness. Several countries were able to strengthen their competitiveness or manage to keep it stable. At the same time, there were countries that were at a significant competitive disadvantage. Poland is the best example of how to turn a competitive country into a less competitive one. It is also a general finding that the winners during the crisis were those who were innovative. In addition, it is important that the country is prepared, has reserves and knows how to prepare for crises. The following table also provides evidence that some countries are able to stay below the pre-crisis level of COVID-19. This raises questions about how to recover quickly from the crisis and get back on the growth path. The answer is quite clear. It is not a question of waiting for a miracle from subsidies and EU transfers, but of focusing on competitiveness. If competitiveness could be kick-started and strengthened everywhere, it could bring with it positive spin-offs such as the acquisition of markets or an increase in turnover. This study was not intended to address such issues. The only objective we had in mind was to see the range of countries that have actually been able to get through the period so far with minimal losses. Of course, in time, the situation there may change and a negative process may start.

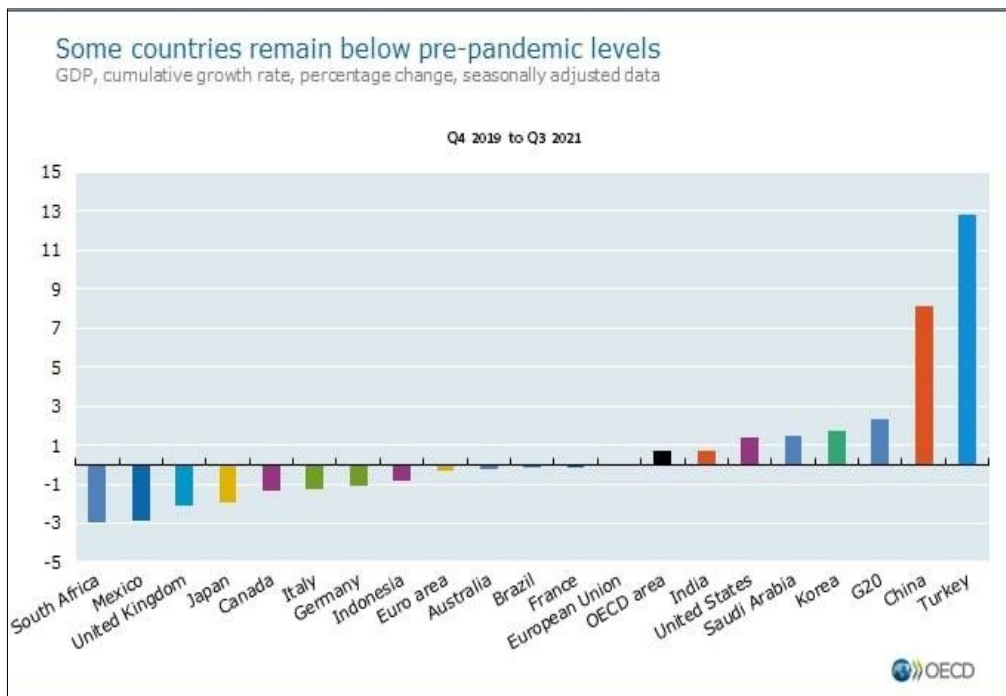


Figure 4. Some countries remain below pre-pandemic levels - Source: OECD Statistics

## Conclusion

The basic aim of this study was to test two of our hypotheses. Testing these two hypotheses required statistical insight on our part. In addition to basic macroeconomic statistics, we reviewed the two following reports on competitiveness:

IMD: World Competitiveness Yearbook  
 WEF: Global Competitiveness Report

In addition to these two competitiveness papers, we also used the Economist and OECD papers and reports. As a reminder, the first hypothesis was the following:

H1: There is a strong presumption that after and during the crisis, there were countries that did not suffer a significant decline in GDP and even an increase in GDP during the crisis. There are significantly fewer of these countries, so that for the majority of them COVID-19 has indeed had a negative impact on GDP.

This hypothesis can be regarded as confirmed. To prove it, all we need to do is look at the statistical values that we can see, for example, next to the names of the countries in relation to GDP. But it was not just the GDP that made countries winners and losers. In many places, there were also differences in household income, changes in the structure of consumption or even the volume of investment. Investment volumes also varied widely across countries. While investment rose in some countries, it fell in others. In principle, it was inevitable that where GDP fell, investment would fall. However, we did find countries where the opposite was true, with investment falling despite GDP growth. There can be only one explanation for this. They are not getting GDP growth from investment, but from other sources. One can fully agree with the 2011 study by Gonzalo Munyo and Ernesto Talvi. Indeed, countries can be divided into groups according to how far they have overcome the effects of the crisis, whether they have achieved good or bad results as a consequence of the crisis. China is clearly the winner of the crisis and we can see this clearly in our study. Indeed, there are also countries that are losers from the crisis. Germany is one of them, as we can see and feel the downturn in its macroeconomic data. We have also been able to show that the crisis has indeed affected everyone, but that some have not suffered a major setback.

A similar conclusion can be drawn for the other hypothesis, which has also been confirmed. In it, we argued that this interesting phenomenon can be observed in the same way in international competitiveness rankings. Namely, that crises do not necessarily cause a decline in competitiveness. Some countries have been able to strengthen their competitiveness even after 2020 or have not experienced a decline. The best example of this is the IMD competitiveness material, which clearly shows the results and rankings for 2022. There are several countries that have even managed to strengthen their competitiveness, while others have unfortunately experienced a significant decline in competitiveness. This includes Poland. Indeed, Poland can be said to be one of the big losers in the crisis. This is because, immediately before the pandemic, their national competitiveness was still on a very good trajectory. Then, as a result of COVID-19, this momentum was interrupted and it suffered a serious drop in the competitiveness rankings. Add to this macroeconomic data and the picture becomes even more nuanced. Although Poland's GDP did not fall significantly, investment rates declined here too. As investment will be lower, the impact will probably only be felt in the future. Hypothesis H2 also suggested that countries could be grouped into different categories, as Talvi did in 2011.

H2: There is a strong presumption that the claim that the crisis will necessarily have a negative impact on everyone is not true. There are some countries whose international competitiveness has been strengthened even under the impact of COVID-19, so that these countries have been able to maintain their competitive position during the crisis. It can also be assumed that countries can be grouped into different categories in terms of whether they are winners or losers from the crisis. The grouping is based on which countries have experienced positive changes in GDP and competitiveness, and which countries have experienced a deterioration in these indicators.

The groups could be named in terms of being clear winners or losers following the COVID-19 pandemic. GDP and competitiveness provide the main basis for comparison. It can be concluded that China is by far the biggest winner from the COVID-19 situation. With its increasing competitiveness, GDP is also growing strongly. The biggest losers include the UK, Germany and Poland. This is because either their GDP has fallen a lot or their competitiveness has fallen too. The latter is very bad because while GDP is only a given, a weakening competitiveness means that the country cannot do much in the present to build its future.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

## **Acknowledgements or Notes**

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**IConSoS 2022: International Conference on Social Science Studies**

## **Development of a Value -Based Curriculum Model for the Environment in the Vocational College Standard Curriculum in the Field of Refrigeration and Air Conditioning: A Needs Analysis**

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**Abstract:** This curriculum model is a value-based model of environmental sustainability built through the Vocational College Standard Curriculum of Refrigeration and Air Conditioning (VCSC\_ RAC). Concerning that, this study proposes a Research, Design and Development (DDR) approach which is a multi-method development research approach. The study will go through three phases and use several different research tools in each phase. The involvement of study participants from expert groups and user groups consisting of field lecturers will be able to provide various inputs and consider aspects of the model's needs in addressing the problem of the impact of refrigerants on the environment through VCSC\_ RAC. The purpose of this study is to identify the needs analysis for the development of this curriculum model. The study was conducted by survey method that is using questionnaires. Questionnaires were distributed to Vocational College (VC) lecturers in the field of Refrigeration and Air Conditioning (RAC) throughout Malaysia. Researchers have found that there is a need to build a value -based curriculum model for the environment. The findings of this study indicate the need for the curriculum model to be built through VCSC\_ RAC based on values towards the environment. The emphasis on the value aspect of the environment is very relevant so that the quality of teaching and learning in VC can be improved to provide students with values, awareness and responsibility towards the environment.

**Keywords:** Curriculum model, Needs analysis, Design and development, Suitability, Usability.

### **Introduction**

Environmental Education should be a component of a holistic lifestyle because it is the knowledge that needs to be passed on to humans (Raman & Abu Bakar, 2019). Environmental Education should place a greater emphasis on ongoing and regular practice because this problem is entrenched in human attitudes and is less impactful despite the latest actions, laws, and advances in addressing environmental issues. Investing in the future construction of a sustainable society is the finest investment if it begins in the early stages of schooling (Raman & Abu Bakar, 2019).

The primary goal of education is to generate students who are environmentally conscious and enthusiastic. We need to be able to develop an understanding of community members first, which requires a transformative educational approach. Issues of environmental awareness and sustainability, as well as changing attitudes and behaviours toward the environment, society and economy, require a transformative educational approach

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(Kalsoom & Khanam, 2017). If teachers are not equipped to teach the younger generation about the importance of environmental sustainability, there are also impediments for the next generation to solve environmental concerns (Ashmann & Franzen, 2017). If teachers are willing to teach about environmental sustainability, then there will be a profound impact on the students themselves. To deliver environmental education, teachers should consider the use of existing materials and human resources. The views of teachers who emphasize environmental sustainability awareness illustrate the importance of environmental sustainability. Teachers' practice can familiarize students with the concept of sustainability and develop an awareness of environmental sustainability in them to influence students' awareness (Major et al., 2017). All levels of society will be given awareness and be able to contribute to understanding and facilitate continuity, not only at the individual level. In learning content, this should be a core concept of continuous practice and teaching (Wamsler et al., 2018). In shaping the changes needed to achieve sustainable development, teachers play a very important role in producing teachers who are responsible for a sustainable future (UNESCO, 2010). Therefore, teacher education programs need improvement so that teachers' awareness and attitudes toward the environment become one of the things that affect the ability of teachers in the implementation of Environmental Education (Yusof et al., 2013). In the learning process, students need to go through behaviour and oral language both explicitly and implicitly. Teachers' positive attitudes towards environmental care are closely related to positive behaviours towards environmental care. Students also build knowledge and behaviour not only through a planned formal learning process but also based on observations made.

## **Problem Statement**

RAC field students in VC follow the VCSC\_RAC curriculum. Students in this RAC field will learn about refrigerants. Before students use refrigerants in their learning, they should be made aware of the dangers that these refrigerants pose to the environment, such as global warming and ozone layer depletion. Something must be done to avoid the current environmental degradation, which is growing increasingly frightening. Extreme weather conditions have been impacted by global warming and ozone layer depletion. To sustain and restore ecosystems, collective efforts and individual awareness must be increased (Aarnio-Linnanvuori, 2019). This problem that arises is rooted in human attitudes and behaviours themselves but is less effective even if there are legal actions or technological innovations created to solve this problem. Changes in attitudes and behaviours can only be achieved through education if it is put into practice (Yalcin et al., 2016). Most environmental awareness programmes should focus on environmental care and economic development awareness to provide a more sustainable environment in terms of social issues (Mahat et al., 2014). We must also remember that education is more than just the content of knowledge that must be transmitted; it is also a way of life that must be maintained. Because environmental education is taught across the curriculum in Malaysia, teachers must be creative in integrating lesson content with environmental education (Rahman et al., 2018). According to Mukaddes and Agnello (2009), students are given the opportunity in sustainable education to integrate considerations of the environment in taking any decision more prudently. Dedicated teachers can maintain, animate and instil positive values in students (Maheshwari, 2005).

Ozone is a molecule that contains 3 oxygen atoms. Ozone acts as an earth protector that absorbs ultraviolet rays from the sun. Chlorofluorocarbons (CFCs) and Hydrochlorofluorocarbons (HCFCs) are major ozone depleters in the stratosphere. Ozone Depleting Potential (ODP) is a scale that measures the ability of ozone-depleting substances or Ozone Depleting Substances (ODS) such as CFCs and HCFCs that destroy ozone. CFCs have a higher ODP than HCFCs. The ozone layer that protects the earth is undergoing depletion because of human activities. The effects of ozone depletion are such as skin cancer, eye diseases, weakening of the immune system and so on. Global warming is an increase in the average temperature of the air on the earth's surface and sea since the middle of the 20th century and is expected to continue. Global Warming Potential or Global Warming Potential (GWP) is a relative measure of the heat of greenhouse gases trapped in the atmosphere. The effects of global warming such as extreme weather changes, heat waves, prolonged hot weather as well as droughts will cause changes in the pattern of rainfall distribution.

The teacher in teaching and learning is a person who is always present and near to the students. Teachers are supposed to use VCSC\_RAC to teach kids values that will help them appreciate the environment. This is a way for students to learn about the environment while servicing and maintaining the RAC system in the early phases of their education before entering the industrial sector. As a result, this curriculum model construction study is critical for integrating environmental values in VCSC\_RAC. This is done to ensure that pupils are aware of the importance of the environment from a young age in the classroom before entering the industrial sector.

## **Purpose of the Study**

This study aims to identify the need to build a curriculum model in VCSC\_RAC based on values toward the environment.

## **Research Questions**

Phase One (Needs Analysis)

- a. Why is it necessary to build a Curriculum Model based on values towards the environment?
- b. What are the content requirements in the construction of a value-based Curriculum Model for the environment?

## **Needs Analysis**

Studies on the appreciation of students' values nowadays are very few (Mohamad Khairi et al., 2015). Researchers emphasize that students need to be provided with knowledge of values and must be reinforced with awareness, confidence, appreciation, and practice. This can only be done when the school is considered as an institution that is aware of the value aspect that can provide sufficient opportunities for students to appreciate and practice these noble values. According to Witkin (1997) needs analysis is a method used to identify the gap between the current situation and the target situation. While McKillip (1997) stated that needs analysis is the value of judgment for certain groups that have problems that need to be solved. Needs analysis aims to investigate existing issues and needs to build this curriculum model. The designed curriculum model can serve as a practical guide, on how learning pedagogy can help teachers meet the needs of students to attract their interest in the subject through engaging teaching methods (Saleh & Siraj, 2016). Needs analysis in this study will be conducted through a survey method to identify the need for the construction of this curriculum model based on the views of lecturers of Vocational College-Refrigerant and Air Conditioning (VC\_RAC) in Malaysia. Study participants were given a set of questionnaires in the form of a Likert scale to obtain feedback on the need for the construction of this curriculum model.

The purpose of the questionnaire sent to VC\_RAC instructors was to evaluate if they should have a curriculum model that includes the value aspect of awareness activities in their classes. This curriculum model can be used as a guide by lecturers in the teaching process, and its application is most effective when lecturers use it in workshops. The study's questionnaire items were created using Constructivism Theory and Priority Theory as a guide, as well as the Bennert Model (1974) and the Taba Development Model (1962). Model content requirements and model construction requirements are the two fundamental constructs explained by this theory. As a result, a requirements analysis study is required to determine the need for the creation of this curriculum model.

## **Operational Definition**

### **Refrigerant**

In a RAC system, a refrigerant is used as a heat absorber in the evaporator and removes that heat in the condenser. Under low-pressure conditions, the refrigerant changes shape from a cold liquid to a cold gas in the evaporator during the evaporation process. The refrigerant will change shape from a hot gas to a hot liquid under high-pressure conditions during the condensation process that takes place in the condenser. Other names for refrigerants are freon, fron, genetron, isotron and neon. These names exist based on the countries that use them. The use of refrigerant varies according to the system that requires it as well as having different boiling points at different pressures. There are 4 types of refrigerants according to the chemical elements contained in the refrigerants, namely CFC, HCFC, HFC and HC. Researchers will try to apply environmental elements in the curriculum model so that students have an environmentally responsible nature while doing the work of servicing the RAC system.

## **Environmental Education**

The process of environmental education involving human interaction with the environment is known as Environmental Education. For the sake of universal well-being, humans need to manage the environment with full responsibility. It is a learning process to understand human interaction with the environment and how the environment is managed wisely. The focus of this scholarly paper is to build awareness, foster positive attitudes as well as encourage students to take note of issues related to the environment. Therefore, the definition of Environmental Education in this study refers to the application of environmental elements in VCSC\_RAC.

## **Application of Environmental Values Through the Curriculum**

According to the Center for Curriculum Development (1998), the application of values across the curriculum refers to the process of inserting, integrating, and making connections about the environment into the content of all subjects. The environmental elements to be implemented in VCSC\_RAC are consistent with the integration in all subjects. RAC students will use cooling materials in teaching and learning up to the world of employment in the industrial sector after graduation. Therefore, the value requirement on the environment in the VCSC\_RAC curriculum model is necessary.

## **VCSC\_RAC**

At Vocational Colleges (VC), VCSC is a specialized education curriculum for students pursuing post-secondary vocational education and training at VC. VCSC is formulated according to the occupational competency standards set by the occupational standards organization and its level of learning meets the requirements of the Malaysian Qualifications Framework (MQA) levels 1 to 4. The structure of VCSC consists of three modules namely (1) academic modules, (2) vocational modules and (3) competency modules (KPM, 2011). In 2012, VCSC was first introduced in 15 selected pilot VCs. In the context of the general goals of the national education system, VCSC is designed to form a strong, knowledgeable and highly skilled human capital, namely: (1) to produce students with high-level job competencies and meet the needs of the industry; (2) fostering professional character; (3) to produce competent students who are competitive entrepreneurs in their chosen vocational field; (4) provide knowledge for further studies at higher levels; and (5) fostering a love of lifelong learning (MOE, 2011a). In this context, VCSC refers to the VCSC of the RAC field.

## **Methodology**

This paper aims to look at how this curriculum model acts as a special guide for RAC lecturers to apply values to the environment through their teaching. The model that will be designed can serve as a practical guide that allows this model to help lecturers meet the needs of students and be able to attract their interest in applying values to the environment through interesting teaching methods. This needs analysis study used a set of questionnaires for data collection. The questionnaire was adapted and modified from the study of Ariffin (2018). The questionnaire used a five-point Likert scale of 1 = strongly disagree, 2 = disagree, 3 = disagree, 4 = agree, and 5 = strongly agree. This questionnaire consists of 3 sections. Part A is related to demographic factors and contains 5 questions related to a career as a VC\_RAC lecturer. Part B deals with the content requirements of the model on aspects of environmental values. Part C deals with the curriculum model construction requirements in the recommended VCSC\_RAC. The respondents of the study consisted of lecturers who teach RAC subjects in VC around Malaysia involving the Southern Zone, Central Zone, Eastern Zone, Northern Zone, Sarawak Zone and Sabah Zone. A total of 121 respondents were involved in the study which was self-managed by the researchers through Google Forms distributed through *Whatsapp* and Telegram applications. The data obtained were analysed through descriptive statistics using SPSS Version 23. Descriptive statistics were used in this study because the data generated can be considered as a summary of the entire data set (Saleh & Siraj, 2016). It is also able to provide information directly and easily. The descriptive statistics used were frequency, percentage, mean and standard deviation. The analyses were performed using descriptive statistics including percentage, frequency, and mean score. This analysis was used to show the composition of respondents and demographic characteristics of teachers such as gender, age, VC\_RAC zone, academic qualification, and teaching experience.

Table 1 Interpretation of mean score of VC\_RAC lecturer approval (Pallant, J, 2010)

Mean Score	Mean Score Interpretation
1.00 – 2.33	Low
2.34 – 3.66	Medium
3.67 – 5.00	High

## Findings

### Section a (Demographics)

The distribution of respondent data is described as shown in Table 2 covering gender, age, academic qualification, VC\_RAC Zone and teaching experience.

Table 2. Demographics

Aspect		Percentage
Gender	Male	65.3% (N=79)
	Female	34.7% (N=42)
Age	20 until 30 years old	11.6% (N=14)
	31 until 40 years old	38.8% (N=47)
	41 until 50 years old	26.4% (N=32)
	51 until 60 years old	23.1 (N= 8)
Academic Qualification	Certificate/Diploma	4.1% (N=5)
	Bachelor's Degree	88.4% (N=107)
	Master's Degree	7.4% (N=9)
	Philosophy Doctor	0.8% (N=1)
Zon VC_RAC	VC Southern Zone	24% (N=29)
	VC Central Zone	24% (N=29)
	VC Eastern Zone	26.4% (N=23)
	VC Northern Zone	23.1% (N=21)
	VC Sarawak Zone	5.8% (N=7)
	VC Sabah Zone	12.9% (N=12)
Teaching Experience	Less than 2 years	5.8% (N=7)
	2 until 5 years	30.6% (N=37)
	6 until 10 years	5% (N=6)
	11 until 15 years	10.7% (N=13)
	15 until 20 years	5.8% (N=7)
	More than 20 years	43% (N=52)

A total of 121 VC\_RAC lecturers were distributed by gender into 79 male lecturers (65.3%) and 42 female lecturers (34.7%). In terms of age, the highest percentage was in the group of 31 to 40 years (38.8%) while the group of 20 to 30 years had the lowest percentage. Next, for academic qualifications, the majority have a bachelor's degree while other qualifications have a low percentage. The percentage of VC\_RAC lecturers who answered the questionnaire from the Zone in the Peninsula is higher than in the Sabah/Sarawak Zone because there is only one VC\_RAC in Sarawak and 3 VC\_RAC in Sabah compared to the number of VCs in the Peninsula. However, in terms of teaching experience, the percentage of VC\_RAC lecturers who have been teaching for more than 20 years is ahead and recorded the highest percentage compared to other teaching period categories.

Overall, the findings of this need analysis questionnaire can be considered strong and answer the needs analysis research question because the respondents are comprised of field lecturers who have academic/professional qualifications and extensive teaching experience in the field of RAC. Most of them have taught for more than 10 years and have other qualifications such as Sijil Kemahiran Malaysia (SKM) book author, curriculum drafter, Assessing Officer of the Skills Development Department, Internal Verification Officer, Professional Technologist (TS) Malaysian Board of Technologist (MBOT), Vocational Training Officer (VTO) instructor certificate, Vocational Training Executive (VTE), skills competition judges and so on. The researcher found that the findings of the needs analysis obtained from these respondents who consist of RAC lecturers with extensive experience are the results of very valuable and high value and strong findings due to the aspects of the respondents that have been described in detail above.

## **Section B (Model Content Requirements)**

This section is intended to determine the extent to which VC\_RAC lecturers need this curriculum model in their teaching, and this is measured based on the question items that have been distributed to the respondents through the questionnaires. The level of needs is measured based on the interpretation of mean values which are divided into three levels of achievement, namely low level of achievement (Mean 1.00 to 2.33), medium level of achievement (Mean 2.34 to 3.66) and high level of achievement (Mean 3.67 to 5.00) (Pallant, J., 2010). Table 3 shows the analysis of all items found in the content requirements of this model. Overall, all items in the model content requirements construct are at a high level of interpretation. The interpretation of the mean score to obtain teachers' agreement on the need to build this curriculum model is shown in Table 3

**Table 3. Mean scores and standard deviations for all items found in the model content requirements construct**

Item	Mean	Standard Deviation	Interpretation
1. Elements of environmental values need to be implemented in the VCSC-RAC.	4.62	.536	High
2. The application of elements of environmental values in VCSC-RAC can educate students to be concerned about the environment.	4.65	.512	High
3. The application of value elements of the environment in VCSC-RAC can shape positive behaviours towards the environment.	4.56	.546	High
4. The application of value elements of the environment in VCSC-RAC can provide knowledge and form a positive attitude towards the environment.	4.50	.565	High
5. The application of value elements of the environment in VCSC-RAC can create the nature of interdependence between humans and the environment.	4.45	.516	High
6. The cause of environmental pollution is human attitudes.	4.63	.519	High
7. The quality of the environment is very important in a country.	4.67	.490	High
8. Eco-friendly means not harming the environment.	4.64	.500	High
9. Schools/educational institutions play a role in increasing students' awareness of the environment.	4.56	.546	High
10. Teachers play a role in producing students who are positive towards the environment.	4.54	.563	High
11. Teachers are responsible for achieving the objectives of value-based learning toward the environment.	4.36	.632	High
12. Teachers play a role in raising awareness about the impact of refrigerant gases on students.	4.57	.560	High
13. Teachers have a role in increasing students' awareness of global warming and ozone depletion due to the release of refrigerant gases into the atmosphere in teaching.	4.55	.562	High
14. Teachers play a role in raising the awareness of students who belong to individuals who handle refrigerants and can have an impact on global warming and ozone layer depletion.	4.61	.522	High
15. Teachers play a role in raising students' awareness of the responsibility not to release refrigerants into the atmosphere while doing maintenance work on Refrigeration and Air Conditioning systems.	4.60	.510	High

Table 4. Mean of overall construct model content requirements

Frequency (N)	Mean	Standard Deviation
121	4.5675	.39074

Based on Table 4, the mean value for the entire model's content requirements construct is 4.5675 while the standard deviation is .39074. This indicates that the selected respondents strongly agree with the content requirements of the model. This is because the level of agreement of the requirements to the content of the model is in the range of the 'agree' and 'strongly agree' scales. This indicates that a value-based model content on the environment in VCSC\_RAC needs to be built as guidance in teaching to produce environmentally responsible students while using refrigerants in servicing and maintaining RAC systems.

### Section C (Requirements for Model Construction)

Table 5 shows the analysis of all the items found in the requirements for the construction of this model. Overall, all items in the construct of requirements for the model are at a high level of interpretation.

Table 5. Mean scores and standard deviations on all items found in the construction requirements for model construction

Item	Mean	Standard Deviation	Interpretation
1. A comprehensive guide is needed to increase awareness of values towards the environment.	4.64	.483	High
2. I need guidelines to increase the environmental values in teaching.	4.59	.543	High
3. Increasing environmental values needs to have a specific process.	4.53	.533	High
4. I need guidance in the process of increasing environmental values.	4.49	.593	High
5. Students need to be guided with the right methods to increase the value of the environment.	4.60	.491	High
6. The process of increasing the value of the environment should be based on various activities in teaching.	4.56	.546	High
7. An activity-based model for increasing environmental values needs to be built.	4.50	.550	High
8. The construction of teaching models is necessary for the application of values to the environment.	4.50	.550	High
9. The construction of teaching models can promote environmental awareness among students.	4.49	.518	High
10. The construction of teaching models is suitable for students in the field of Refrigeration and Air Conditioning who frequently use refrigerants.	4.52	.564	High

Based on Table 6, the mean value for the entire construct of the need for the construction of this model is 4.5413. This indicates that the selected respondents strongly agree with the model construction requirements. This is because the level of agreement of the requirements for model construction is in the range of 'agree' and 'strongly agree'. This indicates that the construction of value-based models of the environment in VCSC\_RAC needs to be built as guidance in teaching to produce environmentally responsible students while using refrigerants in servicing and maintaining RAC systems.

Table 6. Mean for overall construct requirements for model construction

Frequency (N)	Mean	Standard Deviation
121	4.5413	.42459

## **Discussion and Implications of the Study**

The National Philosophy of Education intends to produce balanced and harmonious human beings physically, emotionally, spiritually, and intellectually based on faith and obedience to God (Center for Curriculum Development, 2005). Producing a moral and ethical society is one of the challenges for the country to become a developed country by 2020 (Mohamad Khairi et al., 2015). To realize the country's aspirations, the stability and purity of the country's education system is an important foundation. In shaping morals, one needs to master knowledge, skills, and good attitudes. Findings for the first research question regarding the lecturer's perception of the need to build a model showed that respondents believe that this model can increase students' awareness of the environment. This is seen through the findings regarding the tendency of respondents to use this model as a guide in appropriate teaching based on the topics taught. Respondents' perceptions of the overall construct have shown a positive perception of the need for the construction of this model. This shows that the respondents agreed on the need to build a model that leads to students' awareness of the environment. This has been emphasized in VCSC\_RAC which suggests that lecturers can use available resources more effectively to enable students to obtain additional information and resources.

The results of the needs analysis found in phase one showed that the respondents had a positive perception of the construction of the model which serves as a guide. In other words, the researcher has obtained a license to continue the study in phases after getting answers at the needs analysis stage. Findings from this needs analysis also support Chong's (2012) view that changes in education in Malaysia require changes in teaching and learning in the 21st century. Therefore, teaching and learning methods based on environmental awareness in VCSC\_RAC should be exposed to students. These findings enable this model to be implemented as a support and guide for the lecturers in teaching. Since the findings of this needs analysis are support and guide to teaching, then these findings can be used as a platform to design a model that can be used as a guide by lecturers to create student awareness of the environment. This is one of the alternative approaches to teaching for the future and the formation of a flexible and organic curriculum according to the mould of the Industrial Revolution 4.0.

## **Conclusion**

Findings from the needs analysis show that there is a need to produce a teaching guide that is based on environmental awareness as a guide to lecturers. This is in line with UNESCO's requirement that educators should also play a role in creating students' awareness of the environment. Educational practitioners need to take advantage and make the best use of opportunities to build a learning environment based on environmental awareness. The findings of this needs analysis show that it is time for researchers to be allowed to build a curriculum model as a guide in teaching. The construction of a value-based curriculum model for the environment should be implemented for this purpose. It can be concluded that the findings of the needs analysis indicate that there is a need to build a curriculum model that can create awareness of the impact of refrigerant emissions on the atmosphere that can cause global warming and ozone layer depletion.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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**IConSoS 2022: International Conference on Social Science Studies**

## **Implementation of Higher Order Thinking Skills (HOTs) in Teaching Malay Language Writing Skills among Preschool Teachers**

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**Abstract:** In the Malaysian Education Development Plan (PPPM 2013-2025), one of the aspects that is the focus is the implementation of Higher Order Thinking Skills in teaching and learning in schools. In this regard, teachers need to apply HOTs in teaching in order to train and improve students' thinking skills creatively and critically. In addition, in teaching Malay writing skills, teachers need to be more creative in determining HOTs-based teaching methods as writing skills are the most difficult skills to master compared to other skills. Therefore, HOTs are important to be applied in the teaching of writing skills starting from the early stages of education in preschool in order to train preschoolers to think high level and be cultured with HOTs. Hence, preschool teachers need to master the knowledge on the implementation of HOTs so that the teaching process are of excellent quality and can stimulate the thinking of the students to the highest level of HOTs. Thus, this concept paper will discuss the problem of the implementation of HOTs in Malay language writing skills, the importance of teachers applying HOTs in teaching and learning by detailing the planning and implementation of HOTs in pedagogy as well as parsing the teaching and learning strategies of HOTs.

**Keywords:** Higher order thinking skills, Preschool teachers, Teaching and learning, Writing skills, National preschool standard curriculum.

### **Introduction**

One of the government's efforts in ensuring that the education system today is comparable to that of developed countries, the Ministry of Education (MOE) has introduced the Education Development Plan (PPPM 2013-2025). In this PPPM (2013-2025) programmed, various goals need to be achieved to ensure that teachers and pupils are at the maximum level of quality. One of the MOE's aspirations in PPPM 2013-2025 is to inculcate HOTs where teachers are expected to apply HOTs to the maximum extent possible in teaching and learning in the classroom. Thus, Malay language education is no exception in realizing the MOE's aspiration. In addition, Malay Language is a core subject that must be mastered by all students from preschool education to secondary school level.

In the National Preschool Standard Curriculum (KSPK revision 2017), Malay writing skills are one of the important skills organized in the communication pillars of language skills besides listening and speaking skills and reading skills. There are content standards, learning standards and performance standards that preschoolers need to master. Among the points highlighted is the HOTs which is explicitly stated in the writing of learning

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standards where preschool teachers need to elaborate learning standards in teaching and learning in the classroom with emphasis on HOTS (BPK KPM, 2016). The MOE's aspiration in PPPM (2013-2025) is in line with KSPK's goal which aims to develop the potential of students aged four to six years as a whole and integrated in physical, emotional, spiritual, intellectual, and social aspects through a safe and nurturing learning environment as well as fun, creative and meaningful learning activities. This is to enhance their skills, instill confidence and develop a positive self-concept in the students so that they are ready for the challenges and follow the next learning (BPK, MOE 2016). Thus, HOTS serves as an important element that preschool teachers need to apply in teaching Malay language writing skills to foster a culture of critical, creative and innovative thinking as early as preschool education.

In the implementation of Malay Language education teaching in pre-school, these writing skills include mechanical and mentalist writing skills. Children need to be exposed to mechanical and mentalist writing skills in a balanced and integrated manner at the preschool education level. Mechanical writing skills begin at the early education stage which involves a lot of fine motor skills activities (Ummu Afifah et al, 2021), whereas mentalist writing skills involve children's thoughts or opinions that emphasize the meaning of the writing produced by them (Tompkins & Jones, 2019). In this regard, the main focus of the discussion is on the mentalist writing skills which is, the teacher needs to train the thinking skills of pupils from the early stages of education in preschool. In this regard, this is very closely related to HOTS. In teaching Malay Language writing skills, preschool teachers need to apply the HOTS element during the teaching and learning process in the preschool classroom. HOTS are emphasized in teaching and learning so that teachers can stimulate structured and focused thinking among students. HOTS descriptions are focused on four levels of thinking such as table 1 (BPK KPM, 2016).

Table 1. Thinking levels (Moe, 2014)

Stages of thinking	Descriptions
Applying	Using knowledge, skills, and values in different situations to implement things
Analyzing	Evaluate information into small parts to understand more deeply and link between the sections
Evaluating	Make considerations and decisions using knowledge, experience, proficiency, and value and justify
Creating	Produce creative and innovative ideas or products or methods

## Literature Review

### Thinking Skills

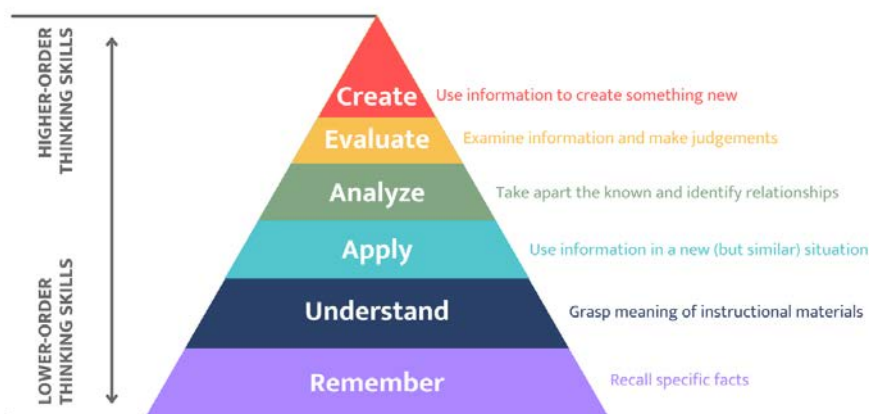


Figure 1. Levels of thinking

### Levels of Thinking Skills

Based on Bloom's theory (The Anderson Review 2001), thinking skills have different levels ranging from the level of the simplest thinking ability to the most critical. There are 6 levels (Figure 1) in the Anderson review

hierarchy adopted in the Curriculum and Assessment Standards Documents (DSKP) to be used as guidance by teachers. Each level has specific indicators of skills with the characteristics of abilities and mastery of thinking skills in accordance with the appropriateness of the development of the pupil's self-potential. There are two main levels of thinking skills which are lower-order thinking skills (LOTS) and higher-order thinking skills (HOTS). The figure below shows the levels of thinking skills and a description of the characteristics of thinking abilities and mastery for each level.

### Higher- Order Thinking Skills (HOTS)

HOTs are defined as the ability to apply knowledge, skills, and values in making reasoning and reflection to solve problems, make decisions, innovate and be able to create things (MOE, 2013). HOTs can be identified in Content Standards (SK) and Learning Standards (SP) through thought-level verb statements in Anderson's revision Bloom Taxonomy such as Figure 2. Based on the definition of HOTs in Figure 2, HOTs refers to the skills of applying, analyzing, evaluating and creating. In the context of this study, this skill was identified as the level of thinking that is the focus in the determination of the Content Standards (SK) and Standards of Learning (SP) for Malay Language subjects in the writing skills of preschoolers that need to be applied by the teacher in the classroom to ensure that preschoolers master the HOTs skills.

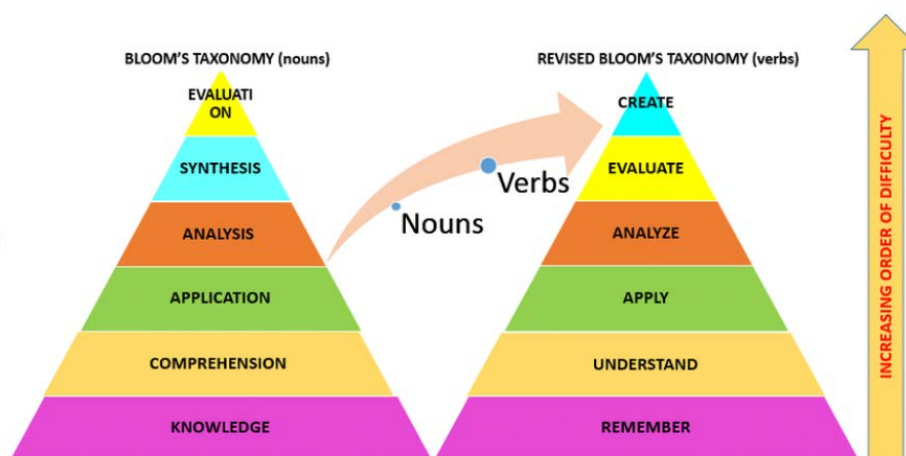


Figure 2. Thinking level hierarchy (Moe, 2014)

HOTs are the highest level in the cognitive process hierarchy. HOTs occurs when a person gets new information, stores in memory and organizes, associates with existing knowledge and generates information to achieve a purpose or solve complex situations. Therefore, HOTs are very important to everyone as HOTs can challenge someone to perform, analyze and manipulate information (Widad et al, 2011). Therefore, we can look from various perspectives to solve problems in certain situations especially high-level critical problems. (Mokhtar, 2017).

HOTs is explicitly stated in the curriculum so that teachers can translate in teaching and learning to stimulate structured and focused thinking among students. HOTS description focuses on four levels of thinking which are the skills of applying, analyzing, evaluating and creating. This skill is identified as the level of thinking that is the focus in the determination of the Content Standard (SK) and The Standard of Learning (SP) for the subjects taught in schools to ensure that students master the HOTs as envisaged by the MOE. At the level of applying, it requires students to use knowledge, skills, and values in different situations to do something. In this context, students are able to solve problems by applying concepts that they understand through teaching and learning activities. Among the verbs related to the level of applying thinking are drawing, pointing the way, adopting, using, pointing, solving, classifying, drawing, implementing, checking, sketching, complementing, adapting, building, and predicting (BPK KPM, 2014).

At the analysis level, students are able to map the information into small parts to understand more deeply and connect the links between the sections. In this context, students are able to interpret the roles and functions of each small part to understand a whole concept. Among the verbs related to the level of analytical thinking are identifying, categorizing, examining, separating, conducting experiments, screening, explaining, displaying,

predicting, analyzing, explaining, detecting, examining, testing, comparing, evaluating, distinguishing, and investigating (BPK KPM, 2014).

Next, the level of evaluate thinking can be realized when the pupil makes judgments and decisions using knowledge, skills and values and gives justification. Among the verbs related to the level of evaluation thinking are evaluating, choosing, considering, prioritizing, defining, discussing, confirming, defending, proposing, discussing, evaluating, supporting, concluding, using, assessing, reasoning, and making decisions (BPK KPM, 2014).

The level of create thinking is the highest level of HOTS which is pupils come up with creative and innovative ideas or products or methods. Among the verbs related to the level of thinking of creating are planning, developing, generating, installing, reorganizing, predicting, creating, preparing, constructing, formulating, designing, combining, proposing, and composing, (BPK KPM, 2014).

However, in the context of teaching and learning in preschool specifically in writing skills, preschool teachers are limited in determining the level of HOTS based on the learning standards contained in the 2017 revision KSPK. This is because, learning standards preschool Malay writing skills do not all characterize HOTS verbs. However, it does not prevent preschool teachers from applying the HOTS element in teaching and learning writing skills. Preschool teachers need to be creative in diversifying teaching techniques because if they clearly understood about the implementation of HOTS, it is a form of application that HOTS can be applied according to the appropriate level of the pupil's thinking and the main factor is that the teacher needs to understand and be creative in diversifying the teaching strategy starting from the preparation before teaching which involves the work of selecting learning standards and content standards determining the teaching aids that correspond to the level of learning standards that has been chosen, set up questions based on HOTS and determine the type of assessment that challenges the students' minds. At the implementation stage, teachers need to carry out learning activities in the classroom in a manner of delivery that can generate students' ideas, and always actively involve students in teaching and learning activities. At the assessment level, the teacher needs to prepare written questions that challenge the student's mind according to the level of suitability of the pupil.

HOTS also needs to be understood as the ability to apply knowledge, skills and values in making reasoning and reflection to solve problems, make decisions, innovate and be able to create things. HOTS includes critical thinking, creative and reasoning skills and thinking strategies. Critical thinking skills are the ability to evaluate an idea logically and rationally to make reasonable judgments using reasonable reasoning and evidence. Creative thinking skills, on the other hand, are the ability to produce or create something new and valuable by using original imagination and thinking not according to the prevalence, meantime, when reasoning skills are the ability of the individual to make judgments and judgments logically and rationally. Finally, thinking strategies are a structured and focused way of thinking to solve problems (BPK KPM 2013).

HOTS can be applied in the classroom through activities in the form of reasoning, inquiry learning, problem solving and projects. Teachers and pupils need to use thinking tools such as thought maps and mind maps as well as high-level questioning to encourage pupils to think (BPK KPM, 2014).

Thus, the teacher's understanding of the meaning of HOTS as well as the use of verbs in the level of thinking found in the curriculum document enables the teacher to prepare the appropriate teaching and learning content and work out the content of the subjects that meet HOTS. Teachers need to be able to elaborate curriculum documents by identifying the appropriate use of HOTS verbs according to the subjects taught and being able to apply them in the form of teaching and learning activities that challenge the mind and stimulate the learning of students.

### **The Implementation of Higher-Order Thinking Skills in Malay Language Writing Skills**

Writing skills is one of the important skills in learning the Malay language that is emphasized in the education curriculum in Malaysia (Norfaizah et al, 2015). This is because the writing skill process is the highest and complex language skill to be mastered in the Malay language subjects. Writing skills are also more challenging to teach pupils as most pupils are unable to fully master writing skills. This situation is due to the need for the writing skills themselves which requires an individual to think before, during and after the writing process is implemented. (Marzni et al, 2018).

According to (Olness, 2005), the teaching of writing skills is a structured condition in which children are guided through the correct writing steps. Teachers have a complex task in creating a learning environment that provides exploratory opportunities during writing learning (Mack, 2012). In teaching and learning Malay Language, writing skills are one of the skills that all students need to master from primary to secondary school level (Hijrah et al, 2019). Therefore, teachers need to have the best teaching methods and strategies to ensure the effectiveness of teaching during teaching and learning writing skills in the classroom. Teaching writing skills needs to involve students more in writing activities and not just teacher centered.

However, the teaching methods of writing in schools are more conventional in nature and discourage the creativity of pupils today. Therefore, bilateral interaction and active learning that contribute to creative thinking cannot occur in the classroom (Azieyana & Christina 2018). Accordingly, pupils often have trouble sparking and generating ideas in writing. Lack of ideas is a common problem for students when they start writing which affects the quality of the writing produced (Dian et al, 2018).

Therefore, teachers play an important role in planning the teaching and learning process with the aim of providing knowledge input to students as well as providing meaningful experiences to students. This is highly dependent on the ability of teachers to use the variety of teaching methods and approaches to convey knowledge to students to maintain their attention in the classroom (Marzni et al, 2018). Therefore, writing skills are very closely related to thinking skills. According to (Ahmad Fikri & Zamri 2019), the lack of students in mastering thinking skills will make them weak in writing. If writing skills do not improve, the ability of pupils to express their thoughts or ideas through written form will decrease or not develop (Hamzah et al, 2018).

In this regard, the implementation of HOTs in teaching and learning writing skills is very important to attract interest as well as to be able to improve pupils' thinking skills through activities that can promote pupils' thinking skills. Through the planning and implementation of such activities, guidance from teachers is essential so that thinking practices can be enhanced in teaching and learning writing skills (Nur Shahirah & Zamri Mahamod, 2021). Malay language teachers need to have knowledge and mastery of HOTs as the thinking skills can influence the teachers' perception of the effectiveness of teaching and learning in the 21st century (Shahirah & Mahamod, 2021).

In the context of preschool, HOTs should be applied through the planning and implementation of teaching and learning effectively. Planned activities should provide a nourishing and enjoyable experience, actively and safely engaging pupils. Teachers are encouraged to use creativity to select, organize, process and diversify activities based on the Learning Standards so that activities in the form of reasoning, inquiry learning, problem solving, and projects can be applied (BPK, MOE 2016).

However, a researched by (Zaidon & Ayob, 2013) in preschool classes showed that teachers are less emphasized on the aspects of the writing process to students, but rather on the mechanical aspect of writing. This statement is also supported by (Graves & Stuart, 1985) and (Mahzan Arshad, 2012) which is that the writing training in schools emphasizes the structure of the language that does not mean anything to children other than not being interested in them. Preschool teachers lack writing activities that require children to generate their own ideas or write for the purpose of communicating (Siti Iwana Sharizah Abu Samahet al, 2013). Past studies have also shown that preschool teachers regularly use copying, training, and questioning activities as the main activity in writing teaching strategies. This proves that preschool teachers do not have a special approach in teaching writing. This situation can create an imbalance in language literacy at the preschool level. The thinking of preschoolers will be more aroused if the teacher is well versed in diversifying teaching methods especially in writing skills (Sharizah et al, 2014).

Therefore, preschool teachers need to master their knowledge in applying HOTs to preschoolers especially in the ability to write Malay Language by mastering knowledge in planning and implementing to ensure that HOTs teaching and learning strategies are implemented effectively.

### **Implementation of HOTs Based on Ministry of Education (MOE) Guidance.**

#### *Planning and Implementation of HOTs in Pedagogy*

An effective HOTs teaching and learning approach needs to be pupil-centered by actively engaging them in teaching and learning through thought-challenging assignments and questions. Therefore, teachers need to create a conducive classroom environment to stimulate students to think. Teachers can also use thinking tools

and questioning techniques to inculcate critical and creative thinking among students. Pedagogy involving thinking students has long been implemented, through programme such as Critical and Creative Thinking Skills (KBKK) implemented in schools in 1994. This programme is continued and strengthened with the introduction of HOTS as recommended in PPPM (2013-2025). The knowledge, skills, values, and attitudes that an individual has play an important role in the process of thinking. All these aspects become the background for reasoning and reflection so that it allows an individual to think a higher level in the context of being able to make decisions, solve problems, innovate, and create. In this process, four high levels of thinking are given focus which is to apply, analyze, evaluate, and create (BPK KPM, 2014).

Therefore, in order to implement HOTS in teaching and learning process, teachers need to do research by referring to the standard of learning stated in the Curriculum and Assessment Standard Document (DSKP). The standard of learning is a statement of what students should know and can do. If the statement refers to the level of HOTS, the teacher needs to perform actions such as referring to the learning standards and identifying the appropriate elements of HOTS to be applied (BPK KPM, 2014). If the verb in learning standards does not characterize HOTS, teachers are encouraged to diversify the content of the lesson by applying HOTS in any part throughout the teaching and learning process. For example, in preschool writing skills, learning standards for BM 3.2.5 is copying simple sentences. If viewed this learning standards does not characterize the element of HOTS that a preschool teacher needs to apply in principle. However, the preschool teacher can insert HOTS during the induction set activities and during the teaching activities including the method of questioning by unearthing the idea of the pupil before the simple sentence copying activity is carried out at the end of the learning.

After the teacher has finished determining the learning standards, teacher needs to plan a teaching and learning by providing a Daily Lesson Plan (RPH) and Learning Aids (BBB). Teachers need to state the objectives of learning explicitly and provide activities that allow students to use HOTS. Teachers also need to provide BBB that can promote student HOTS (BPK KPM, 2014).

At the implementation of teaching and learning stage, teachers need to use appropriate thinking tools with the pupil level by asking questions that can encourage students' HOTS as well as creating a classroom environment that helps students to use HOTS (BPK KPM, 2014). Assessment activities conducted at the end of teaching and learning process should provide questions about HOTS to challenge the students' thinking. In the closing part of teaching and learning, teachers also need to reflect on the effectiveness of teaching and learning in promoting students' HOTS (BPK KPM, 2014).

### *HOTS Teaching and Learning Strategies*

Teachers need to plan and implement HOTS through various teaching and learning strategies that are effective and in line with the objectives of teaching and learning. The teaching and learning strategies that can be used are constructivism, contextualized learning, project-based learning, inquiry, and future studies. The right strategy will help create a classroom environment that allows the pupil to think.

**Constructivism** is an understanding that pupils actively build their own knowledge or concepts based on existing knowledge and experience. Teachers need to ask high-level questions so that pupils can think and use the knowledge received with existing knowledge to build new knowledge. The teacher should encourage pupils to look for answers on their own.

**Contextual learning** is a method of learning that combines content with the daily experience of the individual, society, and the realm of work. This method provides concrete learning that involves hands-on and mind-on activities. In this strategy the pupil is able to apply the existing knowledge in different situations.

**Project-based learning** is a method of mastering knowledge, skills and values through learning experiences based on the assignment of long-term activities between disciplines, student-centered and integrating current issues and practices. This method emphasizes intellectual tasks to explore complex issues. This method promotes the understanding of pupils in which pupils can explore in search of information, make interpretations, make decisions or conclusions.

**Inquiry-based learning** is an approach to finding answers to the questions raised. It involves investigating, exploring, collecting data, drawing conclusions to solve problems, making reflections on the methods used and communicating to share findings about the problem.



**Future studies** that create awareness and stimulate pupils to think about the issues, problems and opportunities that will be faced. This will enable them to look to the future with confidence and optimism such as making predictions about *trends* and changes that will occur based on existing knowledge and information, anticipating the impact or consequences of a phenomenon, *trend*, or future change, and using various resources to control, address and handle changes in order to be of maximum benefit (BPK KPM, 2014).

However, in the context of preschool, there are some additions of special approaches specified in the 2017 revision KSPK. This approach to the teaching and learning strategy is compatible with the age of preschoolers. It includes pupil-centered learning, learning through play, inquiry-based learning, integrated approach, themed approach, project-based learning, master's learning, contextual learning, and learning based on diversity of intelligence.

**Pupil-centered learning** means the active involvement of pupils in a learning activity and they are given responsibility for their own learning. Under this pupil-centered learning, pupils play an important role in the learning process as learning is driven on the interests, impulses and needs of the pupils. Pupils are also given the freedom to choose the type of activity, material, and time during learning. Teachers are facilitators or mentors who guide students to carry out learning activities.

**Learning through play** is a well-planned and structured approach to give students the opportunity to learn in a free, safe, joyful, and meaningful environment. This approach is emphasized in preschool education as play is the nature or natural behavior of the child. Through the process of playing, they will make exploration, discovery, and construction of the experience directly and naturally. Through this approach, the physical, social, cognitive and language development aspects as well as the child's potential can be increased to the maximum level.

**A blended approach** is an approach that combines two or more skills that students need to master at one time. This approach will be able to help students to understand the nature of real life. In real life things are interconnected between each other rather than something separate. Apart from that, teachers should use students' daily experiences in the teaching and learning process. Learning is carried out in a comprehensive and integrated manner and does not separate learning into different disciplines. Apart from the integration between disciplines, this approach also involves the integration between several skills, skills and values, the integration between supports, the integration between activities as well as various methods and techniques. Learning through a blended approach can meet the needs of students who differ in terms of development, interests and abilities as well as differences in terms of background.

**The themed approach** is the management of curriculum and learning through one theme or topic chosen in accordance with the time, place, interests, background, and stage of development of students. The themed teaching approach involves matters such as, the use of one common theme in the field of learning, the selection of themes based on the suitability of the student stage, certain situations, or current events, interrelated with existing experiences and new experiences obtained in a structured and systematic manner. The theme approach is the extension and validation of knowledge and competence and ranking from easy to difficult and from general to more specific.

**Master's learning** is an approach to ensure that all students master the desired learning objectives in a learning before moving on to the next learning. In other words, this approach focuses on the student's mastery of the matter being learned. Through Master's Learning, students are given the opportunity to progress according to their own learning abilities and rates as well as to enhance their level of learning mastery. This approach adheres to the principle that every pupil is able to learn if given the opportunity. This approach requires adequate time allocation as well as a quality teaching and learning process.

### *Thinking Tools*

The use of thinking tools can help students think more organized, systematically, and focused. Examples of thinking tools are such as thinking maps, graph compilers, questions, and highlighting, mind maps, *CoRT* and 6 Thinking Hats.

## **Discussion**

The National Preschool Standard Curriculum (KSPK revision 2017) has clearly emphasized KBAT in preschool education. However, past studies have found that some teachers including preschool teachers are still unclear in implementing HOTs especially in Malay writing skills. Activities carried out in the teaching of writing skills were found to be less encouraging to pupils' thinking skills. This is because the teacher is not clear in implementing it from planning the teaching and learning strategies based on HOTs.

In this regard, in order to achieve the implementation of HOTs in the Malaysian education system, MOE has provided reference materials as a guide to make it easier for teachers to refer before implementing HOTs in the classroom. This reference material has explained in detail how teachers can apply HOTs in teaching and learning activities ranging from the planning and implementation of HOTs in pedagogy to the teaching and learning strategies of HOTs. The description of the importance of the implementation of HOTs and the clearly described HOTs theory can also help teachers in understanding and fully appreciating the goals of HOTs by MOE so that teachers can apply the elements of HOTs in teaching and learning at the maximum level. Therefore, teachers need to take the opportunities of the reference materials provided by MOE to understand more clearly how to apply HOTs in teaching and learning more effectively.

## **Conclusion**

Through the program in PPPM (2013-2025) implemented by MOE, preschool teachers should immediately prepare themselves with all new knowledge, especially ideas about the implementation of HOTs recommended by MOE. Preschool teachers should be aware of the current development of the world of education and constantly update themselves with each of the latest knowledge materials. The result of the efforts of preschool teachers in realizing the MOE's aspiration through PPPM (2013-2025) to implement HOTs in teaching and learning Malay Language writing skills in preschool, it is hoped that it will produce students who are able to think creatively and critically for the initial preparation of education. When HOTs is cultured from the early stages of education, it can indirectly produce high-minded and quality scientific groups who are able to raise an issue well for scientific activities, sort ideas and choose the appropriate words according to the needs at any time in the future.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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**IconSoS 2022: International Conference on Social Science Studies**

## **Modern Information and Communication Technologies - as an Aspect of Improving the Quality of Teaching Biological Sciences: An Example of Teaching Human Anatomy and Physiology**

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**Abstract:** The actual problems of modern pedagogy are the use of information and computer technology in the learning process in the classroom on "Human Anatomy and Physiology", are considered in the work. Today, the Republic of Uzbekistan pays special attention to the use of information and communication technologies in education. Uzbekistan is dynamically integrating into the global information space. Particular attention is paid to providing higher educational institutions with modern ICT tools and computer equipment, in particular, the phased acquisition of computers, servers, wireless network equipment, projectors and other multimedia equipment. The article discusses the features of teaching "Human Anatomy and Physiology" in pedagogical higher educational institutions using information and communication technologies, traditional and didactic lectures, problem-based learning and multimedia teaching aids.

**Keywords:** Information and communication technologies, Competence, Multimedia teaching aids, Pedagogical higher educational institutions

### **Introduction**

Modern society sets the task to the pedagogy of developing personality-relevant qualities of students, and not just transferring knowledge. Humanization of education implies a value attitude to various personal manifestations of students. Knowledge does not act as a goal, but as a means of personal development. The richest possibilities for this are provided by modern information computer technologies. Biological sciences are an important direction in the field of education. "Human Anatomy and Physiology" is considered one of the fundamental disciplines of biology in the education system. The purpose of studying the subject "Human Anatomy and Physiology" in pedagogical higher educational institutions is to study the structure of the human body and formation of such concepts as the relationship between nature and man on the example of the functioning of organs. It should be noted that the subject of Human Anatomy and Physiology is both a science and an art. Human Anatomy and Physiology as an art is a pedagogical skill of the teacher. Pedagogical excellence is a special state. Pedagogical skill is a high level of pedagogical activity; it is possession of pedagogical technique, personality of the teacher, his experience. The main life purpose of a teacher is to become a master of his craft. Pedagogical skill is impossible not to be associated with a professional competence of the teacher. It is competence and skill that can improve the quality of education, which is required from the teacher of the discipline "Human Anatomy and Physiology". However, despite the widespread use of information and communication technologies in practice, one of the main reasons hindering the process of informatization of education is a lack of personnel who own new technologies and are able to include them in their professional activities. Of course, the teacher must possess certain qualities, such as:

- striving for the development and formation of personal creative qualities;
- being able to find, evaluate, select information;
- being able to choose and use multimedia learning tools (websites, presentations, electronic textbooks).

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## **Literature Review**

If we do a comparative analysis of the introduction of information and communication technologies into educational process, we can illustrate several examples. For example, in Israel, modern teacher training forces them to adapt through exploring the means by which teachers are exposed to ITC and multimedia implementation processes. In the process of introducing ICT, in particular multimedia, teachers play a significant role; the reason for this is that teachers can influence knowledge, skills and professional abilities of their students, as well as their beliefs, views and perceptions (Ungar & Baruch 2016). Since 2004, Indonesia has a progressive development of information and communication technologies. On this basis, a new curriculum was created on a new subject of "Informational and communication technologies". To achieve the best result, the government has tried to equip all educational institutions with multimedia (Mahdum et al., 2019). As part of the state program for the development of education of the Republic of Kazakhstan in 2011 - 2020, educational organizations must be equipped with new computers, digital educational resources, necessary hardware and software. All of these initiatives are based on many scientific studies that have shown various benefits of using ICT, in particular multimedia, in education. An example of this is increasing motivation of students, contributing to clearer thinking. In addition, according to researchers, ICT is a tool for better teaching of natural sciences, which once again proves the relevance of the development of multimedia competence of teachers of biology (Suleimen N. 2019). In the Republic of Uzbekistan, educational films and TV shows were considered the first prerequisites for the development of multimedia, created based on visual and laboratory work. These TV shows and educational films were broadcast for students in grades 9-11, and originated from 1995 (Abdurakhmanov & Beknazarova 2011). Today, in the modern sphere of education, within training process of future specialists, it is important to ensure conditions for mastering multimedia technologies. Along with other important areas of education, computerization of education is one of the large-scale innovations that have come in recent decades (Alimkulov & Rustamov 2020).

## **Methodology**

The methodology for applying information and communication technologies should first of all be aimed at the best assimilation of educational material. Psychologists have proven that when conducting classes using information and communication technologies, the right hemisphere of the brain is activated, which is responsible for associative thinking, the birth of new ideas, intuition, psycho-emotional state of the student improves, and his positive emotions are activated (Starikov, 2017). The lesson built on the basis of the application of information and communication technologies is aimed at:

- improving the quality of education;
- improvement of the educational process;
- achievement of a wide range of educational goals;
- solves an urgent problem such as an issue of training highly qualified personnel;(Khamdamova, 2021)

The use of information and communication technologies in the educational process occurs in several directions. One of these areas is multimedia. Today, a modern lesson cannot be imagined without multimedia teaching aids. The use of multimedia tools allows learners to remember firmly the material being studied through involvement of the following senses: seeing, hearing, and remembering. Along with visual teaching aids, multimedia teaching aids make it possible to provide educational material in its entirety. Multimedia teaching aids contribute to the transformation of a traditional lesson into a multimedia lesson (Starikov, 2017). The use of multimedia in education allows educators to:

- solve the problems of humanization of education;
- improve the efficiency of the educational process;
- develop personal qualities, communicative and social abilities of trainees;
- identify the learner as an active subject of cognition;
- take into account subjective experience of the student, his individual characteristics;
- carry out independent educational activities; (Gustyaxina & Popova 2018)

Until today, we are accustomed to classify multimedia teaching aids in a rather simple way as a sound card, word processors, acoustic systems (speakers), a special computer video camera, presentation programs, a microphone, an organizer and others. The listed tools are not difficult to use, their purpose is quite clear, and they do not require special training. But we must not forget that the 21<sup>st</sup> century is the century of information technology (Starikov, 2017). It should be noted that while improving methods of teaching the subject "Human

Anatomy and Physiology" on the basis of modern information and communication technologies, it is advisable to combine individual, group and frontal work with the use of technical teaching aids. Taking into account the above suggestions, we have developed criteria for evaluating the effectiveness of improving methods of teaching the subject "Human Anatomy and Physiology" based on modern information and communication technologies (Table 1).

Table 1. Criteria for evaluating the effectiveness of the use of modern ICT

<i>Reproductive</i>	the student has poorly mastered the educational material, has no idea about the structure of the body and its functions; does not highlight the main points of view; in the answers he makes significant errors that distort the meaning of the material being studied; the student does not have the ability to work independently and the ability to give self-assessment of knowledge; he does not know how to apply knowledge in practice.
<i>Productive</i>	the student's answer indicates that he knows the main provisions of the educational material, but does not know how to explain them; the student has the ability to work independently; he knows how to apply knowledge in practice; allows minor errors in the content and format of the answer.
<i>Research</i>	the student understands the meaning of the main terms of the subject, the contribution of the scientists of Uzbekistan to the development of Anatomy and Physiology; knows how to use self-assessment technologies; justifies his knowledge; student's answer is correct, but there are minor errors in the content and formatting the answer.
<i>Creative</i>	the student knows the history and methods of the subject; fully owns the program material and independently explains provisions under study; capable of independent work and able to give self-assessment of the knowledge; can apply control technologies; the student's answer is correct in terms of content and design.

## Results and Discussion

In order to determine the effectiveness of the use of modern information and communication technologies that ensure the improvement of teaching methods for the subject "Human Anatomy and Physiology", students of four pedagogical higher educational institutions were selected: 1) Tashkent State Pedagogical University named after Nizami; 2) Tashkent Regional Chirchik State Pedagogical Institute; 3) Kokand State Pedagogical Institute; 4) Navoi State Pedagogical Institute. As part of the study, we conducted testing and questioning among 387 students of "Biology" specialty (Table 2).

Table 2. Results of testing students at universities to determine the level of knowledge

University	Group	Number of students	before the experiment				after experiment			
			5 high level	4 middle level	3 low level	2 the lowest level	5 high level	4 middle level	3 low level	2 the lowest level
1 NSPI	control	42	1	13	23	5	3	14	23	2
	experimental	40	4	12	20	4	5	15	20	0
2 ChSPI	control	46	2	15	23	6	2	15	26	3
	experimental	47	2	14	25	6	5	19	23	0
3 KSPI	control	48	2	9	34	3	4	6	34	4
	experimental	43	2	13	23	5	8	26	8	1
4 TSPU	control	57	9	6	41	1	7	9	40	1
	experimental	64	6	6	50	2	13	37	14	0
5 Total	control	193	14	43	121	15	16	44	123	10
	experimental	194	14	45	118	17	31	97	65	1

The results of testing students at universities obtained on the basis of the developed assessment criteria are reflected in the following figure (Figure 1).

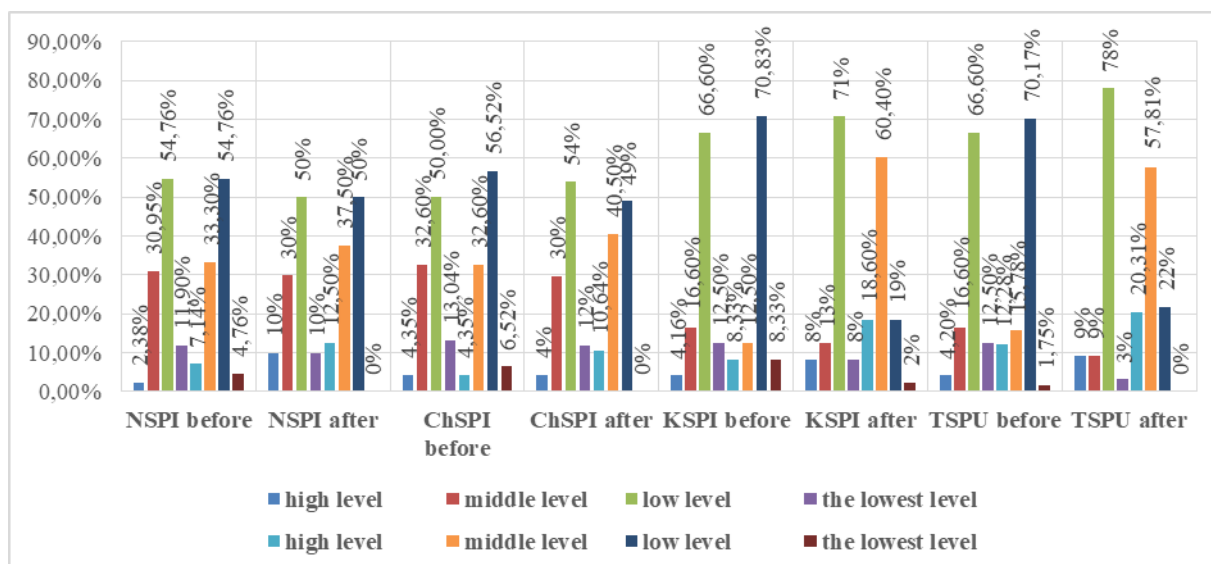


Figure 1. The results of testing students in universities to determine the level of knowledge (in percentage)

## Recommendations and Conclusion

Based on the results of the study, methodological recommendations were developed to improve the methods of teaching the subject "Human Anatomy and Physiology" based on information and communication technologies. Recommendations are as following:

- to improve the quality of education and the interest of future biologists constantly improving teaching methods for the subject "Human Anatomy and Physiology" based on the widespread use of modern, innovative, information and communication technologies;
- for the successful assimilation of the subject "Human Anatomy and Physiology" in practical work, actively use methods of multimedia technologies in the process of traditional and distance learning;
- in order to improve the quality of education, there is a necessity for creating a single interactive portal of electronic resources and systematic monitoring of its use by teachers, since at present, biology teachers in higher educational institutions have limited access to electronic resources for various social reasons.

## Scientific Ethics Declaration

The author declares that the scientific ethical and legal responsibility of this article published in EPSS journal belongs to the author.

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**IConSoS 2022: International Conference on Social Science Studies**

## **Competency Development through the Implementation of Professional Learning Community among Accounting Teachers**

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**Abstract:** The selection of Professional Learning Community (PLC) as one of the mediums to improve practice is based on the trend and development of practice in developing countries. In PLC, teachers work with a sense of openness, share their experiences, ideas and expertise, and engage in a continuous assessment process that can foster deep team learning and critical reflection. The aim of this study is to investigate the implementation of PLC in improving the competencies of Accounting teachers. A total of seven Accounting teachers teaching Grades 4 and 5 in seven schools in southern Malaysia were selected as participants using purposive sampling. The aim of this study is to investigate the competencies building through the implementation of PLC among Accounting teachers. To achieve this purpose, a qualitative design was used as the guiding framework. Therefore, three data collection techniques were used to obtain rich data, namely semi-structured interview techniques, document analysis and also audio and visual materials analysis. The validity and reliability of the findings of this study were ensured through triangulation, member checks, peer review, audit trail and prolonged engagement. The findings of the study are categorised into 9 themes, namely mastering subject matter, instructional planning, instructional delivery, instructional evaluation, technology application, classroom management, facilitate student, motivate student, and student career development.

**Keywords:** Professional Learning Community, Teachers, School, Competency

### **Introduction**

Malaysia has evolved in the economic, social, cultural and educational spheres. This means that the education system in Malaysia has also changed and taken on challenges related to the country's potential for progress. Moreover, at a time when Covid 19 cases are on the rise in Malaysia in 2020, the government has issued Movement Control Orders (MCO) across the country. This is causing schools and universities to be closed (Nurfadilla et al., 2020). In an effort to curb the spread of the pandemic, the Malaysian Ministry of Education (MOE) has therefore decided to replace face-to-face teaching and learning with home-based teaching and learning (PdPR) or online teaching and learning. Therefore, all stakeholders, including teachers, need to ensure that teaching and assessment is resumed and learning objectives are maintained.

One of the major issues in Malaysian education today is technical and vocational education or better known as TVET (Mohamed Nazul, 2019). In order to open up the same important technical pathways as the academic pathways at the tertiary level of education, there is a need to increase opportunities, student recruitment and

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quality improvement of the TVET curriculum. This is because TVET offers equivalent career prospects to academic education and is a flexible general education option, as is the case in most developed countries (Mohd Jalil et al., 2015). Vocational education is not only increasing in terms of skills, but also encourages the community to venture into vocational education and plays an important role in equipping students with the skills needed in the labour market and economic globalisation (Nur Iwani & Mohammad Hisyam, 2012). Therefore, the problem of school dropout can be reduced by introducing vocational education.

One of the subjects in TVET is Accounting. In Malaysia, the history of accounting education began in 1935 at the Day School of Commerce in Penang. At that time, accounting was one of the components of the commerce subject offered at the institution. Entrepreneurship education, including accounting as a subject, has also been included in the technical and vocational education curriculum at the secondary level to meet the growing demand for skilled manpower (Asnul Dahar et al., 2013).

In line with the curriculum changes, Accounting subject aims to produce individuals who possess accounting skills, critical and reflective thinking, responsibility, good communication skills through a meaningful learning approach, ethical work culture, knowledge of technological information, cultivation of lifelong learning and integration of accounting theory and practise expressed through learning objectives (Bahagian Pendidikan Guru, 2011).

Accounting is one of the elective subjects in the Sijil Pelajaran Malaysia (SPM) for fourth and fifth grade literature students (Lim & Goh, 2018). The accounting syllabus is based on aspects of accounting theory and practise and is divided into 15 learning topics. However, statistics show that students' performance in the SPM accounting subject examination in 2019 has declined in terms of the subject's average mark and pass percentage (Lembaga Peperiksaan Malaysia, 2019). According to Tuan Noormahanisa & Norasmah (2020), apart from the students' background, the teacher's teaching approach is also a factor in the decline of unsatisfactory performance in the accounting subject.

Moreover, according to Losius Goliong et al., (2016), the quality of education and the authority of teachers in schools are still questioned by the society. This is because teachers fail to effectively improve academic performance and apply relevant values to produce students who demonstrate leadership, mature thinking, pure behaviour, creative skills and communication skills. In addition, teachers also lack competence in implementing High Order Thinking Skills (HOTS) in students (Norfariza & Nur Fadhillah, 2018).

Professional Learning Community (PLC) is a teacher-led culture of partnership that critically engages with practical testing to improve student outcomes (Aydin et al., 2015). PLC is a promising strategy in school improvement efforts (Harris & Jones, 2010). PLC is seen as a way to drive teachers towards professional development, thereby supporting student improvement (Meijlof, 2018). According to DuFour et al., (2016), the PLC process is not a programme and cannot be implemented by anyone except the staff of an institution itself. The PLC process also cannot be bought and this process is ongoing and has a profound impact on the professional aspect. According to Mindich & Lieberman (2012), successful PLCs consist of teachers who have the autonomy to choose their own learning outcomes and have undergone training in collaboration. PLC is one of the school improvement practises that involves supporting all communities inside and outside the school to overcome challenges in improving student achievement (Chong et al., 2016). PLC is created through the adoption of cultural competencies by each and every member of an institution. Learning culture has a great impact on the community because it can make comparisons in the methods of instruction and mastery, management and leadership (Zuraidah & Muhammad Faizal, 2014).

In Malaysia, the implementation of the PLC programme was initiated by the Department of Teacher Education, Ministry of Education in 2011 by implementing strategic lesson plans in 289 low-performing schools. This effort was then continued in 2012 and implemented in 107 schools (Bahagian Pendidikan Guru, 2014). Implementation now includes all schools nationwide. To support the implementation of PLC, the Malaysian Ministry of Education (2015) approved PLC in the Malaysian Education Development Action Plan 2013-2025 as an instructional reform to promote collaboration among educators to improve concern and practise (Saad et al., 2017).

## **Literature Review**

### **Professional Learning Community (PLC)**

Professional Learning Community (PLC) refers to teachers who work together with great commitment to achieve better results, especially in action research and collective enquiry activities (DuFour, 2016). Therefore, it can be explained that the PLC is a community that forms a culture that shows that all school members learn and become students. The formation of this knowledge culture shows the PLC as a community of school members who practise lifelong learning. The presence of this culture can develop an internal culture that aims to encourage teachers to become experts in their respective fields.

A professional learning community should have and practice a number of specific criteria, each of these criteria supporting and connecting the community. This is because each KPP model has its own criteria. There are many KPP criteria presented by researchers to be implemented in schools and most of them are adapted from the five disciplines of learning organization introduced by Senge, (1990).

Since 1990 to 2004, various PLC models have been developed. Many educational practitioners, researchers and western scholars have developed their own models for PLC to be implemented in selected schools. They include Peter Senge (1990), Kruse et al., (1995), Hord (1997), Lambert (1998), Thiessen & Anderson (1999), DuFour (2004) and others. Although the models of PLC by Senge (1990), Hord (1997) and DuFour (2004) are often used as basic principles for the formation of professional learning communities, the models of professional learning communities presented by other researchers cannot be ignored.

While there are differences in the use of terminology, elements and dimensions, in principle these scholars have the same goal, which is to create a learning organisation and encourage its members to continue learning in order to enhance the development of personal professionalism and thus realise the goals of the organisation.

#### **PLC Model by Kruse, Louis & Bryk (1995)**

The PLC model of Kruse et al., (1995) was selected because the PLC module presented by the Teacher Education Department of the Malaysian Ministry of Education uses this model as the basis for implementing PLC in Malaysian schools. Kruse et al (1995) outlined five PLC criteria: Reflective Dialogue, De-Privatization of Practice, Collective Focus on Student Learning, Collaboration and Shared Norms and Values.

Reflective dialogue occurs when people talk about specific situations and challenges they face. They then collectively develop a set of norms, beliefs and values that form the basis for their actions. Community members can use these discussions to critique themselves and the institutions they work for. Through this critique, they can focus on the subject and how they teach it to students. For example, they focus on general teaching strategies, student learning and the development of that learning, and then on the state of the school environment, including issues of equity and justice.

In addition to reflective dialogue, the next PLC criterion is de-privatization of practice (Kruse et al., 1995). By de-privatization of practice, teachers share, observe and study each other's teaching methods and philosophies. For example, methods such as collegial consultation between teachers or career counsellors are used. By sharing the practise of personalisation, teachers can become closer as they learn new ways to study the activities they do together.

According to Kruse et al. (1995), a collective focus on student learning is also a PLC criterion. This means that teachers focus on student learning. Teachers believe that students have the potential to achieve optimal learning outcomes despite the many obstacles they may face outside of school. In a strong professional community, the focus on student learning is implemented based on the sense of responsibility of the teachers themselves, not on instructions from the school administration.

Another PLC criterion is collaborative practise. A professional community that encourages teachers to collaboratively develop materials and activities that improve instruction, curriculum and assessment for students, the development of a shared understanding of students, curriculum and instructional guidelines, and the development of new and different approaches to the development of teachers themselves.

Finally, shared norms and values are the foundation of the PLC, as Kruse et al. (1995) put it. Teachers participate in PLC through their words and actions, affirming the values of beliefs built around critical educational issues and supporting their collective focus on student learning. These values can guide children and their capacity to learn, using time and space in a school environment appropriate to the role of parents, teachers and administrators. For example, teachers ask students who are not attending class for tutoring after school

hours. This shows that teachers value the potential of their students and take responsibility for providing extra help to students who are failing by creating school policies to manage the system around this extra work time. Based on this PLC Model by Kruse et al., (1995) the Teacher Education Division has detailed it in the PLC Module as below:

Table 1. Strategies for developing PLC

	Critical Elements of PLC	PLC Strategies
1	Reflective Dialogue	Using Discussion Protocols Book Clubs Study Groups Video Critiques of Teaching Moments
2	De-Privatization of Practice	Learning Walks Peer Coaching/ Instructional Coaches Lesson Study Teacher Sharing Sessions
3	Collective Focus on Student Learning	Data Analysis Curriculum Mapping Common Assessments Critical Friends Groups
4	Collaboration	Horizontal and Vertical Teams Teacher Induction / Mentoring Interdisciplinary Units and Projects Problem Solving Groups
5	Shared Norms and Values	Vision Activity Guiding Principles Value Activities Common Rituals and Strategies

### **TVET Teacher Professional Competency Framework**

According to the article by Dayangku et al., (2020) who developed a framework for TVET teachers' professional competence in Industry 4.0, technical skills, non-technical skills, personal attributes, motives and and also mental and physical fitness are the five constructs that TVET teachers need in Industry 4.0. This study focuses on technical skills, which include mastering subject matter, instructional planning, instructional delivery, instructional evaluation, technology application, classroom management, facilitate student, motivate student, and student career development.

TVET teachers need to prove to their pupils that they are knowledgeable and skilled. TVET teachers must comprehend the rapidly evolving technologies employed in the sector and update the curriculum and syllabus used in their individual institutions to satisfy the needs of business. To support and facilitate students at different stages of the learning process, TVET teachers must keep up with the latest developments in theory, practise, and industry.

Before choosing the best learning resources and tools, TVET teachers should be able to evaluate the technology resources that are already available. In order to maximise learning, they must arrange their curriculum materials, plan their lesson plans, and build their curriculum accordingly. However, pupils today use smart devices from a young age, which presents challenges for teachers. Therefore, it is crucial that TVET teachers organise and get them ready with effective teaching techniques.

To address the educational needs of this age, TVET teachers must also use e-learning to incorporate digital instructional content into the classroom and personalise learning for each student. TVET teachers must carry out their lesson plans to offer students information and practical skills in the era of industry 4.0. To interest students in the learning process, TVET teachers need to possess strong presentation abilities. To maximise learning and foster the development of advanced knowledge and skills in the age of industry 4.0, TVET teachers must utilise the proper pedagogy approach to correspond with the available technology and employ various learning techniques for various instructional contexts.

In order to connect student performance to learning outcomes, TVET teachers must also be able to organise, implement, and select assessment procedures. They should be able to conduct virtual evaluations and use e-

portfolio technology as a tool for evaluation in this digital era. To create an environment that is conducive to learning, TVET teachers should be able to arrange and manage their classrooms. In order to plan curriculum and learning activities for efficient teaching and learning processes, they also need interpersonal and time management abilities.

Additionally, one of the sub-constructs of technical competence explored in this study includes the application of technology. The ability of instructors to utilise the use of new technologies in the educational process is highly crucial in the growth of this digital era. TVET teachers must be proficient with digital tools and software programmes for education technology in order to properly design, carry out, and assess their lessons.

In order to give students the kind of feedback, they need and use technology for supplementary learning activities, TVET teachers must also be aware of their students' qualities. Teachers today must engage pupils to learn independently by inspiring them to use the tools for learning that are available in imaginative and inventive ways. The effectiveness of learning is determined by how TVET teachers run their lessons, assist, and inspire their pupils.

Finally, teachers of TVET must also help their students comprehend their options and offer career guidance. The goal of vocational education is to create skilled, competitive workers for the workplace. In order to make the transition from school to the job easier, TVET teachers are supposed to provide their pupils with appropriate industry expertise.

## **Problem Statement**

The Ministry of Education Malaysia aims to create a culture of professional excellence exemplified by colleagues, namely teachers encourage, guide each other, ensure that colleagues are responsible for meeting professional standards and sharing best practices. However, the implementation of PLC in schools is considered something that is difficult for teachers because they are burdened with existing tasks especially managing classes and students, in fact, instructions from administrators on an ad hoc basis (Chong et al., 2018). This is in line with the study of Saad et al., (2017) who showed that teachers' acceptance of PLC is still in doubt due to time constraints to implement the new concept of PLC in schools. In fact, PLC is also said to be carried out only in core subjects such as Mathematics, Science, English and History (Dima Mazlina, 2015).

Due to the lack of understanding and appreciation among school people related to PLC due to the constraints stated, it is feared that this PLC strategy does not reach the targeted level (Fullan, 2006). In fact, schools place less emphasis on this initiative because of the perception that PLC is just a new innovation like other innovations that do not need to be implemented if other new innovations emerge.

## **Research Purpose**

There is a purpose of this study to be achieved which is to explore the implementation of the PLC among teachers of Accounting. Based on the purpose of the study to be achieved, there are research questions that will be answered through the implementation of this study which is how does PLC help improve the competence of Accounting teachers?

## **Method**

This section also describes the procedure used by the researcher to carry out this study. This section will describe aspects of research methods that include research design, data collection and sampling. This is given attention to answer the questions of how does PLC help improve the competence of Accounting teachers?

## **Research Design**

The philosophical worldview of a research usually determines the methodology used in that research. The philosophical worldview conceptualizes how knowledge is produced and created, which is epistemology, influencing the approach used in understanding the world and how one understands it. Therefore, in this

research the researcher has adopted the world view of constructivism. Constructivism is seen as a theory of learning or meaning that provides justification about the characteristics of cognitive content and the process of how individuals learn. Real purpose is only created based on the individual's previous experience and basic knowledge. Individuals develop their own new goals through interactions based on their belief systems, cognitive, situational, and life tasks they face (Ultanir, 2012). In other words, the purpose of acquiring this knowledge focuses on the internal cognitive process of the individual. Therefore, constructivist researchers conduct their studies in the "field" where the participants live and work in order to gain an understanding of what the participants are saying (Creswell, 2018).

After examining the research questions based on the literature highlights, the researcher has chosen to use qualitative research methods based on phenomenology as a research method. This chosen method is very suitable for literature review and research questions because the main purpose of the study is to subjectively deepen PLC activities to show the extent to which learning takes place in PLC can contribute to meaningful professional and personal growth among Accounting teachers.

Through the phenomenological approach used, the researcher was able to dig into the depth of the findings and enrich the study information from the experience of accounting teachers. Based on the discussion related to qualitative research and phenomenology approach, the researcher determined the exploratory study of learning practices in PLC implementation among accounting teachers by using qualitative case study research. According to Creswell (2018), a phenomenological study describes the shared significance of numerous people's individual lived interpretations of a term or reality.

### **Data Collection**

In this study, the items studied are the approaches, methods and processes of PLC implementation used among Accounting teachers and the effect of PLC towards Accounting teachers' competency. To obtain in-depth data on the PLC process among these Accounting teachers, the data collection technique used was semi-structured interviews with participants and also document, audio and visual material analysis. Analysis of these data allows an in-depth description and overview of the implementation of PLC among Accounting teachers.

### **Selection of Participants**

A total of 7 Accounting teachers will provide the rich data needed by the researcher in the researcher's effort to complete the study. All participants were involved on a voluntary basis after consultation with the administrator and the study participants themselves. Through interview transcripts and analysis of documents such as lesson plans and PLC reports, all participants will be identified their educational background and services. All participants were also ensured to have teaching experience of not less than 3 years of experience as an educator.

### **Reliability and Validity**

According to reliability and validity aspect, this article will look in more detail at the unique components of qualitative research in relation to qualitative rigor. These are: truth-value (credibility); applicability (transferability); consistency (dependability); and neutrality (confirmability).

In an article written by Thomas & Magilvy (2011), to prove credibility, researchers need to study individual transcripts by looking for similarities among participants or vice versa. This allows others to identify the experiences found in the study through the interpretation of the participants' experiences. A study is considered reliable when presenting an interpretation of the experience that can be understood by the participants. In this study, the strategies used by the researcher to build credibility are peer review, member checks, and research diary.

Transferability refers to the ability to transfer research results or methods from one group to another and this element is external validity (Thomas & Magilvy, 2011). One way to establish transferability is to provide a solid picture of the population being studied by describing the demographics and geographic boundaries of the study. The ways in which transferability aspects can be applied by researchers is by using the same data collection method with different demographic groups or geographic locations as well as the use of research diaries.

Additionally, dependability occurs when other researchers can follow the trail of results used by the researcher. This track will be achieved by describing the purpose of the study, discussing the justification of the participants selected for this study, describing the technique and period of data collection, explaining how the data was formed for analysis, discussing the interpretation and presentation of the findings and finally explaining the techniques used to determine the credibility of the data. Strategies used by researchers to establish reliability include research diary.

Confirmability occurs after credibility, transferability and reliability have been determined (Thomas & Magilvy, 2011). Qualitative research must be reflective and maintain awareness and openness to the research process and research findings. The researcher needs a critical attitude towards the researcher by considering how the researcher's perception affects the research. Techniques used by the researcher to achieve a level of validation include preparing a research diary. The researcher will make notes about feelings, biases and personal views immediately after the interview. In addition, the researcher followed the flow of the interview naturally by not determining the direction of the interview. The researcher will ask for clarification when necessary.

## **Results**

This section describes the results of the study that have been obtained through the data collection process. This study aims to understand the implementation of PLC in the aspect of competency development among accounting teachers. To answer the question of this study, a total of 7 teachers of Accounting were selected and they agreed to volunteer to help the researcher obtain information for the purpose of completing this study. In this case, the researcher is responsible for protecting the security of the personal information of the participants by using non-real names.

Technical competencies listed in this study are explicitly related to TVET teacher roles in the instructional and learning process in industry 4.0 era (Dayangku Suraya et al., 2020). The sub-constructs for technical competencies are in the aspect of mastering the subject matter, instructional planning, instructional delivery, instructional evaluation, classroom management, motivating and facilitating student, student career development, and technology application.

### **Mastering Subject Matter**

Through the PLC activities conducted, all teachers gave their views to improve the level of knowledge of their subject content. Among the PLC strategies that help teachers in improving their knowledge related to the subject of Accounting are Teacher Sharing Sessions and Peer Coaching.

*"That's how it is. We use certain acronyms to make an interesting story. Then the application students. Then they can remember the format for the financial statements. That's also the PLC sharing from friends."*

(Forth participant)

Furthermore, the sixth participant also had the same views as follows.

*"It's positive. Because PLC really wants to help. Collaborative help each other. Like me, a young teacher..that's it..that's it..sometimes this young teacher too..experience..he's direct from university and continues to be a teacher, right? So, like me, I used to work. So I'm easier..the content is a bit strong for me. Insya Allah. That thing is very positive. That's good"*

(Sixth participant)

### **Instructional Planning**

PLC activities assist Accounting teachers in lesson planning through the sharing between teachers of relevant information on the types of teaching materials to be used in the classroom. In fact, there are some teachers who share the use of such materials.

*"It helps. Sometimes the reason may be in terms of material. Ok. In terms of materials. Sometimes we don't know when we want to use something like that. What kind of example that day, like ... I don't remember. How do*

*we use mahjong paper? If it is not suitable, we use manila card. Like that. That way we can share. Actually, if this material is not suitable, we can use this material.”*

(Second participant)

In addition, through teacher sharing activities sessions and lesson study, teachers plan together the activities that will be carried out in their classes as stated by the informant below:

*“We do each chapter together. To me that thing helps too. At least we get an idea of what activities we want to do every time we teach, what other activities we want to do every time we have to think. So, when we want to make it together, we did it through a PLC with account teachers from other schools.”*

(Seventh participant)

### **Instructional Delivery**

In teaching delivery, especially in this time of pandemic, all teachers agree that PLC are very important in improving their competencies in ensuring their effective delivery to students as stated by the informants below:

*“Yes, again now in this pandemic, we need various methods. Need various partnerships between teachers to improve. We can't just use the same momentum. So now aaa.. I see that last week there was aaa.. sharing about what aaa ICT uses.”*

(First participant)

*“But there was one method after PLC, we all agreed to use the method at that time.”*

(Fifth participant)

### **Instructional Evaluation**

Through the learning walk which is one of the PLC strategies can help teachers, especially Accounting teachers to re-evaluate their effectiveness in teaching as stated by the informants below:

*“That is getting better now. The teachers I once watched. They are getting better. They know how to evaluate student correctly. And then they also know about how to evaluate themselves.”*

(Sixth participant)

This was also agreed to by seventh participant.

*“This assessment can also be done in terms of monitoring. Monitoring from administrators. Indeed, we will do the monitoring ... see what SKPMG has. Ever heard of it? SKPMG is standard 4. Where we will enter we will see that we have a way of teaching.”*

(Seventh participant)

### **Technology Application**

Competence in terms of technology application is most helped by the implementation of PLC as the use of technology is very much needed in teaching nowadays. This was agreed by the informants below:

*“The media teacher who gave such an example earlier, I said please give us guidance on what to do with Google, Google Meet. How to do Zoom. Lots of methods right. How to ask a question about Google Form? All sorts of things. Many applications he guided us. So from there, the teacher's competence will increase.”*

(Forth participant)

### **Classroom Management**

In PLC there is a strategy that is very helpful for teachers in managing their students which is data analysis. Through data analysis, teachers can categorize their students so that they can be given guidance according to the appropriate level of their performance. This is as stated by the informants below:



*“Indeed, we always do. After all, now we practice 21st Century Learning (PAK21) where children are placed in groups in the classroom. Although The Ministry wants PAK21 to mean that all children are equal, but we still practice. But it doesn't feel so bad that we're worse, no.”*

(Third participant)

*“Several committees, namely the Accounting Committee, Agriculture Committee, SRT Committee and Business Committee implement a reward system for students that are consistent and committed in PDPR. Students receive gifts in the form of food, ‘top up’ as motivation and encouragement. This program is called ‘real reward’.”*

(PLC Report)

### **Facilitating Student**

Through data analysis as mentioned earlier, this PLC activity assists teachers in guiding their students, as stated by the informants below:

*“Here, we're doing item analysis. For instance many students cannot answer question number 1. Why? At least we can know what it means like an incomplete record. He or she is a weak student. Incomplete records are no longer proficient. So we will do more revision for such incomplete records.”*

(Second participant)

### **Motivating Student**

In motivating students, most of the teachers interviewed agreed that PLC helped them indirectly in motivating their students, as stated by the informants below:

*“It means if we make a PLC, we are more confident right. Oh, apparently I want to teach you like this. We will use the method. So the meaning of the students is not the same as what we mean, sometimes the teacher has to be sure. Sure. So, the students are confident with us.”*

(First participant)

*“Because PLC is among our teachers. Collaborative among teachers. So, it is not direct to us..from PLC direct to the students. Motivating the student earlier, right? It does not motivate students directly. But with us talk about being a quality teacher.”*

(Sixth participant)

### **Student Career Development**

Like the practice of motivating students, guiding students in choosing their work in the future can also be helped by PLC activities indirectly, for example Accounting Principles teachers can collaborate with counselor in disclosing work to students. This is as stated by the informant below:

*“From the beginning of the time he or she in Form 4, we have already given the exposure.”*

(Seventh participant)

### **Discussion**

In the education profession, teacher competence is an important foundation (Abdul Razif et al., 2020). Therefore, the level of teacher competence determines the effectiveness of teaching and learning in the classroom. Referring to the article by Dayangku Suraya et al. (2020) this study focuses on technical competence which consists of mastering subject matter, instructional planning, instructional delivery, instructional evaluation, technology application, classroom management, facilitate student, motivate student, and student career development.

In this study, teachers constantly update their knowledge through teacher sharing sessions, there are teachers who, before they became teachers, worked in non-educational sectors such as the banking sector and accounting offices. Their work experience can be applied in their teaching in addition to theoretical sciences.

The Accounting teachers also need to evaluate existing technology resources before choosing appropriate learning tools during the teaching planning process. Teachers need to implement their lesson plans effectively in conveying knowledge to students. In this study, the PLC strategy that can help teachers in planning teaching and learning is learning to use Daily Lesson Plans and learning walk.

In addition, teachers need presentation skills during the learning process. Accounting teachers need to use appropriate pedagogy to match available technology and use different learning strategies for different learning situations to maximize the effectiveness of learning in line with the era of industry 4.0. In this study, the PLC strategy that can help improve teaching delivery competence is the learning trail.

TVET teachers should also be able to manage and organize their classrooms to create conducive learning. TVET teachers also need to understand the characteristics of their students in order to provide appropriate feedback to meet the needs of students and be able to utilize technology for additional learning activities. The findings of this study found that through PLC activities which are teacher sharing sessions and problem-solving groups, Accounting teachers become more creative in managing students. They put their students in special groups and guidance is given according to the suitability of those groups.

In this digital era, TVET teachers, especially Accounting teachers should be able to conduct virtual assessments by using technology such as e-portfolio as an assessment instrument. In this study, Accounting teachers always share their information and knowledge related to how they evaluate themselves and their students through PLC strategies such as learning walk, data analysis and teacher sharing sessions.

The application of technology is also considered as one of the important elements in the competencies discussed in this study. In the development of the digital era, the ability of teachers to take advantage of the use of new technology in the teaching process is very important. TVET teachers are required to be digitally literate and able to use educational technology tools and software such as applications that help them plan, deliver and evaluate their teaching process effectively. As found in this study, through the PLC strategy which is teacher sharing sessions, Accounting teachers get a lot of sharing either among themselves or from teachers of other subjects or teachers of other schools related to technology applications related to Accounting Principles subject. This sharing became more frequent when the Covid 19 pandemic hit the country.

To motivate students to learn independently, teachers need to encourage students to be creative and innovative with learning resources which is in line with current technological developments. Through the way TVET teachers manage classes, teachers will facilitate and motivate their students to determine the success of student learning. This matter was agreed by the Accounting teachers in this study, which is that they think that if the teachers know how to teach in a way that attracts interest and supports their students to be creative, their students will be motivated.

Finally, they also need to provide understanding and career advice for students. Vocational education aims to produce skilled and competitive workers for the industrial environment. Therefore, TVET teachers need to equip their students with relevant industry knowledge to ease the transition from school to the workplace. In this study, Accounting teachers collaborated with school counselor and external agencies to hold programs that reveal career opportunities to Accounting students.

## **Conclusion**

PLC is a good way to enhance the self-quality of teachers by gathering a group of them together for collaboration. Many local and international scholars have concluded that there is a correlation between PLC and academic achievement. Some authors have stated that where there is a good teaching and learning process, there will be a successful PLC. Nonetheless, PLC's success is heavily reliant on the support of a variety of parties, particularly school leaders and other colleagues. Without their participation in PLC practise, the PLC would fail. PLC in a school could not be sustained over time and would be a seasonal practise. Nonetheless, PLC's success is heavily reliant on the support of a variety of parties, particularly school leaders and other colleagues. Without their participation in PLC practise, the PLC would fail. PLC in a school could not be sustained over time and

would be a seasonal practise. As a result, for academic excellence and school success, school leaders and teachers should collaborate equally in implementing PLC in the classroom.

## **Recommendations**

Future studies need to emphasize the use of various PLC strategies as an effort to improve teachers' competency in teaching Accounting. In this study, the participants only used a few strategies from the entire PLC strategy as a vehicle to guide teachers to learn how to teach effectively. Future studies should also examine other strategies that help teachers gain knowledge and improve teaching methods such as reflective dialogue, shared norms and values and so on. Since this study is still new in the implementation of PLC to improve the teaching skills of Accounting teachers, future studies should be more thorough by examining the variety of strategies used for more in-depth reference.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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## **The Effect of Realistic Mathematics Education Activities Applied in Secondary School 7th Grade Mathematics Education on the Development of Life Skills**

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**Abstract:** The aim of this research is to investigate the effect of teaching the Circle and Circular Region subject in the secondary school 7th grade curriculum by applying Realistic Mathematics Education activities on the development of students' life skills. The sample of this study consists of 46 students studying in the 7th grade of a secondary school in the Aegean Region. In this experimental research, a quasi-experimental design with pretest-posttest control group was used. In the study, it is planned to teach the lessons according to the teaching method in the curriculum in the classroom that constitutes the experimental group, by applying the Realistic Mathematics Education activities on the subject of Circle and Circular Region. As a data collection tool, real life skills scale was applied to both groups as pre-test and post-test. The obtained data were analyzed with non-parametric test techniques. According to the findings obtained as a result of the analysis, it was determined that mathematics teaching with the Realistic Mathematics Education approach was more effective in the development of life skills than the traditional approach and mathematics teaching.

**Keywords:** Realistic Mathematics Education, Teaching Mathematics, Life Skills

### **Introduction**

Today, with the globalization of the world, developments in science and technology affect all societies. It has become necessary for societies to raise individuals with the qualifications required by the conditions in order to adapt to the rapidly developing and changing world. This requirement has included the concept of 21st century skills into our lives. 21st century skills; different institutions such as Assessment and Teaching of 21st Century Skills (ATCS), Partnership for 21st Century Learning (P21), Organization for Economic Co-operation and Development (OECD), European Union (EU), International Society for Technology in Education (ISTE) classified in different ways. Common skills such as creative thinking, problem solving, communication and creative thinking included in the education system overlap with P21 skills. P21 skills, learning and renewal skills; life and career skills; information, media and technology skills are examined in three sub-dimensions.

Life skills are defined by WHO (The World Health Organization [WHO], 1997) as adaptive, positive behavioral abilities that enable individuals to meet their daily needs and overcome the difficulties they face. WHO has established ten basic skill sets that will form the basis of many cultures and should be found in every healthy individual. These skills are; decision making skills, problem solving skills, empathy skills, self-awareness skills, coping skills, communication skills, coping with stress skills, creative thinking skills and critical thinking skills. These life skills are again classified by WHO as five basic life skills: decision making and problem solving, creative and critical thinking, communication and interpersonal communication, self-awareness and empathy, and coping with stress and emotions. Gulhane (2014) states that these skills are the skills that individuals apply to cope with the problems they frequently encounter in their daily life and gain through teaching.

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Raising individuals suitable for the changing, developing and globalizing world order in the 21st century is undoubtedly possible by adapting the education system to this. Accordingly, in recent years, traditional methods in education have been abandoned and new approaches have begun to be adopted. These approaches adopt the realization of learning through experiences rather than direct acquisition of knowledge. New approaches have affected mathematics education as well as many educational disciplines. Now, memorizing the rules and formulas for mathematics education in the classrooms has been put aside, and activities that develop the individual's reasoning, problem solving, communication, cooperation, etc. skills and which are based on associating mathematics with real life have begun to be adopted. All these have taken place in the education system with the approach of Realistic Mathematics Education.

Realistic Mathematics Education (RME) is a mathematics teaching approach that was put forward by Hans Freudenthal, a mathematician and educator in the Netherlands, and developed by the Freudenthal Institute (Akyüz, 2010). According to the Realistic Mathematics Education (RME) approach, mathematics is expressed as a human activity (Freudenthal, 1977; cited by Van den Heuvel –Panhuizen). In this approach, with the presentation of mathematics to the student in relation to daily life, the student takes an active part in this process. According to Freudenthal, mathematics started with real life problems throughout history and he claimed that these real life problems took the form of mathematics and reached formal mathematics. He called this process “mathematization”. There are two aspects that make the mathematization process important. First, mathematics is not just the job of mathematicians; it is the job of every individual. The second aspect is the idea of rediscovery. In this approach, the student must reach the information himself throughout the process, and the last step he reaches should be formal mathematics (Altun, 2006; Treffers, 1987). Freudenthal divided the mathematization process into horizontal mathematization and vertical mathematization. Horizontal mathematization is the first step. In this step, there is a transition from an environmental problem situation to symbols. The student uses this process to solve a real-life problem and can convey the real-life problem as a known mathematical problem. Vertical mathematization is a step forward and reorganization within the mathematical system. In this process, there is access to formulas from symbols. The student can explain the relationships between symbols, improve models, use different models, and obtain a mathematical formula (Zulkardi, 2002).

Learning mathematics is important in terms of gaining basic concepts and skills, as well as the necessity of using it in real life. The importance of understanding mathematics and using it in appropriate situations in our daily lives is increasing rapidly (MEB, 2009). Realistic Mathematics Education activities draw attention in terms of gaining life skills in terms of accessing information based on real life situations. In this context, it is thought that the implementation of Realistic Mathematics Education activities in mathematics teaching is important for the individual to gain life skills.

Innovations provided by the development of science and technology have accelerated the globalization of our world. Globalization affects countries in every field. One of these areas is education. Our living conditions, which are in constant development and change, require the education system to be shaped accordingly. It is seen that the students who grow up with the education system in which traditional methods are used are lacking in terms of life skills in preparing for life. The age we live in requires a system in which the student takes an active role in the education system and accesses information through their own experiences. However, an individual who grows up in this system is expected to be prepared for society by gaining life skills. Individuals who are brought to the society by gaining life skills in the education system constitute the future of that society. Today, individuals who lead the development of science and technology have an important place in determining the future of both their societies and the world.

Ensuring developments in the fields of science and technology is directly related to mathematics, which is one of the basic disciplines of education. Therefore, the importance of teaching mathematics has increased for societies that want to advance in these areas. Koçak (2011), states that social developments depend on mathematical knowledge. Altun and Memnun (2008) state that with the increasing importance given to mathematics in Turkey and many countries in recent years, some reforms have been made in education systems and the individual has to solve a problem by producing his own solution. This situation shows that Realistic Mathematics Education, which is put forward with the view that mathematics is a human life activity, has an important place in mathematics teaching in many countries.

Our country's success level is low in the results of internationally applied exams such as TIMSS and PISA, in which knowledge and skills are measured based on real-life situations. These results show that we do not give enough place to teaching on the basis of real life problems in our education system. Realistic Mathematics

Education takes its place as an approach that we need to focus on in our education system in terms of providing the individual to reach information by solving real life problems by the individual.

In today's world, where information and technology are developing rapidly, the ability of societies to adapt to the age depends on raising their individuals with education suitable for development. Information and technology are developing intertwined with mathematics. Providing mathematics education to individuals in accordance with the requirements of the age provides convenience in the adaptation of societies to the global order in the age of rapidly changing information and technology. Alsina (2002), states that in today's globalizing world, mathematics teaching should also be looked at from a global perspective and that mathematics teaching in schools should be associated with problems from daily life more.

With the renewal of our education system, one of the primary goals has been to solve the problems that the individual may encounter throughout his life on his own. Therefore, the individual needs to understand the problem himself, to collect data for the solution, to develop different solutions and to interpret the appropriateness of the results he finds correctly (MEB, 2016a). Providing mathematics teaching by associating it with real life is important in terms of providing a more meaningful learning for the student. In addition to learning, it is also important for the individual to gain life skills. Realistic Mathematics Education activities are one of the most preferred methods for concretizing mathematics teaching with real life situations. During the implementation of Realistic Mathematics Education activities, it is expected that the student's active participation in the process of solving the problems associated with his daily life will positively affect the student's life skills.

Teaching environments in which students are actively involved contribute to the life skills of individuals. According to studies conducted in the USA and England, it is seen that methods used other than traditional teaching are effective in the development of life skills (İşmen et al., 2015). Realistic Mathematics Education is a teaching method that actively involves students in the process and deals with real-life situations. Therefore, our study is important in terms of seeing the effectiveness of this teaching method on real life skills.

When the international literature on Realistic Mathematics Education is examined, it is seen that realistic mathematics education aims to improve students' mathematical communication (Trisnawati et al., 2018) skills (Hirza et al., 2014) and mathematical literacy (Sumirattana et al., 2017) and critical thinking skills (Cahyaningsih & Nahdi, 2021) are noteworthy. Considering the national literature on Realistic Mathematics Education, fractions, symmetry, equations, inequalities, logic, multiplication and division in integers, ratio-proportionality, surface dimensions, It is seen that there are studies investigating the effects of student success in many fields such as probability and statistics, integral, angle, coordinate system and line equation, measuring fluids and lengths, measuring time (Akkaya, 2010; Akyüz, 2010; Altaylı, 2012; Bildircin, 2012; Bintaş et al., 2003; Can, 2012; Çakır, 2011; Çakır, 2013; Demirdöğen, 2007; Gelibolu, 2008; Özdemir, 2008; Sezgin-Memnun, 2011; Tunalı, 2010; Ünal, 2008; Üzel, 2007). No study has been found regarding the use of Realistic Mathematics education activities in the teaching of Circle and Circular Region. In addition, a study examining the effect of Realistic Mathematics Education in terms of life skills variable could not be reached. Therefore, it was deemed necessary to conduct this research in order to eliminate the deficiency of the study on this subject and the field it affects in the literature.

When the literature is examined, since there are no studies in which the Realistic Mathematics Education activities used in mathematics teaching are applied in the teaching of Circle and Circular Region and in terms of the areas affected by Realistic Mathematics Education, the effects on student success, mathematics anxiety, mathematics self-efficacy perception, visual mathematics literacy, problem solving attitudes, strategy use, permanence of learning studies have been carried out in terms of its effect on reflective thinking skills and student motivation. However, there is no study yet on its effect on life skills. This study is also important in terms of contributing to the literature.

Yenilmez and Demirhan (2013) state that students have some difficulties in learning about the Circle and Circular Region subject in the 7th grade curriculum. Evirgen and İkikardeş (2009), in their study to determine the subjects that seventh grade students have difficulty in mathematics lesson, "angles in circle or circular region", "the length of the circle and circle segment", "circular region and the areas of the circle slice" are among the subjects that students have difficulty in learning is located. Bray and Tangnay (2015) concluded in their study that the Realistic Mathematics Education approach increased students' motivation and was effective in learning. Similarly, Laurens et al., (2017) found that the Realistic Mathematics Education approach was effective in students' cognitive achievement. This shows the necessity of Realistic Mathematics Education activities in the teaching of this subject, since students have difficulties in learning the subject of Circle and



Circular Region. It is thought that realistic mathematics education activities will have an impact on the development of students' life skills, since they are applied based on real life problems during the application phase. Therefore, in this study, it is aimed to examine the effect of realistic mathematics education activities applied in secondary school 7th grade mathematics teaching on the development of life skills. In line with this general purpose, answers to the following questions were sought.

1. Is there a statistically significant difference between the pre-test and post-test scores of the students in the experimental group (EG) in terms of the development of life skills?
2. Is there a statistically significant difference between the pre-test and post-test scores of the students in the control group (CG) in terms of developing life skills?
3. Is there a statistically significant difference between the pre-test and post-test scores of the students in EG and CG in terms of developing life skills?

## Method

### Research Model

A quasi-experimental design with pre-test and post-test control groups was used in this study, in which the effect of mathematics teaching with Realistic Mathematics Education on the real-life skills of 7th grade students was investigated. Cohen et al., (2007), state that the quasi-experimental method is preferred in experimental studies when it is not possible to randomly assign subjects to the experimental and control groups. Generally, quasi-experimental method is preferred in educational research (Karataş, 2008). In educational research, it is not possible to assign randomly, since classes are predetermined by school administrators. However, one of the predetermined classes can be randomly assigned as the experimental group and the other as the control group (Özmen, 2015). In our study, the groups were determined by random assignment on a class basis and mathematics teaching was carried out in accordance with the Realistic Mathematics Education in the experimental group and in the control group in accordance with the traditional method. Measurements were made by applying the life skills scale before and after the application.

Table 1. Experimental design of the research

Groups	Pretest	Method applied	Posttest
Experimental group	Life skills scale	Realistic mathematic education	Life skills scale
Control group	Life skills scale	Traditional method	Life skills scale

### Research Group

The sample of the study consists of 46 students studying in the 7th grade of a secondary school in the Aegean Region in the second term of the academic year 2021/2022. In the experimental group, 23 students, 11 female students and 12 male students; in the control group, there are 23 students, including 6 female students and 17 male students. The sample for the research was determined according to the easily accessible sampling method, which is one of the purposive sampling methods. The reason for using this method is that it is the school where the researcher works, the sample is easily accessible and the participants who make up the sample participate voluntarily.

### Data Collection Tools

In this study, the Life Skills Scale developed by Bolat and Balaman (2017) was used. The scale consists of 5 sub-dimensions and 30 items. These sub-dimensions are "Decision Making and Problem Solving", "Creative Thinking and Critical Thinking", "Communication Interpersonal Relationship", "Empathy and Self-Awareness", "Coping with Emotions and Stress". The sub-dimensions of "Coping with Emotions and Stress", "Empathy and Self-Awareness Skills", "Decision Making and Problem Solving Skills" consist of 7 items; "Creative Thinking and Critical Thinking" sub-dimension consists of 5 items; The "Communication Interpersonal Skills" sub-dimension consists of 4 items. When the Cronbach Alpha reliability coefficients of the items in the five sub-dimensions are examined for each sub-dimension, the reliability coefficient of the items belonging to the "Coping with Emotions and Stress" sub-dimension is 0.82; The reliability coefficient of the items belonging to the "Empathy and Self-Awareness Skills" sub-dimension was 0.77; The reliability coefficient of the items belonging to the "Decision Making and Problem Solving Skills" sub-dimension was 0.72; The reliability

coefficient of the items belonging to the "Creative Thinking and Critical Thinking Skills" sub-dimension was 0.73; It was observed that the reliability coefficient of the items belonging to the "Communication Interpersonal Relationship Skills" sub-dimension was calculated as 0.66. The Cronbach Alpha reliability coefficient value of the Life Skills Scale, which consists of 30 items, was calculated as 0.90. In this study, the Cronbach Alpha reliability coefficient value obtained from the Life Skills Scale consisting of 30 items was calculated as 0.87. According to Tavşancıl (2006), for a scale to be considered reliable, the coefficient is expected to be above 0.70. According to the obtained values, it is understood that the whole scale and its sub-factors are reliable. In this scale, students' level of agreement with the items is as follows: "strongly disagree", "disagree", "undecided", "agree", "strongly agree". The answers given by the students to the scale items were scored with a 1-5 rating scale.

### **Application Process**

Our research was carried out with two branches consisting of 46 students, who constitute the 7th grade of a secondary school in the Aegean Region, in accordance with its purpose. Branches were randomly determined as experimental and control groups. Before the application, the life skills scale was applied as a pre-test to the students in the experimental and control groups. Before the application, the experimental group was informed about Realistic Mathematics Education. In the teaching of the Circle and Circular Region, the lessons will be taught in accordance with this approach and the stages of the lesson process in accordance with the approach were explained to the students. In the experimental group, activities suitable for the acquisition of the subject were carried out, taking into account the readiness of the students during the application. The activities were created by the researcher using sample questions suitable for Realistic Mathematics Education. The questions used in the activities were directed to the experimental group students in relation to daily life. The Circle and Circular Region topic is included in the current curriculum, covering 10 lesson hours. In accordance with the achievements in the curriculum, the application process was completed with the experimental group students with eight-hour in-class activities and two-hour out-of-class activities. A total of eight activities were applied to the students in the experimental group. An activity was applied in the classroom in order to distinguish the circle and the circular region for the subject of Circle and Circular Region by the students. An activity aimed at the acquisition of "Center angles in a circle determine the relationships between arcs and angle measures" of the Circle and Circular Region topic was applied in the classroom. Two activities were applied in class in accordance with the outcome of "Calculates the length of the circle and the circle segment". Three activities were applied in the classroom in accordance with the outcome of "Calculates the area of the circle and circle slice". An activity outside the classroom was used to calculate the circle length and the area of the circle by the students. While creating the activities, visuals that students can connect with real life were used. In accordance with the activities implemented in the classroom, the students participated individually or in groups. During the activities, students were given a certain amount of time to think. In the activities carried out in groups, it was ensured that the students communicate with each other and work in cooperation. It was paid attention that the questions included in the activities were created from situations that students may encounter in daily life in accordance with the principles of the Realistic Mathematics Education approach. Lessons were taught with the control group students according to the method and process in the current curriculum. After the application, the life skills scale was applied to the students in both groups. Evaluation was made according to the pretest and posttest scores obtained from the applied scales.

### **Data Analysis**

SPSS package program was used in the analysis of the quantitative data obtained in the research. The Life Skills Scale is a 5-point Likert type scale. While obtaining the results of the analysis, 1 point was given to the "strongly disagree" option, 2 points to the "disagree" option, 3 points to the "undecided" option, 4 points to the "agree strongly" option, and 5 points to the "strongly disagree" option. In our study, there were 23 students in the experimental group and 23 students in the control group. Shapiro Wilk normality analysis was applied to determine whether the obtained data showed normal distribution. Considering the sample size for the assumption of normality, if the sample size is less than 50, it is appropriate to use the Shapiro Wilk test (Büyükoztürk, 2013).

Table.2 Normality test results of pretest and posttest scores of the experimental and control groups

Groups	Shapiro-Wilk	df	p
Experimental group			
Pretest	.958	23	.424

Posttest	.957	23	.407
Control group			
Pretest	.971	23	.705
Posttest	.939	23	.167

When Table 2 is examined, the Shapiro-Wilk test scores of the data obtained from the participants in the experimental and control groups show a normal distribution. While analyzing the data, Wilcoxon Signed Rank Test and Mann Whitney U test, which are non-parametric test techniques, were used instead of the dependent groups t test and independent groups t test, which are parametric test techniques in the SPSS statistical package program, since the study groups were less than 30 and the population with normal distribution could not be represented.

## Results and Discussion

### Findings

In this part of the research, the findings obtained as a result of the statistical analysis of the data collected by the methods used in accordance with the purpose of the research and the comments on these findings are included. In the first subproblem of the study, “Is there a statistically significant difference between the pretest and posttest scores of the students in the experimental group (EG) in terms of the development of life skills?” is in the form. Accordingly, it was aimed to determine whether there is a statistically significant difference between the pretest and posttest scores of the experimental group, in which the Realistic Mathematics Education approach was used in the 7th grade mathematics teaching, in the development of life skills.

As seen in Table 2, the pretest and posttest scores of the experimental group were tested to be normally distributed by applying the Shapiro Wilk test. However, nonparametric statistical tests were used because the study group was less than 30 and could not represent the population. The pretest and posttest scores of the experimental group's Life Skills Scale were analyzed by applying the Wilcoxon Signed Rank Test in the statistical package program. Table 3 shows the Wilcoxon Signed Rank Test analysis results of the scores according to the Life Skills Scale of the experimental group.

Table 3. Comparison of pre-test-post-test scores of the experimental group with Wilcoxon test

	N	Rank mean	Sum of ranks	z	P
Negative rank	7	9.36	65.50	-1.983	0.047
Positive rank	15	12.5	187.50		
Equal	1				

Note: The result is based on negative ranks. \*  $p < 0.05$

When the Wilcoxon Signed Rank Test analysis given in Table 3 was examined, it was determined that there was a statistically significant difference between the pretest and posttest scores of the experimental group students from the Life Skills Scale ( $z = -1.983$ ;  $p < 0.05$ ). It is seen that this difference is in favor of posttest scores. According to the findings obtained as a result of the analysis, it can be said that mathematics teaching with the Realistic Mathematics Education approach is effective in developing life skills.

The second subproblem of the study was “Is there a statistically significant difference between the pretest and posttest scores of the students in the control group (CG) in terms of the development of life skills?” is in the form. In the control group, mathematics teaching was carried out with the traditional method. It is aimed to determine whether there is a statistically significant difference between the pretest and posttest scores applied before and after the determined subject.

As seen in Table 2, the pretest and posttest scores of the control group obtained by applying the Shapiro Wilk normality test show normal distribution. However, in the analysis of the data, since the number of control group was less than 30, it could not fully represent the population with normal distribution, instead of parametric tests, the test techniques corresponding to nonparametric tests were used. In accordance with our second sub-purpose, the pretest and posttest scores of the Life Skills Scale were analyzed by applying the Wilcoxon Signed Rank Test, one of the statistical analysis techniques, in the statistical package program. The analysis results of the pretest and posttest scores of the control group are given in Table 4.

Table 4. Comparison of the pretest-posttest scores of the control group with the Wilcoxon test

	N	Rank mean	Sum of ranks	z	P
Negative rank	10	12.30	123.00	-0.457	0.648
Positive rank	13	11.77	153.00		
Equal	0				

Note: The result is based on negative ranks. \*  $p < 0.05$

When the Wilcoxon Signed Rank Test analysis given in Table 4 was examined, it was determined that there was no statistically significant difference between the pretest and posttest scores of the control group students from the Life Skills Scale ( $z = -0.457$ ;  $p > 0.05$ ). As a result of the analysis, it can be said that the traditional method of mathematics teaching is not effective in the development of life skills.

The third subproblem of the study was “Is there a statistically significant difference between the pre-test and post-test scores of the students in the experimental group and the control group in terms of the development of life skills?” is in the form. It is aimed to determine whether there is a statistically significant difference between the Life Skills Scale pre-test scores obtained before the application and the post-test scores obtained after the application of the experimental group, in which mathematics teaching is provided by applying activities suitable for the Realistic Mathematics Education approach, and the control group, which is taught mathematics with the traditional approach.

As can be seen in Table 2, the pretest and posttest scores of the experimental and control groups show normal distribution by applying the Shapiro Wilk normality test. However, in the analysis process of the data, since the number of data belonging to the experimental and control groups was less than 30 and could not fully represent the normally distributed universe, nonparametric tests were used instead of parametric tests. In accordance with our third subproblem, the experimental group pretest scores obtained by applying the Life Skills Scale and the control group pretest scores, and the experimental group and control group post-test scores were analyzed by applying the Mann Whitney U test, one of the statistical analysis techniques. The analysis results obtained by applying the Mann Whitney U test are given in Table 5.

Table 5. Findings regarding the pretest-posttest scores of the experimental and control groups

	Groups	N	Rank mean	Sum of ranks	U	P
Pretest	Experimental	23	25.89	595.50	209.500	0.226
	Control	23	21.11	485.50		
Posttest	Experimental	23	28.28	650.50	154.500	0.016
	Control	23	18.72	430.30		

\* $p < 0.05$

As can be seen in Table 5, the mean rank in the pre-test in the experimental group that was taught mathematics with Realistic Mathematics Education was 25.89; the mean rank was found to be 21.11 in the control group, which was taught mathematics with the traditional method. Accordingly, it was determined that the difference between the pre-test scores of the experimental and control groups was not statistically significant ( $U = 209.500$ ,  $p = 0.226 > 0.05$ ).

As a result of the posttest applied to the experimental group, who was taught mathematics with Realistic Mathematics Education, the average rank was 28.28; As a result of the posttest performed in the control group, which was taught mathematics with the traditional method, the mean rank was found to be 18.72. Accordingly, it was determined that the difference between the posttest scores of the experimental and control groups was statistically significant ( $U = 154.500$ ;  $p = 0.016 < 0.05$ ).

In accordance with the results obtained in the research, the use of Realistic Mathematics Education approach in the teaching of the 7th grade "Circle and Circular Region" topic was more effective in the development of life skills compared to the traditional method. As a result, it can be said that mathematics teaching provided with the Realistic Mathematics Education approach is more effective than the traditional method of mathematics teaching in the development of life skills.

## Conclusion

Pretest and posttest were applied to the experimental and control groups in order to measure the effect of Realistic Mathematics education and mathematics teaching on the real-life skills development of students. As a result of the statistical analysis of the pretest scores of the experimental and control groups before the application, it was determined that there was no significant difference between the two groups. However, it was determined that the statistical analysis results for the posttest scores applied to the experimental and control groups after the application showed a significant difference in favor of the experimental group. The posttest analysis results applied to both groups showed that the Realistic Mathematics Education approach was more effective. This result, in the study conducted by Cansız (2015) in which the effect of Realistic Mathematics Education approach on students' success and creative thinking skills was examined, it was seen that the Realistic Mathematics Education approach positively affected students' creative thinking skills. This result supports the results of the research. In the study conducted by Cahyaningsih and Nahdi (2021), in which the effects of Realistic Mathematics Education on students' critical thinking skills were examined, it was found that Realistic Mathematics Education positively affected students' critical thinking skills. This finding is similar to the results of the research conducted.

When the differences between the posttest and pretest scores of the experimental and control groups were compared, it was determined that there was a significant difference in favor of the experimental group. According to this result, it has been shown that the Realistic Mathematics Education approach is effective in the development of life skills. This situation is similar to the result of Realistic Mathematics Education made by Üzel (2007), that realistic mathematics education and mathematics teaching have an effect on student success. Similarly, the study conducted by Çilingir and Artut (2016), which concluded that realistic mathematics education positively affects student achievement, visual mathematics literacy, self-efficacy perceptions and problem solving skills, supports this study. At the same time, the results of this study are similar to the results of the study conducted by Zakaria and Syamaun (2017) on the positive effects of realistic mathematics education on student achievement and mathematics attitude.

## **Recommendations**

This research, which examines the effect of Realistic Mathematics Education on the development of life skills, was carried out with a study group consisting of 46 people. Accordingly, it is recommended to apply on larger groups for future studies. The research was limited to the application of "Circle and Circular Region" in 10 lesson hours. Different studies can be done within the scope of more subjects and in a longer time period. With the use of Realistic Mathematics Education approach in teaching the subject of Circle and Circular Region, academic success, permanence, attitude, motivation, visual studies can be carried out to ensure that its effect is seen in terms of variables such as literacy. Realistic Mathematics Education is an approach that requires preliminary preparation for teachers. The lack of sufficient activities seems to be not common for teachers. Therefore, in service training can be given to encourage teachers to apply this approach. Different subjects and Activity studies for Realistic Mathematics education for learning groups can be diversified and increased.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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## **Compliance with the Covid-19 Protocol for the Overseas Madurese Community in Terms of the Direct and Indirect Effects of Locus of Control, Belief in the Covid Conspiracy Theory, and Anti-Vaccine Attitudes**

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**Abstract:** Statistically, Indonesia was recorded as having the highest number of active COVID-19 cases in Asia in 2021. Several clusters of activities and crowds increased confirmed cases in several areas, including Madura, where the number of cases continues to rise. One of the reasons for the increasing number of Covid-19 cases in Madura is a lack of discipline in health protocols, such as wearing masks, keeping a safe distance, and washing hands. The increase in Covid-19 cases in Bangkalan, Madura, was also due to poor health protocol adherence (prokes). The government has issued several policies in response to the COVID-19 pandemic, including a vaccination policy. The vaccination policy is inextricably linked to community debates over efficacy, halal certification, independent vaccines, and red and white vaccines. The vaccination debate has resulted in a societal anti-vaccination attitude. The Madurese community has a distinct collective culture that includes hard, religious, and high conformity. Even when traveling abroad, this rich cultural value does not fade. Even though, in a pandemic situation, various joint activities lead to behavior that violates health protocols, changing collective behavior is extremely difficult. Aside from the strong and distinct cultural background in obedient behavior to health protocols, the value of religiosity psychologically encourages the Madurese community to form a locus of control in dealing with pandemic situations. The purpose of this study is to put the Covid-19 protocol compliance model to the test using locus of control and anti-vaccine attitudes. Based on a study of 245 people with characteristics of an overseas Madurese community. The study's findings indicate that the theoretical model of Covid protocol compliance for the overseas Madurese community was built through direct and indirect influences between the beliefs of the Covid conspiracy theory, locus of control, and anti-vaccine attitudes.

**Keywords:** Anti-vaccine attitudes, Compliance with the covid-19 protocol, Belief in the covid conspiracy theory, Locus of control.

### **Introduction**

Covid cases increased sharply in Indonesia in mid-2021, with Madura being one of them. After random tests were performed on 6,742 people who went on vacation in June 2021, the number of new positive cases of Covid-19 increased by 4,123 (Pranita, 2021). Despite the fact that the number of cases has significantly

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increased, Madurese residents continue to go about their daily lives, ignoring the covid protocol. Even though Madura has been designated as a zone with 3<sup>rd</sup> level restrictions on community activities, community activities continue to take place as usual. The implementation of Community Activity Restrictions (called PPKM) 3rd level has a variety of social consequences, including work done from home (WFH), restrictions on public areas, economic activity restrictions, and others (Bhayangkara, 2022). However, the restrictions imposed by the government to slow the rate of increase in Covid cases in Madura were also rejected by residents, who continued to participate in joint activities such as tahlilan celebrations, which invited large numbers of people despite the Covid protocol, and even members of the regional government were urged not to announce the news of death to the public (Azmi, 2021). Furthermore, the Madurese people refuse to call it Covid and instead choose to replace it with (Ifansasti, 2021). This increase in cases was caused by residents' disobedience to the covid protocol (Pranita, 2021). Disobeying the covid protocol is not limited to the Madurese who live in their homeland. Adherence to the Covid Health protocol is also shared by Madurese who are living abroad.

The Madurese community is well-known as a nomadic community, and it is almost evenly distributed throughout Indonesia. Religious, tenacious, and communal characteristics are inherent, despite the fact that they have been absent for a long time (Aldo, 2019; Sholik et al, 2016). The Madurese community has a distinct collective culture that includes hard, religious, and high conformity (Salsabiela, 2021). Even when traveling abroad, the thickness of this cultural value does not fade. Even though, in a pandemic situation, various joint activities lead to behavior that violates health protocols, changing collective behavior is extremely difficult. Aside from the strong and distinct cultural background in obedient behavior to health protocols, the value of religiosity psychologically encourages the Madurese community to form a locus of control in dealing with pandemic situations. A person's belief in a pandemic and adherence to health protocols are based on individual differences, which include a locus of control component (Devereux et al., 2021). This is consistent with the findings of Lo Prasti et al's study, which demonstrated a person's proclivity to move outside the home during a national lockdown using individual endogenous variables related to a person's personality trait, locus of control, and moral disposition (Lo Presti et al., 2021).

The researcher conducted a preliminary study by interviewing three overseas Madurese residents of Malang's Madura village. According to the preliminary study findings, even though the covid was hitting, the overseas Madura community continued to hold joint activities such as recitation, takziah, tahlilan, and other joint activities that invited a large number of people without regard for the covid protocol. It is intriguing to examine internal factors such as the Madurese community's locus of control. The locus of control is a component of a person's self-evaluation in the face of an event. Rotter (Patten, 2005) defines locus of control as a person's perspective on an event, regardless of whether that person can or cannot control the events that occur to him. This viewpoint will encourage people to make decisions when confronted with situations such as the covid pandemic. According to Francis (2014), there are two types of locus of control: internal and external. Individual decisions and actions based on self-decision are referred to as internal locus of control, whereas external locus of control refers to the perception that all events originate from outside of oneself, such as luck, other people, or the environment. In the case of covid, the public has a different assessment in responding to the surge in covid to determine whether or not to follow the covid protocol.

In addition to locus of control, many studies believe that the covid conspiracy belief has an impact on compliance with the covid protocol. According to the study (Biddlestone et al, 2020), cultural and psychological factors are related to intentions to reduce the spread of COVID-19. Vertical individualism is found to be a negative predictor of intention to engage in social distancing, both directly and indirectly through belief in COVID-19 conspiracy theories and feelings of powerlessness. Vertical collectivism predicts social distancing intentions positively. Horizontal collectivism, through feelings of helplessness, indirectly predicts social distancing intentions.

Finally, horizontal collectivism both directly and indirectly predicts hygiene-related intentions by lowering feelings of helplessness. These findings imply that promoting collectivism may be an effective way to increase participation in efforts to reduce the spread of COVID-19. They also emphasize the significance of investigating the interactions between culture and personal feelings (helplessness) as well as information consumption (conspiracy theories) during times of crisis.

Despite widespread belief in the existence of a covid conspiracy in Indonesian society in general and the Madurese community in particular, the government is attempting to increase covid vaccination absorption in the community. The pros and cons of the covid vaccination program occur in the community, strengthening the belief that there is a covid conspiracy. The Madurese do not believe in the existence of covid (Al-Mansury, 2021). According to research (Talib et al., 2021), the most effective way to communicate about vaccines to the

public is through social media rather than traditional media, and this study discovered that there are still many people who have not been vaccinated. The community's anti-vaccination attitudes are an impediment, because many people are influenced by fake news and believe that the vaccination program is harmful. Based on the observed phenomena, this study aims to test the Covid-19 protocol compliance model for the overseas Madurese community using the covid conspiracy belief, locus of control, and anti-vaccine attitudes.

## **Procedure**

The research is conducted online by distributing questionnaires created with Google Forms to the general public or individuals who meet the criteria for being used as research subjects. However, due to technological stuttering in the research respondents, data collection was also done offline after a while.

## **Techniques of Analysis**

Using structural equation modeling to test research hypotheses (SEM) Structural equation modeling (SEM) is a cross-sectional, linear, and general statistical modeling technique. According to another definition, structural equation modeling (SEM) is a common and extremely useful multivariate analysis technique that includes special versions of a number of other analytical methods as special cases. Structural equation modeling (SEM) is a statistical technique for developing and testing statistical models, most commonly causal models. SEM is actually a hybrid technique that includes confirmatory aspects of factor analysis, path analysis, and regression as special cases. One advantage of SEM is the ability to model constructs as latent variables, or variables that are not directly measured but are estimated in the model of the measured variables and are assumed to have a relationship with these variables - the latent variables. Researchers can create models using SEM by testing the dimensions of a variable as well as testing between variables. In order to achieve goodness of fit, SEM can eliminate covariant error.

## **Method**

This research employs a quantitative methodology. Quantitative research yields numbers in the analysis results, which are then processed statistically (Azwar, 2012). This study incorporates applied research or applied research. Applied research is concerned with applying theory to real-world conditions and problems, so that the results can be used to solve practical problems (Kumar, 2011). The four independent variables ( $x$ ) are Covid conspiracy beliefs, Anti-Vaccine Attitudes, and Locus of Control, and the one dependent variable ( $y$ ) is Compliance with Health Protocols. The purpose of this research is to develop a theoretical model of compliance with health protocols using the variables Covid Conspiracy Belief, Anti-Vaccine Attitude, and Locus of Control.

## **Participant**

The population is the entire research subject that has been determined to be studied and investigated in research due to its unique characteristics and qualities. This study's population consists of all Madurese Overseas residents who are at least 18 years old. This study had a total of 245 participants. This study employs a non-probability sampling sample selection method, which means that not all elements or elements of the population have the same chance of becoming samples (Darmawan, 2014). Purposive sampling was used to retrieve data for this study. The purposeful sampling technique is used because the sample is determined based on certain characteristics or criteria that the researcher has set so that it is in accordance with this study. The use of this technique was chosen based on the special characteristics possessed by members of the population who are able to provide information as needed in this study, the characteristics needed are Madurese people who are overseas (outside of the island of Madura), at least 18 years old, and affected by the COVID-19 pandemic.

## **Measurement**

A Likert scale was used to collect data for this study. The Likert scale is a scale with several alternative answers ranging from very positive to very negative, with a score assigned to each answer choice. Respondents were asked to select the value that was closest to them from the alternative values or answers available in each statement, which ranged from strongly agree to strongly disagree.

### Compliance with Covid Protocols Scale

This study's scale for measuring the health protocol The compliance variable employs a proprietary scale (Plohl & Musil, 2021) with four answer options ranging from not at all (value 1) to always (value 4). Several health protocol compliance scale items include: (1) clean hands regularly and thoroughly with a hand sanitizer containing health alcohol; and (2) when coughing or sneezing, cover mouth and nose with bent elbow or tissue.

### Vaccine Attitude Scale

The Vaccine Examination (VAX) was developed to assess vaccine attitudes (Martin & Petrie, 2017). This scale has four dimensions: mistrust of vaccine benefits, concerns about unforeseen future effects, commercial profiteering, and preference for natural immunity, with 12 items answered on a 6-point Likert scale ranging from strongly agree to strongly disagree. Cronbach's alpha was 0.94 in the study of the anti-attitude scale toward vaccines.

Items in Attitude Toward Vaccine include: (1) I worry about the unknown effects of vaccines in the future, and (2) Vaccination programs are a big con.

### Locus of Control Scale

The researcher in this study used a multidimensional locus of control developed by Levenson, which was later translated by Liestiorini. (1) Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power, and (2) In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.

### Covid Conspiracy Belief Scale

Egorova et al. developed the Covid conspiracy belief scale (2020). The Covid conspiracy belief scale has four items. All of the items are positive. An example of a product on this scale is The hysteria surrounding the coronavirus is being fueled to distract attention from other national problems.

Table 1. Composite reliability and alpha cronbach

Variable	Composite Reliability	Cronbachs Alpha
Compliance to Covid Protocol	0.888556	0.861686
Covid Conspiracy Belief	0.919849	0.885579
Locus of Control	0.888624	0.858466
Vaccine Attitude	0.875312	0.835039

Table 1 shows that the composite reliability value is greater than 0.7 and the Cronbach's alpha value is greater than 0.6, indicating that composite reliability and Cronbach's alpha are met, and all research instrument items are declared reliable for further testing.

## Results and Discussion

Based on the research demographic data, the majority of the research respondents were male with a percentage of 59.6%. Most of them are aged 25-34 years with a percentage of 32.25%, this can be seen from the income of less than 1 million by 72.65% of respondents. Research respondents are overseas Madurese communities, with the largest distribution of cities where respondents live in East Java at 96.31% and the largest length of domicile is more than 10 years with a percentage of 70.61% and the largest from overseas is Pamekasan with a percentage of 54.29%. Research respondents have a special reason to migrate from Madura, the majority (55.51%) have reasons to work overseas.

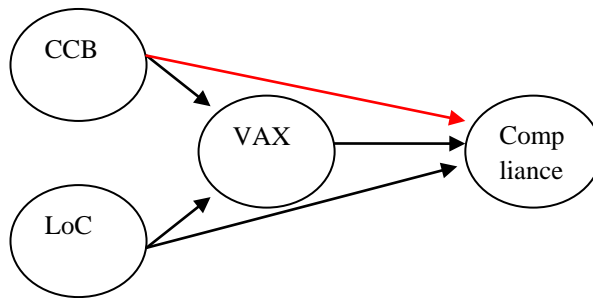
Based on the objectives and specifications of the research, testing is carried out in stages (iterations) using the SmartPLS software, to obtain fit test results. The SEM Model Factor Analysis shows the test results in Table 1

show that all outer loading construct indicators have a loading value > 0.5, so it can be concluded that this measurement meets convergent validity. The discriminant validity results show that the root square of average variance extracted (AVE) value is greater than 0.5. The results of the reliability test showed reliable results because the value of composite reliability ( $\rho_c$ ) was above 0.7. For the inner Q-Square model greater than 0, it can be interpreted that the predictor is latent so that it can be said that the model is feasible to estimate.

Tabel 2. Evaluation of structural model conformity index criteria

Criterion	Result			Critical Value	Model Evaluation
<i>Outer Model</i>					
<i>Discriminant validity (Average Variance Extracted (AVE))</i>		AVE	Root square AVE	≥ 0,5	Good
	Compliance to Covid Protocol	0,446	0,668		
	Covid Conspiracy Belief	0,742	0,862		
	Locus of Control	0,473	0,688		
<i>Composite Reliability (<math>\rho_c</math>)</i>	Compliance to Covid Protocol	0,889		≥ 0,7	Good
	Covid Conspiracy Belief	0,920			
	Locus of Control	0,889			
	Vaccine attitude	0,875			
<i>Inner Model</i>					
<i>Q-Square</i>	Compliance to Covid Protocol	0,015		≥ 0	Good
	Vaccine attitude	0,146			

The results of the analysis on the influence test between these constructs are as described by paying attention to the path diagram of the results of the PLS analysis, so that the relationship between these constructs can be described in a simple way, as shown in the Figure below.



The interpretation of the results of the hypothesis testing proposed in this study is explained as follows:

Tabel 3. Result from hypothesis test

H	Role		Koef Path	T value	Note
H1	Covid Conspiracy Belief	→ Vaccine attitude	0,268	02,49***	Significant
H2	Covid Conspiracy Belief	→ Compliance to Covid protocol	-0,105	0,847	Not Significant
H3	Vaccine attitude	→ Compliance to Covid protocol	0,180	1,050	Significant
H4	locus of control	→ Vaccine attitude	0,531	4,910***	Significant
H4a	locus of control internal	→ Vaccine attitude	0,399	2,573***	Significant
H5	locus of control	→ Compliance to Covid protocol	-0,096	0,633	Significant

Source: Primary data (2021)

\*, \*\*, \*\*\* signifikan in level 10%, 5%, 1% value t Table in level 10%= 1,645, 5%= 1,960, 1%= 2,326.

Table 4. Demographic data of research respondents

Data	Category	Amount	%
Sex	Man	146	59.6%
	Woman	99	40.4%
Age	17 – 24 years old	53	21.63%

	25 – 34 years old	79	32.25%
	35 – 44 years old	73	29.80%
	45 – 54 years old	32	13.06%
	More than 55 years old	8	3.26%
Wandering City	East Java	236	96.31%
	Central Java	2	0.82%
	Jakarta	2	0.82%
	Bali, Sulawesi South, Sumatera		1.23%
	North	3	
	Yogyakarta	2	0.82%
Domicile Length	Less than 1 year	17	6.94%
	1 - 5 year	14	5.71%
	5 - 10 year	41	16.74%
	More than 10 year	173	70.61%
Origin	Bangkalan	74	30.20%
	Sumenep	17	6.94%
	Pamekasan	133	54.29%
	Sampang	21	8.57%
Reasons to wander	Married	58	23.67%
	Work	136	55.51%
	Others	51	20.82%

Table 5. Demographic data of research respondents: income, last education, and occupation

Demographic data	Category	Ammount	%
Monthly Income	Less than Rp. 1.000.000,-	178	72.65%
	Rp. 1.000.001,- s/d Rp. 5.000.000,-	58	23.68%
	Rp. 5.000.001,- s/d Rp. 10.000.000,-	5	2.04%
	More than Rp. 10.000.000,-	4	1.63%
Last education	Elementary School	30	12.25%
	Junior high school	146	59.59%
	High School	21	8.57%
	Associate degree	10	4.08%
	Bachelor Degree	30	12.24%
	Master Degree	8	3.27%
Occupation	Self-employed	131	53.47%
	Businessman	41	16.74%
	civil servant	9	3.67%
	Housewife	30	12.24%
	Student	28	11.43%
	Teacher	3	1.22%
	Student	1	0.41%
	Doesn't work	2	0.82%

Based on demographic data, it is clear that male workers or male migrants outnumber female workers or female migrants. This is because men are the head of the family, so their desire to migrate outside the region to make a decent living is much greater. in comparison to women who are housewives Demographic data also shows that the average immigrant is of productive age, which is between the ages of 25 and 40. This is because at that age, an individual's desire to improve a more decent standard of living is much greater than the age of non-productive people, such as children and the elderly, and the reason they migrate is obvious: to work, because the Madurese have cultural traits that are associated with migrants and hard workers (Ismi, 2021).

From a regional standpoint, we can see that Pamekasan contributed a greater number of Madura immigrants than several other regions, namely Bangkalan and Sumenep. According to demographic data, these Madurese migrants live on average in East Java, which is an industrial and population center with a high economic level, so their opportunities to trade and earn a decent living will be much greater. Because of these Madura immigrants, East Java is considered a more promising location when compared to other locations such as DKI

Jakarta to Jogjakarta, Central Java, West Java, and others, because the distance is not too great and the economic potential is quite large.

The demographic data studied show that the majority of the population from Madura who migrated to Java is economically less stable. The number of immigrants with a monthly income of less than one million is greater than the number of immigrants with an income above the average UMR. The data on these migrants' monthly income is positively correlated with their most recent education, with the majority of them being junior high school graduates or the equivalent. Education is generally positively correlated with a person's income; if he has a low education, his monthly income will tend to be low because of the potential to have a business or work opportunity or have an economic business that is less hampered due to lack of education or lack of experience in the business or work involved, and it is not surprising that the majority of these migrants are entrepreneurs, namely those who start their own businesses and are mostly traders where they migrate from Madura to work in the hope of having a more decent income outside the island of Madura.

The implementation of strict covid protocols is the main key to reducing the number of covid cases; compliance is required in carrying out the covid protocol through several behaviors such as maintaining distance, using masks, maintaining personal hygiene, and others. The study's findings indicate that the covid conspiracy belief, anti-vaccine attitude, and locus of control form the theoretical model of compliance with the covid protocol for the overseas Madurese community. This study demonstrates how crucial the vaccine's attitude is to adherence to the covid protocol. In encouraging compliance with the covid protocol, the vaccine's attitude can act as an intermediary variable for the covid conspiracy belief and locus of control.

The Madurese community will face the pros and cons of the covid vaccination program in 2021, with even less trust and an attempt to reject the existence of covid, which causes various restrictions for the community. The study's findings indicate that anti-vaccine attitudes play a role in covid protocol compliance. Similarly, Latkin et al., (2021) discovered a link between COVID-19 prevention behavior (wearing masks and keeping a safe distance) and vaccination attitudes. According to Lazarus et al. (2020), some countries have low rates of covid-19 vaccination due to societal characteristics and trust in the government. Madura is known for having a high religiosity character and a high adherence to religious leaders (Ismi, 2021). The government compliance survey is less relevant in terms of attitudes toward covid-19 vaccination, especially since the issue of halal certification is highly debated in a society with a strong religious component. Previous research has demonstrated the impact of vaccine attitudes on health protocol adherence (Hornsey et al, 2018; Kwok et al, 2021; Talib et al, 2021, Akhrani et al, 2022). The barrier to vaccine attitudes in the Madurese community is a lack of sufficient understanding and literacy about the risk of covid, which results in a reluctance to vaccinate or implement health protocols. Moreover, the number of hoax news received by the Madurese community related to Covid which is reinforced by the fact that the level of public education is still low, making it difficult for people to distinguish factual news and hoax news. Regarding belief in the covid conspiracy theory, the results of this study show that there is no direct role in the Covid protocol compliance variable. However, the belief that there is a covid conspiracy can play a role in compliance with the covid protocol if it is through an anti-vaccine attitude. In contrast to the results of the research by Jolley & Douglas (2014), the individual's belief in the anti-vaccine theory is directly related to a decrease in the individual's desire to get the vaccine. In this study, to produce compliance with the covid protocol, the covid conspiracy belief must go through an anti-vaccine attitude. The results of this study are the same as those conducted by Goldberg & Richey (2020) where anti-vaccine attitudes are explained as a result of an individual's psychological predisposition to conspiracy theories. The form of anti-vaccine belief in the conspiracy theory is that any information that comes from the government will be considered as something that deserves to be suspected. The government is considered to have made too many blunders and mistakes in the eyes of the people. So with these mistakes and shortcomings, people's trust in the government erodes (Ismi, 2021; Akhrani et al, 2022). For the Madurese, there is no such thing as a corona virus and rejecting the covid disease as a trending illness. Most of them are middle to lower class people in terms of economy. Traders in the market to street vendors also refused to be disciplined by officers because they felt that they were disadvantaged if they obeyed and believed in the issue of the pandemic. Conspiracy COVID-19 beliefs (among them, conspiracy beliefs about chloroquine), as well as conspiracy mentalities (i.e., propensity to believe in conspiracy theories) negatively predicted participants' intention to be vaccinated against COVID-19 in the future. Lastly, conspiracy beliefs predict support for chloroquine as a treatment for COVID-19. Interestingly, there is no conspiracy belief that points to the dangers of vaccines. The implications for the pandemic and potential responses are discussed (Bertin et al, 2020).

The locus of control, interestingly exhibits direct or indirect influence. Locus of control cannot have a direct effect on health protocol compliance, but it can have an effect if it is produced through the intermediary variables of vaccine attitudes. According to Aharon et al. (2018), the interaction between internal and external

HLOC (Health Locus of Control) can be a predictor of vaccination attitude. Similarly, the findings of Rapisarda et al. (2021) explain the relationship between Locus of Control and vaccine attitudes. According to the findings of Szczerbiska et al. (2017), there are drawbacks to the association of internal locus of control with anti-vaccine attitudes. According to the findings of this study, the PA (positive attitude) subscale of the Attitudes Towards Vaccinations Scale is positively related to the internal locus of health control. In terms of adherence to the covid protocol, the findings of this study are supported by research conducted by Joo-Hyun et al., (2011) who found that respondents who rated hand washing as important for influenza prevention also rated it highly in terms of internal locus of control. In the context of kidney disease research, locus of control has a significant relationship with adherence to therapy and medication use (Suryani et al, 2021; Ansyar et al, 2020). The Madurese have a distinct culture of obstinacy, autonomy, and religion. This personality can be seen in the community's reaction to the pandemic. On the one hand, firm belief reinforces anti-vaccine attitudes and leads to adherence to the covid protocol. However, when confronted with religious leaders, the Madurese community's harsh attitude softens. The religious nature of the Madurese community strengthens the community's behavior, including in dealing with the pandemic. Given the local wisdom that underpins every decision made by the Madurese community, a cultural approach is required to encourage people to follow the covid protocol during the pandemic. Religious leaders' involvement will be more effective in educating the public than a structural political approach, such as the government's current approach. When the government imposes restrictions on community activities and is accompanied by pandemic policies that change on a regular basis, trust in the government suffers significantly.

## **Conclusion**

Vaccine attitudes are an important variable in explaining covid protocol compliance. The vaccine's attitude is an intermediate variable in explaining the role of the covid conspiracy belief and locus of control on covid protocol compliance. The Covid conspiracy belief cannot explain Covid protocol compliance directly, whereas the locus of control can explain Covid protocol compliance directly or indirectly through the vaccine attitude.

## **Recommendations**

Given the strong cultural identity of the Madurese community, even when they are living abroad, the involvement of religious leaders is regarded as an important value that must exist in educating the Madurese community to comply with the covid protocol.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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## **Development of a Design Thinking Pedagogical Model for Secondary Schools Science Teachers in Malaysia: A Needs Analysis**

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**Abstract:** In line with UNESCO's goal of enhancing quality and innovation through various enhancements to Science, Technology, Engineering, and Mathematics (STEM) education, the Malaysian Ministry of Education also places a premium on information enhancement through STEM education and the Malaysia Education Blueprint (MEB) 2013-2025. Design thinking is an essential component of STEM education in modern schooling. The significance of design thinking, particularly in STEM education, fosters creativity and innovation in problem-solving among students. The needs analysis research is the early phase of Design and Development Research (DDR). This study aims to determine the requirements for developing a Design Thinking Pedagogical Model for secondary school science teachers in Malaysia. The interview method was used to perform the qualitative research. Thus, semi-structured interviews with three science teachers were conducted to explore teachers' perspectives on the need to develop a Design Thinking Pedagogical Model. Purposive sampling was used to choose these experts, and they all matched the criterion. Thematic techniques such as verbatim transcription, coding, and themes were used to examine the interview data. The findings of this study indicate that researchers need to develop a Design Thinking Pedagogical Model of Science by a panel of expert teachers in teaching sciences in secondary schools. As such, the development of this Design Thinking Pedagogical Model will serve as a practical guide for teachers in terms of training and utilizing design in students and practicing the skills necessary for the 21st century through learning and facilitation.

**Keywords:** Design thinking, STEM Education, Pedagogical model, Need analysis, Design and development research (DDR)

### **Introduction**

Education is evolving in response to the rapid spread of information and communication technology during Industrial Revolution 4.0. IR 4.0 is a technological revolution that radically alters human thought, the global economy, and social roles (World Economic Forum, 2018). Due to IR 4.0, the economic, social, and political systems are changing, and so is the educational system. The 21st-century learning environment is transitioning from a teacher-centered to a learner-centered orientation. The Malaysian Ministry of Education (MOE) has developed the Malaysian Education Blueprint 2013 - 2025 (MEB) in order to educate students for the educational challenges of the 21st century so that they can compete internationally. It is aligned with MEB 2013-2025, which aims to prepare individuals to enter the workforce following labor market demands.

Design Thinking is an original, creative, and human-centered strategy and mindset that incorporates interdisciplinary teamwork to create user-focused products, services, and experiences (Lor, 2017). As a dynamic and non-linear framework (Scheer et al., 2011), Design Thinking employs a five-step iterative process: (1)

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Empathy, (2) Definition, (3) Ideation, (4) Prototype, and (5) Testing. It has been proposed that design thinking might assist teachers by giving them with accessible and adaptive frameworks that can improve their creativity and contribute in the solution of real-world problems. In addition, a design thinking approach was shown to be an effective technique for enhancing the teaching or learning process, particularly when developing 21st-century skills among students (Razali et al., 2022). Numerous scholars and researchers in the field of education have investigated the prospect of design thinking enhancing curricula and teaching strategies (Abidin et al., 2022; Balakrishnan et al., 2021; Noh & Karim, 2021). In this context, "design thinking" refers to a more general way of thinking that incorporates the designer's approach to a real-world problem or difficulty. Therefore, the study of the development of this model is significant for integrating design thinking to solve a real-world problem related to education. As a result, science teachers will be better prepared to help their students meet the challenges of globalization on both the academic and personal fronts.

### **Design Thinking and STEM Education**

Research has shown the significance and reciprocal advantages of design thinking and integrated STEM knowledge. Integration of STEM pedagogical approaches has been cited in the literature as a means by which students can learn and develop design thinking (English, 2019; Fan & Yu, 2017). Experimental research was conducted by Fan and Yu (2017), who compared the performance of high school students in STEM technology courses. Students' talents were examined over 10 weeks while the course material and other crucial factors were strictly monitored. Students majoring in STEM fields in engineering outperformed those majoring in a technology education module in terms of conceived knowledge base, high-order design thinking, and project activities for engineering designs. Additional research and analysis highlighted the most salient distinctions between the two modules' design-thinking methods (Fan & Yu, 2017). The following research featured and described the beneficial and practical consequences of teaching STEM subjects together in high school. The research conducted by English provided a concise explanation of the positive outcomes associated with STEM education that was integrated into the curriculum and the teaching methods. Further, Fan and Yu devised an engineering design experiment to compare teaching modules across different groups of students. Critical thinking skills were observed to be utilized by gifted and talented students in integrated STEM activities based on the EDP in the following situations: providing explanations, making associations, questioning information, providing justifications, solving problems, thinking creatively, making generalizations, and attempting to persuade others (Sen et al., 2021). Similar benefits in students to learn and improve design thinking were revealed in the previous study (English, 2019).

### **Methodology**

This research employs the Design and Development Research (DDR) methodology described by Richey and Klein (2007). It is divided into three stages: Need Analysis (Phase I), Design and Development (Phase II), and Evaluation (Phase III). This study will solely discuss Phase I. The needs of the informants (Science teachers) were assessed using a needs analysis to develop Design-Thinking pedagogical model. McKillip (1987) described those needs are a value judgment that a particular group has a problem that must be solved. In this study, researchers employed the purposive sampling approach to identify informants with certain characteristics to obtain specific information from them (Palys, 2008).

Needs analysis is crucial to determine the primary research issue before developing a model (Saedah et al., al., 2013). In addition, needs analysis seeks to explore current problems and evaluate the necessity of designing a model (Mohd Ridhuan & Nurul Rabihah, 2020). The McKillip Discrepancy Model (1987) is used to assess the contrast between the actual condition and the desired situation. According to Mckillip (1987), the needs analysis phase entails the phase of identifying and analyzing the subject's needs, which will determine the results obtained. Identifying and analyzing needs is also known as identifying and offering solutions to existing problems. Face-to-face interviews, telephone interviews, and questionnaires are the three methods typically utilized in needs analysis (McKillip, 1987). This paradigm places emphasis on normative norms and professional judgement. It is also a model that has been widely adapted to several circumstances involving needs analysis, a model that is highly transparent and widely utilized, particularly in the field of education.

In this study, the needs analysis is the first phase in DDR. The researcher uses a qualitative technique with three experts' science teacher. An experts' science teacher needs analysis was done to determine the need for a Design-Thinking pedagogical model. Based on the literature study, an interview protocol was created. Before the interview, the protocol was validated for language, content, and quality. Face-to-face interviews allow the

researcher to dominate the discussion and get the informant's view (Cohen et al., 2018; Cresswell & Creswell, 2018). Experts are science educators with more than five years of experience (Berliner, 2004). Sampling informants to meet institution-set criteria: Consenting informants were interviewed and verbatim transcribed. All informants verified transcriptions before analysis, classification, and coding (Cohen et al., 2018).

## Results and Discussion

Based on the verbatim analysis of the transcriptions, all informants agreed that a design thinking pedagogical model for secondary school science teachers need to be developed.

Table 1. Demography of informants

Aspects	Category	Count
Experience in education fields	5-10 years	0
	11-15 years	2
	>20 years	1
Level taught	Form 1	1
	Form 2	1
	Form 3	1
Gender	Male	1
	Female	2
Workplace	Kuala Lumpur	2
	Selangor	1

According to Table 1, all of the informants chosen for this study are considered experts because they have more than 11 years of experience in the field. They come from a variety of workplaces, including Kuala Lumpur and Selangor. In addition, all the chosen informants have expertise in the required fields, including Science Education; thus, they are from science teachers of different levels thought in secondary schools.

All informants agreed that a design thinking educational model should be developed for secondary schools, as evidenced by an analysis of the interview transcripts. In addition, informants indicated why the design thinking pedagogical model need to be developed.

### The Needs to Develop a Design Thinking Pedagogical Model for Secondary Science Teachers in Malaysia

The needs analysis results indicated that a design thinking pedagogical model for secondary school science teachers was needed. This was supported even more by Informant 1's experience in the STEM and science fields. Based on their experience in the field science, Informants 2 and 3 had the same viewpoint:

*"...I'm trying to figure out how to implement a method or approach in my classroom that will enable Project-Based Learning (PBL), ensure that the learning objectives of the activities being carried out are accomplished, and allow me to evaluate and assess student progress in a way that appears fair and objective."*

*".....Yes, we need a teaching guideline that science teachers may refer to make sure implementing Project Based-Learning (PBL) appear more beneficial to teachers and students." (Informant\_1)*

This viewpoint is also confirmed by informant 2, who claimed that it is critical to develop a pedagogical model that facilitates more innovative and effective teaching by teachers, as shown below:

*".....I have attended design thinking training, but I could not use project-based learning effectively because there was no particular guide on how to implement it. If there is a model or guideline for teachers to follow, I will be able to execute science teaching and learning with creative solutions."*

*“.....In addition, I discovered that I could create a more engaging learning environment through design thinking and project-based learning. I feel that students will be motivated to finish assigned activities if they enjoy learning. In reality, students would be able to recall smoothly all taught knowledge.” (Informant\_2)*

In addition, it was determined that Informant 3's perceptions aligned with the purpose of this study and were rather direct as follows:

*“....Time constraints exist because teachers do not have sufficient time to implement project-based learning while teaching in the classroom. In addition, limits on student attendance due to the covid-19 pandemic and inadequate and limited ICT equipment restrict teachers' teaching ability.”*

*“.....Project-based learning and design thinking is a great way to get students interested in learning since they can get their hands dirty while doing something genuinely enjoyable. By making something creative, students can exercise their higher-order thinking skills. This is a place where students can incorporate their original ideas. Also, just by making one product, it fosters all the talents needed in the modern workplace.”*

*“.....Yes, a model that teachers may use as a guide is needed since teachers do not know how to implement teaching and learning design thinking in project-based learning. (Informant\_3)*

As indicated in the verbatim analysis of the interviews, all informants agreed that it was essential to develop a design thinking pedagogical model for secondary school science teachers as a flexible educational guideline to incorporate 21st-century abilities into the teaching and learning of sciences. Through this interview's findings, it is possible to conclude that all informants have reached a consensus about developing a design-thinking pedagogical model for secondary school science teachers. Their statements were supported by their expertise in their respective professions, science teacher. The conclusions of the performed needs analysis are consistent with those of prior research, in which the construction of a model was considered crucial since it provides a guide for teachers to integrate STEM into their classroom instruction (Dare et al., 2019; Muhammad Nasiru et al., 2018). The inputs of the first phase will contribute to the model development that will be applied during the study.

## **Conclusion**

Based on the research obtained, it can be determined that the needs analysis phase should be implemented as the initial stage of the Design and Development Research (DDR). Through needs analysis, most informants agreed that a Design-Thinking pedagogical model should be developed in secondary schools as a guide for science teachers to apply Design-Thinking to enhance the delivery of successful teaching and learning processes consistent with a student-centered 21st-century learning environment. Therefore, the development of this Design-Thinking pedagogical model can be included in the education system of Malaysia's 4.0 Industrial Revolution period to face the challenges of globalization.

## **Recommendations**

In conclusion, the findings of this study contribute to the body of knowledge and research on Design-Thinking in science education by providing the Ministry of Education, educators and instructors, parents, and science students with a better understanding of the possibilities. This study focuses solely on the need for Design-Thinking learning model for secondary science teachers. Therefore, the researcher recommends conducting more research to produce a design thinking pedagogical model in schools for disciplines other than science so that teachers have more options for implementing Design-Thinking based learning in schools. Future studies are suggested to concentrate on Design-Thinking in additional elementary and secondary school subjects other than science.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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## **Impact of Glass Ceiling Effect on Women Career Success with the Mediating Role of Work Family Conflict and Moderating Role of Perceived Organizational Support in Pakistan**

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**Abstract:** Women make up half of the world's population, but they continue to face significant barriers to success including the glass ceiling. It refers to the invisible professional hurdles that women confront in the workplace. Women encounter challenges in practically every field of business today, including positive successes such as promotions and awards, which jeopardize their status and role in the workplace. Although the glass ceiling has piqued the interest of researchers, some authors have noted that theoretical models have made little effort to develop an understanding of the phenomenon and its implications. The main objective of the research was to find out the impact of glass barriers on women's career advancement in academia, as well as to analyze the mediating role of work-family conflict the mediating linkage between the glass ceiling and women's career success and perceived organizational support as moderating to reduce the negativity between conflict and women careers. The data was gathered using an adopted questionnaire with a sample size of 325. The included hypothesis under this research is being tested using sampling criteria. According to the results of the study, all hypotheses were accepted. Theoretical and managerial implications were also discussed along with future recommendations and limitations.

**Keywords:** Glass-ceiling effect, Women career advancement, Work family conflict and perceived organizational support

### **Introduction**

Increased female labour force participation is crucial for poverty reduction, economic growth, and women empowerment around the world. Over the last 20 years, female labour force participation has climbed to 63.5 percent, which is still below the national average (Kalaitzi et al., 2017). Women have evolved to contribute half of the human capital in a competitive economy (Fathy & Youssif, 2020). Gender parity is nearly impossible to achieve in this competitive market, indeed company's most valuable resource is its personnel, either male or female. Women all over the world are gradually building a global gender-equality movement to achieve equal rights and opportunities based on talent rather than gender discrimination (Ganiyu et al., 2018). Unfortunately, developing countries like Pakistan continue to face similar barriers to women's job advancement. There are numerous factors that impede advancement and higher positions at work, and the glass ceiling is one of them. It's an impenetrable barrier that prevents women from progressing up the academic ladder, regardless of their qualifications or achievements (Glass Ceiling Commission, 1995). Glass ceiling is a more intangible barrier to career advancement than other internal and external factors (Pothuraju & Alekhya, 2021). Similarly, there are number of societal, organisational, and cultural factors that contribute to these invisible glass barriers, all of which have a negative impact on women's career advancement (Sharma & Kaur, 2019). Women face obstacles in almost every field of life, including academia that is one of the most valuable sectors in any community,

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women in this sector having difficulty achieving top-level positions. These consequences have been discussed extensively in management science literature (Babic & Hansez, 2021), but women's career advancement has received little attention.

Pakistan is currently among the worst countries in terms of gender parity, only ahead of Iraq, Yemen, and Afghanistan. Pakistan has failed to improve its gender parity score in the last sixteen years, according to the "Global Gender Gap Report 2021" (the gender parity score was 0.553 in 2006 and is 0.556 in 2021). The glass ceiling in women's careers persists at the national and international levels, and it differs by country (Lakmali et al., 2020). Previous empirical evidence showed that women's endeavors are strongly discouraged in Asian countries such as Pakistan (Lathabhavan & Balasubramanian, 2017). Invisible barriers such as gendered leadership construction and cognitive bias, accordingly both position and evaluate women less favorably than men, many women experience difficulties in advancing in their careers. (Hussin et al., 2021).

Many women pursuing a professional career in management face job promotion discrimination (Perales, Pérez-Ledo & Chordà, 2021). Indeed, establishing a fair merit-based promotion system is one of the most common issues that organizations face around the world; despite enormous efforts in this regard, promotion systems in many organizations appear to be skewed. Because of these flaws in the system, women have fewer opportunities to advance in their careers (Eghlidi, F. Karimi, 2019). A number of studies have found that women are less concentrated in universities than men in lower ranks, that more women work in temporary positions, and that they earn less than men with comparable qualifications (Lieberman et al., 2018). It refers to the invisible and insurmountable barrier that prevents women from advancing to upper management, decision-making, or high academic positions, regardless of their achievements and competencies in career advancement (Ozturk & Simsek, 2019). Today, many women balance parenthood and family life with full-time paid job. Although having various roles might benefit both genders' overall well-being, competing obligations can also lead to role conflict and undesirable psychological repercussions. When one role's performance impairs one's capacity to function well in another, there is inter-role conflict. This dispute is known as work-family conflict when it occurs predominantly at home. This is the proportion to which a person is subjected to work-related pressures that are incompatible with family obligations. (Babic, & Hansez, 2021).

Although some researches have shown that the glass ceiling have a negative impact on several concepts, such as employee intention to quit, Stewart et al., (2011) the organization. These barriers and ambiguities in role of women at work-home is increasing day by day. Indeed, rare previous studies Tran, (2014), to the best of our knowledge, has explored the impression of work-to-family conflict (WFC) and glass-ceiling barriers in one's career success. To fill out this gap, this study considered work-family conflict as a mediator in the relationship between glass ceiling effects and career success. Existing research has shown that there is a misconception about women managers that causes their superiors to overlook them as non-potential candidates for top management jobs. Among these views are the incompatibility of the responsibilities of mother, wife, and manager, as well as the fact that becoming a manager necessitates an excessive amount of investment, flexibility, and travel. In keeping with this notion, multiple previous studies have revealed that managers believe that work-life conflict is stronger for women than for males. However, this assumption has consequences because it reduces the organization's perception of women's competency in the workplace, lowering the likelihood of female promotion (Son, Sohn & Chung, 2018).

The conservation of resources theory is one possibility for explaining this connection (COR theory, Hobfoll, 1989, 2011). This idea holds that the prospective or actual loss of resources, which they highly value, poses a threat to both people and groups. People are thus impelled to absorb, acquire, retain, conserve, defend, foster, and expand valuable resources in order to meet anticipated future demands (Hobfoll, 1989). People do, in fact, "use important resources in order to undertake the regulation of the self, their operation of social contacts, and how they organise, behave, and fit in to the wider framework of organisations and culture itself," as stated by Hobfoll (2011, p. 117). It's also feasible that female managers make resources investments in an effort to overcome glass ceiling-related barriers but that these investments prove ineffective. It is unpleasant to spend resources to deal with a scenario when resources are lost because doing so may reduce a person's supply of resources (Hobfoll, 1989). Poor physical and/or mental health is a result of this spiral. The perception of WFC rises as a result of these detrimental effects, which include negative emotions, diminished psychological wellbeing, and eventually diminished mental and physical health (Taylor, Huml, & Dixon, 2019). Therefore, based on the above, authors postulate that work-family conflict mediates in the relationship between glass-ceiling effect and women's career advancement in Pakistan academia.

Furthermore, according to the organisational support theory (Eisenberger, Huntington, Hutchison, & Sowa, 1986), employees develop a broad understanding of how much the organisation values their contributions and

cares about their well-being, which is related to perceived organisational support–POS. Employees who perceive organisational support as dispositional increased their level of confidence and interest in their work (N. Kurtessis, 2015). Employees believe support from the business, that someone is there to help them by providing helpful comments or being available to talk about specific workplace issues, which motivates them to push their professional boundaries and maintain their family and work balance (Chenga& Yi, 2018). According to previous study, POS is important in altering organisational links, which is supported by this citation (Cheng et al., 2016; Han et al., 2016).

Social exchange theory (Blau, 1964), on the other hand, demonstrated that positive signals between employees and relationship exchange help them meet their challenging tasks (Dany, 2014). Employees rely on two types of social support that are distinct but related to help them perform well at work and in their careers. The first is work-related support, which is measured by perceived organisational support (POS). We believe that POS can supplement valuable aspects of one's work and family balance and compensate for individuals' lack of other career-related competencies (Hobfoll, 2011). Through POS, individuals can gain competencies and skills, increasing their adaptability (Savickas & Porfeli, 2012). It refers to the extent to which POS addition assists employees in managing job-related challenges, whether female or male, and high (self-esteem), as a result of which women become strong enough to overcome any bias during jobs, increasing their chances of career success (Ocampo et al., 2018). Similarly, employee empowerment in organizations is still a hot topic in management. Despite the fact that there are numerous studies in the current literature focusing on enhancing thriving behaviors, there are still gaps in understanding the nature of these behaviors and identifying how perceived organizational support reduces the negative relationship between work family conflict and career success of women in Pakistan's educational sector.

Employees feel confident in their organisations and make advantage of the support they have in today's competitive environment, which helps them to increase their level of satisfaction and capability to handle disagreements at work, such as work and family conflict (Akgunduz, Alkan, & Gök, 2018). High perceived organisational support lowers the likelihood of a task being incompatible with someone's life, according to numerous studies in the literature (such as Ibrahim et al., 2016). Joo, Hahn & Peterson (2015) revealed that employees will continue to work in their organisations as long as their organisations care about their well-being and assign them essential operational tasks. Employees that receive organisational support become competent of doing duties at work. This study adds to previous research by filling many gaps in the literature on perceived organisational support as a moderating factor in the association between work-family conflict and women's career success.

## **Literature Review**

### **Glass Ceiling Effect and Women Career Advancement**

The term "glass ceiling" became well-known and popularized in 1986. The Working Woman Report," which examined the status of female employees in corporations (Sorkin, 2018). For many years, the glass ceiling has been a hot topic in almost every country. Females and other minorities were found in lower-level positions with low pay and no room for advancement, according to the Labor Force Survey (Pakistan Bureau of Statistics, 2017). The glass ceiling effect hinders women's career advancement. Women in Pakistan, in particular, continue to face invisible barriers to career advancement at the middle and upper levels, and women continue to be underrepresented in top-level positions. The glass ceiling has a significant impact on women's professional development satisfaction and shapes their perceptions of it. A lack of social relationships and social capital will limit women's career success. Career advancement is a dynamic variable and indicator that changes over time; as a result, negative attitudes toward career advancement are common (Masood, Nawab & Shafi, 2021). Career advancement entails climbing the corporate ladder and increasing one's earnings and income.

Women all over the world face insurmountable challenges in achieving top-level positions while meeting all of the requirements associated with unequal professional advancement (Jauhar & Lau, 2018). According to previous research, glass/invisible walls at work jeopardize women's careers, and workplace gender disparities persist. They can no longer obtain executive positions at work (Ngaage et al., 2020). As a result of the preceding discussion, it is expected that the more severe the obstacles, the more likely women will be rejected at the top of the hierarchy. As a result, we devised the following hypothesis.

**H1: The glass ceiling effect has a negative impact on women's job advancement in Pakistan's education sector and the state of Azad Kashmir(AJK).**

## **Work-Family Conflict as a Mediator**

Work family conflict is characterized as "a type of inter role conflict in which the role pressures of the work and family domains are mutually incompatible in some way" (Greenhaus & Beutell, 1985, p. 77). Individuals are often compelled to choose between prioritizing family (work influencing family or WFC) and work (family affecting work or FWC), sacrificing one position in order to achieve self-acceptance with their role in each environment (Greenhaus & Powell, 2006). Women tend to experience higher levels of conflict than men. Due to high level of conflict women become unable to take advancement opportunity and the inability to change employment. There are numerous factors that generate higher level of WFC, some invisible barriers at work also become the cause of work family conflict. Scholars have also identified that women and men are thought to be equal all over the world, but the reality is quite different; previous studies found that women are trapped in the inferior gender. It also reveals employees who already face incompatibility issues at work and are heavily influenced by these intangible barriers and face numerous challenges (Soumya & Sathiyaseelan, 2021). Many organizations are built on employee-to-employee trust. When a person has doubts about himself, the goal is hampered. No objective or solution can be achieved if there is no trust in their abilities, which can lead to negative psychological consequences like stress, WFC and job burnout (R.r& Sathiyaseelan, 2019). Women who frequently face disagreements find themselves in an unbalanced position. In such situations, they tend to think low of themselves and lose faith in their own worth. At workplace glass barriers increase the chances of conflicts in their jobs (Williams, 2017). Hidden barriers and disputes between family and job decrease meeting career goals (Branden, 2021). In fact, recent studies in management science literature showed that disputes between job and family, reduces employees level of esteem that ultimately reduce the chances of career success and gaining a competitive advantage (Hirschi et al., 2018; Hobfoll et al., 2018). Research has supported that employees who have work family conflict badly affected by glass ceiling barriers at that time supervisors perceives that subordinate perform below average and the subordinates ultimately received fewer promotions—a new way of understanding the glass ceiling. Empirical evidence is mounting that the boundaries between work life and family life are now blurred. Conflict in workers family and work life reduce the chances of promotion at workplace (Hoobler, Hu& Wilson, 2010). Conflicts faced by women at work and family unable them to break through invisible barriers and are unconcerned about their professional development and achievement (Lin et al., 2018). The current study hypothesized that work-family conflict faced by women as a mediator between the glass ceiling and career success.

## **H2. Women's work family conflict mediates between the glass ceiling effect and women's job advancement.**

### **POS as a Moderator**

One of the most often used concepts in psychology research is organisational support. The popularity of organisational support is due to its crucial theoretical function as a way to lessen stress and enhance health and wellbeing (Cohen & Liari, 2009). Work-family conflict is one such strain, which happens when obligations to one's job or family make it challenging to meet obligations in a different capacity (Greenhaus & Beutell, 1985). When employees are unable to deal with issues and barriers that exacerbate their deficiencies, diminish their true personality, their perception of support from organisation is a significant factor in dealing with all (Zu & Yang, 2018). Employees develop a perception of how much their organisation helps them to maintain their values in various aspects such as reward, recognition, and promotion, as well as to meet socioemotional needs (Kurtessis et al., 2017). In literature, perceived organisational support defined as companies taking initiatives to support their employees in exchange for relationships and meeting their needs at work (Cropanzano et al., 2017), and with this support, employees reduce incompatibilities between tasks. A positive relationship between the organisation and its employees fosters a sense of worth in the employees, and they seek out challenges. Previous literature and theories support employees' positive perceptions and support from organisations. Positive links between organisations and their workforce are associated with positive behaviors and attitudes. This study contends that positive organisational support reduce conflict, allowing them to overcome invisible barriers and seize opportunities for career advancement.

Within the work domain, researchers have traditionally distinguished organization-level support, such as supportive organizational perceptions, from support received from specific individuals in the work context, such as supervisors and coworkers. these studies revealed that sources of support significantly linked with work family conflict (French et al., 2018) Thus positive support from organization reduce level of work- family conflict. If a person believes/perceives that he or she is a valuable member of the organisation (Hobfoll et al., 2016) might handle arguments in both domains.

Organizations are regarded as significant, and thus serve as a valuable resource for developing one's self-assessment. Employee psychological well-being is thought to be moderated by perceived organisational support. Previous studies focused on perceived social support with little consideration for POS as a moderating factor. This gap is highlighted in the current study, which considers perceived organisational support as a novel contribution between work-family conflict and career advancement due to glass barriers, particularly in the academic sector. We hypothesized as follows, considering all of the preceding discussion from previous theories and empirical studies.

**H3: Perceived organizational support moderates the relationship between work-family conflict and women's career advancement.**

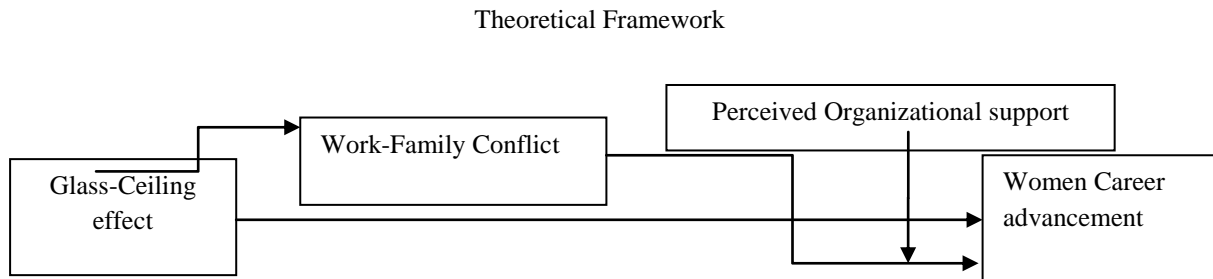


Figure 1. Theoretical Framework

## Methods & Material

The current study used acceptable research methodologies and techniques that were consistent with the research topic to obtain the best results on the given hypothesis. Using quantitative research techniques, the importance of women's career advancement in Pakistan's academic sector, including the state of Azad Kashmir, was investigated. According to Neuman & Kreuger (2003), quantitative research is the most acceptable research technique for identifying difficulties through deductive reasoning, and this study follows suit. Furthermore, the data for this study was gathered through a time lag research method. To avoid reverse causality, data was collected over a three-week period with three-time lags.

## Data Collection Procedure

We gathered information from professional women in middle-level positions in Pakistan's educational sector in order to solve the problem and achieve the desired outcome. To achieve better results, consider hiring female employees instead of male employees. The research survey was carried out using a previous researcher's questionnaire. Prior to conducting research, we obtain permission from the head of the relevant institute and an approval letter in order to maintain the ethics of excellent research and to assure them that the responses of each respondent should be kept confidential with an attached cover letter. With these criteria, acquiescence and social desirability biases are less likely (Spector 2006). Furthermore, rather than leaders and executives, female employees are the unit of analysis for data collection.

Academics are taken into account in the current research paper. The self-administered questionnaires are distributed using convenience and purposive sampling methods. A convenience / Purposive non-probability sampling design was used to recruit participants. The goal of these sampling designs is to reduce costs and time while producing better results for the current research study. It may be necessary to obtain information from specific target groups in order to obtain information from those who are most readily or conveniently available. The sampling in this case is limited to certain types of people who can provide the desired information, either because they are the only ones who have it or because they meet certain criteria. As a result, data was collected from female employees about their hidden barriers that harmed their careers, and the best and most appropriate sampling design for the current study was convenience / purposeful. In Pakistan, there are still stereotypes and taboos regarding female workers, which is why we collected unbiased data through this. The first time lag data was collected on demographic variables such as age, gender, qualification, marital status, and tenure on specific organizations, glass ceiling effect, and gender discrimination of women in educational sector from Rawalpindi, Islamabad, and the state of AJ&K, and the same time interval data was assessed for women career advancement. Before distributing the questionnaires, each one was coded individually so that data could be obtained from the same respondents at each time interval after the initial time lag. Because some respondents completed the first

and third time lags, it was preferred to reject half-finished questionnaires rather than half-completed questionnaires, and the authors kept 350 completed questionnaires for statistical analysis.

### **Measurements:**

In this study, each variable of interest was measured using a previously designed scale. When collecting data, women employees were given a medium amount of consideration. The scales were created using a 5-point Likert scale, which is routinely used in social science research. It was separated into two sections, A and B, each dealing with demographics and study variables.

### **Glass Ceiling Effect**

The glass ceiling effect questionnaire is adapted from Luzzo and Mc Whirter's final section (2001) and employs a 5-point Likert scale ranging from strongly disagrees to agrees.

### **Work- Family Conflict**

Work-to-family conflict was assessed using the appropriate SWING subscale (Geurts et al., 2005). This nine-item subscale evaluates the negative impact of the professional situation on family life (e.g., "I'm irritable at home because my work is demanding"). People responded on a 5-point Likert-type scale (0: never to 4: always). Cronbach's alpha was 0.87.

### **Perceived Organizational Support**

Eisenberger et al. measured the POS scale as an 8-item scale (1986). The scale's alpha reliability was 0.93.

### **Women Career Advancement**

The WAMS instrument addresses attitudes toward women's career advancement. The Turkish version of WAMS is made up of 20 items developed by (Peters, 1974), 10 of which are related to gender stereotypes and the other 5 are related to women's career advancement.

### **Variables Controlled**

Age (1=20-30yrs, 2=31-40yrs, 3=41-50yrs, 4=over50yrs) was one of five control factors in the current study. Gender (1=male, 2=female), education (1=bachelor, 2=Masters, 3=M-phill, 4=PhD), marital status (1=unmarried, 2=married), and tenure (1=1-5yrs, 2=6-10yrs, 3=11-20yrs, 4=over 20 yrs) are all factors to consider.

### **Findings & Results of the Study**

This study primarily collected data and analyzed the results using quantitative research methods and techniques. Does the glass-ceiling effect impede women's job advancement in order to accomplish the study's goal and answer the desired question? Statistical analysis was also used to see if work-family conflict plays a role in the causal relationship between glass barriers and women's advancement. Furthermore, the authors interpret the findings by identifying POS as a moderator in the association between poor WFC and women's professional success. Furthermore, with a sample size of 350, data was obtained for these Pakistani twin cities and the state of Azad Kashmir. Before testing the hypothesis, we evaluated the normality of the data and discovered that it is normally distributed with a bell-shaped curve and meets the normality assumptions. Then, using a reliability test, examine the consistency of the data and all study variables. Alpha values indicate that all observed and latent variables are consistent. Glass ceiling effect had a Cronbach's alpha value of .93 on a 9-item scale ranging from strongly disagree to strongly agree, self-esteem had a value of .88 on a 10-item scale, perceived

organizational support had an alpha value of .85 on an 8-item scale, and career advancement had an alpha value of .90 on a 20-item scale.

Authors also examined the validity of selected instruments after assessing the internal consistency of data using a self-administrative questionnaire. Confirmatory factor analysis has been used to examine the structure and validity of the data factor analysis (CFA). Few items have low loadings and do not load on their own variables during CFA. Progression in your career Due to a shortage of loading on its own factor, three items, Q18, Q14, and Q9, had to be removed. The two items measuring perceived organizational support, Q6 and Q7, were not loaded, which could indicate that they examined different features or that the respondent did not comprehend these things correctly. Root mean square error of approximation (RMSEA), incremental fit index (IFI), Tucker-Lewis coefficient (TLI), and comparative fit index have all been used to assess the model's fitness (CFI). The current study included four research variables: one independent, one dependent, one mediator, and one moderating variable.

Table 1. Confirmatory factor analysis results

	ChiSquare	df	CMIN/Df	RMSEA	IFI	TLI	CFI
Initial model	3661.787	1665	1.677	0.050	0.912	0.884	0.901
Modified model	3455.554	1660	1.599	0.047	0.881	0.899	0.876

The table above shows several values of the initial model based on criteria such as RMSEA.050, IFI.912, TLI.884, and CFI.901. Although several alterations were made to obtain the goodness of model fit, there were only a few chances to obtain new values. All of the adjusted values satisfy the threshold condition, enhancing the model's validity for hypothesis testing (Hair, Ringle&Sarstedt, 2013). After running the model, the RMSEA =.047, which is less than .05, identified the model's fitness, and the IFI=.881, TLI=.89, and CFI=.8 all met the threshold values that determined the model's fitness for hypothesis testing.

### Correlation Analysis

The correlation coefficients (r) between variables have been shown in the given table by considering the Pearson that identified the association between two or more than two variables.

Table 2. Correlation Co-efficient (r)

Sr#	Variables	GCE	WFC	POS	WCA
1	GCE	1			
1	WFC	.259**	1		
3	POS	-.663**	-.344*	1	
4	WCA	-.045*	-.470*	.754**	1

Note: \*means  $p < 0.05$ ; \*\*means  $p < 0.01$

The above table determined the significant correlation between glass ceiling effect and WFC ( $r=.259$ ,  $p < .01$ ). There was a significant negative correlation between glass ceiling and POS ( $r=-.663$ ,  $p < .01$ ). Current data identified the negative but significant correlation between glass ceiling effect and women career advancement ( $r=-.045$ ,  $p < .05$ ). Work-family conflict and perceived organizational support was negatively as well as significantly correlated with each other ( $r=-.344$ ,  $p < .05$ ) same correlated with women career ( $r=-.470$ ,  $r < .01$ ). Thus, result showed positive and significant correlation between POS and women career advancement ( $r=.754$ ,  $p < .05$ ).

### Hypothesis Testing

H1: Glass ceiling effect is negatively related with women career advancement

Table 3. Un-standardized co-efficient for Structural Path

Structural Path	$\beta$	S.E	P-Value
GCE $\longrightarrow$ WCA	-.452	.087	.001

\*\*\* =  $p < .001$ ,  $\beta =$  (Un-standardizedBeta), SE= standard error

The above table exemplified that glass ceiling effect is significantly and positively related with women career advancement ( $\beta = -.45$ ,  $p = .001$ ). The statistical results showed that greater the women employees in public and private academic sector face glass ceiling the less will be their chances of growth in their career thus the hypothesis 1 has been accepted.

### Mediation Analysis

H2: Work-family conflict mediates in the relationship between glass-ceiling effect and women career advancement.

Table 2. Regression results for H2

H2	Direct path	B	P-value		
	GCE → WCA	-.452	.001		
	Specific Indirect effect				
	GCE → WFC → WCA	-.314	.023		
	Total Effect			<u>UL</u>	<u>LL</u>
	GCE → WCA	-.839	.000	-.011	-.234

The above mentioned table statistical values of direct effect of glass ceiling on women career advancement with regression coefficient ( $B = -.452$  &  $P < .05$ ) which was reduced from total effect due to mediation it means work and family conflict of women mediates and H2 accepted

H3: Perceived organizational support moderates the relationship between women work/family conflict and women career. The greater the POS the lower negativity between WFC and women career advancement.

Table 3. Correlation results for H3

Structural path	Co-efficient	P-value
WFC → WCA	.39	$P < .001$
POS → WCA	-.33	$P < .001$
Itrm_Term1 (POSX WFC)	.42	$P < .05$

Existing theories and literature examined that high organizational support build and boost the confidence and WFC that they maintain their career, take opportunities, and continue for career growth. The interaction term results ( $\beta = .42$ ,  $p = .05$ ) showed that POS highly positive impact in the relationship between WFC and women careers, as a result H3, is accepted.

### Discussion of the Study

This study was conducted in Pakistan's educational sector, with data collected from major cities and the state of Azad Jammu and Kashmir to determine whether or not these women believe they are in the minority in the educational sector. Education, as we all know, is one of our community's most prestigious fields. Half of community development is accounted for by education and literacy rates. With the passage of time, women's taboos are no longer the pinnacle of our culture. They contribute far more than men, but there are still some invisible barriers in place, such as glass ceilings, in a number of industries that prevent them from obtaining and advancing to top-level positions. The authors develop a theoretical framework using existing HR literature and theoretical support to highlight the negative consequences of these barriers. Following the examination and interpretation of the research hypothesis, some final results that attempted to close the gap were obtained. The findings show that the glass ceiling has a significant negative impact on women's job advancement. The findings back up a previous study by Pothuraju and Alekhya (2021), which discovered that these are intangible barriers to professional advancement that are difficult to overcome.

Furthermore, women continue to hold a small proportion of decision-making positions, and vertical inequality in the workplace is most commonly manifested as glass ceilings. Women face challenges in almost every field, including academia. Unfortunately, the glass ceiling in women's careers continues to exist at both the national and international levels, and it varies by country (Lakmali et al., 2020). All of these other researchers' ideas support the current findings. This study looked at several underlying aspects that previous studies had not fully described, such as the true interlinking mechanism that links glass-ceiling restrictions with low career success chances. Besides which, this study uncovered a number of gaps that serve as a link between the independent

glass ceiling effect and women's professional advancement. As a result of the current study, employees with incompatibilities between work and family life face higher glass ceilings in terms of gender discrimination and job advancement. According to previous research, employees who are a part of glass ceiling occurrences may experience sadness, low self-esteem, low morale, and a lack of drive to perform better in their careers (Soumya & Sathiyaseelan, 2020). Although previous research (Velez et al., 2018) discovered that arguments between tasks employees encounter and inhale glass walls that prevent them from advancing to top-level positions, current statistics are consistent with Rahim et al., (2018) study, which discovered that women's disparate career objectives and glass-effects impede their job success. Numerous studies support our findings that employees with low self-esteem, self-worth, and even low regard at work are more likely to face open discrimination and make little progress in their careers.

As a result, this research paper contributes to the literature by taking into account certain external factors that may reduce the negativity and glass barriers that women face on their path to success. Although several studies on the glass ceiling have been conducted, this aspect is rarely considered as a moderating influence. The relationship between WFC and women's career advancement was found to be moderated by perceived organisational support. The statistical findings supported the hypothesis that employees who perceive more support from their employers will become more confident and strive to take advantage of opportunities at work. When working women feel more supported by their employers, they gain confidence and increase their chances of achieving their desired position (N. Kurtessis, 2015). According to Chenga & Yi, (2018) employees perceive support from the organisation, that someone is there by providing helpful feedback or being available to discuss specific workplace difficulties, which encourages employees to redefine their job boundaries and maintain their level of esteem. The findings also show that POS add-ons help employees, whether female or male, manage job-related obstacles and have low chances of conflicts, because of which women become strong enough to overcome any bias in the workplace, increasing their chances of career success (Ocampo et al., 2018). According to recent findings, increased employee perceptions of organisational support moderate and mitigate the negative relationship between low self-esteem and women's career advancement. As a result, women in academia may benefit as well.

## **Conclusion**

The current research study discussed the factors that reduce the ratio of women's career success. Working women in Pakistan's academic sector have conducted research into why they face challenges and barriers to achieving top-level positions. There have been numerous previous studies in management science about career adaptability and growth, but there has been little focus on factors that prevent employees, particularly women, from reaching top-level positions. Underdeveloped countries face these issues and attempt to manage female workforce participation in organizations. The glass ceiling remains an invisible barrier that has a negative impact on women's career success, as examined in this study. Furthermore, the study supports the notion that women face high level of conflict between job and family life are unable to seize opportunities. The invisible glass ceiling that prevents women from achieving career success is obscured by women's incompatibilities between job and family. In this study, women's WFC acts as a bridge between glass ceilings and job advancement.

As a result, having a bad attitude at work is no longer necessary. There are several things that can help women maintain their conflicts and reduce negativity. According to this study, female workers believe they will receive a positive response from their organization and leaders, so they strive to maintain and reduce these conflicts. Low WFC and perceived organizational support increase the likelihood of job advancement. This study was carried out in academia in order to obtain a better result and understand how much glass barriers reduce the chances of career advancement. With the help of statistical tools, data was collected from middle-level employees, including administrative and non-administrative staff, to understand where and how much they face these challenges. The findings revealed that invisible barriers harm women's careers and prevent them from advancing to top hierarchical positions.

## **Implications of the Study**

The study's findings are important for Pakistani policymakers, organizations, human resource employees, researchers, administrators, academia, and other stakeholders interested in increasing women's career opportunities. To retain employees and maintain productivity, organizations must understand their habits and attitudes. Based on the findings of this study, try to develop new strategic methods for treating women and men



equally. This research assists the company in realizing that treating female employees requires a unique strategy. They, too, deserve to be promoted, and their full potential should not be squandered.

If this issue is resolved, their organizational commitment and job satisfaction will improve, benefiting the company's profitability and growth. Furthermore, a successful career and increased professional advancement increase self-esteem, which leads to happiness. Women who are happier are better able to raise their children to be better, more effective adults and to provide a positive home environment. As a result, such reforms may provide women with greater bargaining power in the commercial and governmental sectors, as well as the ability to work as second-income earners, resulting in family support for a woman's career.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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## **Balancing Sustainability Factors Affecting the Implementation of Digital Libraries of Malay Manuscript: A Proposed Framework**

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**Abstract:** The aim of this study is to explore and understand the factors that will affect the implementation of Digital Libraries of Malay manuscripts in libraries. The paper discusses the issues related to the risk management of digital resources in Malaysian documentary heritage institutions. The study will have employed a descriptive-qualitative approach to explore how the DLMM is operated in five selected information institutions in Malaysia. Three types of data collection techniques were used: interviews, observation, and document analysis. The semi-structured interview was used as the main data collection technique. The paper's findings and discovery are significant in highlighting the crucial elements which need to be addressed to ensure the sustainability and successful implementation of digitization projects. The paper's findings and discovery are significant in highlighting the crucial elements which need to be addressed to ensure the sustainability and successful implementation of any digitization project. The findings of this paper contribute toward the dissemination of new knowledge specifically in the management of digital preservation of documentary heritage available in Malaysia.

**Keywords:** Digital library; Digital preservation; Risk management; Documentary heritage; Malay manuscript

### **Introduction**

One of the most significant current discussions in the information management context is digital library especially with the advent of pandemic COVID-19 and the closing of libraries around the world. A considerable amount of literature has been published on Digital Library (DL). However, far too little attention has been paid to the Digital Library of Malay manuscript (Zahidah, 2011; Ding, 2014; Awang, 2020). Malay manuscript is defined as hand-written document in Jawi script from early 14th century till early 20th century. Study on the development of the DLMM in many senses is vital for digitization professionals, digitization managers, and librarians who would like to pursue digitization and digital preservation projects, especially those agencies that have the collection of Malay manuscript namely the National Library of Malaysia, National Archive of Malaysia, UM library, UKM library, USIM library, IIUM Library, UNISZA library, DBP, Terengganu Museum and Islamic museum particularly to get themselves acquainted with the challenges.

While research on the digital library has been greatly reported in the literature, gaps still exist in a number of areas. However, there has been little discussion about the challenges for the implementation of DL focused on Malay manuscript collection in developing countries from the perspective of practitioners. The research to date has tended to focus on digital library of book, journal and thesis collection (Ghamouh, 2015; Agosti, 2018; Singeh, 2020).

Studying the factors that affect the implementation of DLMM has become an important issue in determining the value of digitization. There have been a limited number of studies that have been conducted to analyse the

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economic, social, cultural, technological and organizational factors that affected the implementation of DLMM in libraries or digitization of documentary heritage (Voutssas, 2011; Masenya, 2020). The digitization professionals, digitization managers and librarians should have proper knowledge about the factors that affect the implementation of DLMM before they decide to implement DLMM in their institution to reduce unnecessary cost.

Based on the previous research on DL, it was seen that there have been conceptualized and proposed several frameworks for the design, development, evaluation and interaction of digital libraries (Levy and Marshal, 1995; Moen, and McClure, 1997; Marchionini and Fox, 1999; Saracevic, and Covi, 2000; Fuhr, 2001, Blandford et al, 2004). However, it is not comprehensively including the economic, social, cultural, technological and organizational aspects in their framework. As stated by Manaf (2010) although there is a Department Digitisation Policy developed by the National Library of Malaysia in the year 2000, this policy is not comprehensive enough to serve as a guideline by cultural institutions. It does not include the selection criteria, the principles guidelines and the most important elements, the standard and protocol to be used by the institutions in their digitisation projects.

## **Literature Review**

Documentary heritage represents a large proportion of the world's cultural heritage. Many of these resources have lasting value and significance, and therefore constitute a heritage that should be protected and preserved for current and future generations. UNESCO (2010) defines documentary heritage as items that are moveable; made up of signs, codes, sounds and images; capable of preservation; reproducible; and they are products of deliberate documentation process. A further definition is given by Edmondson (2015) who describes documentary heritage as comprises those single documents – or groups of documents – of significant and enduring value to a community, a culture, a country or to humanity generally, and whose deterioration or loss would be a harmful impoverishment. The significance of a document may become clear only with the passage of time. For each state, its documentary heritage reflects its memory and identity, and thus contributes to determining its place in the global community. This definition is close to that of Robert (2016) who defines heritage as “our legacy from the past, what we live with today and what we pass on to future generations”.

Manuscript can be categorised as one of valuable asset and historical documentary heritage. Malay manuscript is defined as a handwritten document in the Jawi script which surfaced in the beginning of the sixteenth century and ended in early twentieth century with the coming of the west and the introduction of printing machines. Siti Munirah (2018) has defined MM as “all kinds of hand written materials in any of the Malay languages using the jawi script concerning the Malays and their civilization that are at least a hundred years old”. According Chambert-Loir (2011), Malay manuscript tradition comes from the tradition of Arab and Indo-Persian. Manuscripts generally refer to unpublished original sources and have the characteristic of being unique. Unlike books, journals and other resources typically collected by libraries, manuscripts typically do not exist in multiple copies (Hilmi, 2007). Most of the Malay manuscripts were written in Jawi scripts. Historically, Jawi scripts are taken from Arabic language and Persian and it had been added five new letters that made it suitable for Malay to use. In earlier times, Malay manuscripts were usually written by royal and religious people (Zahidah, 2013; Samsu, 2021). According to the historians, when British came to Malaysia, the Malay manuscripts had been spread all over the world. The number of collections that had been found had developed from time to time. Prof Dato’ Ismail Hussin, an expertise in Malay manuscript stated that it was about 2000 of manuscripts that had been taken by Raffles, Farquhar, Maxwell, Klinkert and Voorhoeve on the 19th century.

For writing material, the Malays used pen or kalam derived stem of plants of which the most commonly used were kalam resam and kalam kabong (Mariani, 2001). Kalam resam was made from the stem of fern resam (*gleichenia linearis*) and the kalam kabong was made of a black hard bristle from various palmae plants namely enau or kabong (*arenga pinnata*) and gomuti palm (*borassus gomuti*). As for the ink, it was locally manufactured from the ingenuity of the Malays. It was largely made from oily or torch lamp black or burnt charcoal mixed with gum and honey. Another source of ink was from a local fruit called majakani. Coloured ink was extracted from certain plants such as water hyacinth for purple ink, the fruit rind of mangosteen for brown ink and safflower for red. The luxuriant colours from the fauna enhanced the beauty of illuminated manuscript.

The writing activity is believed to start from a string of writing on a stone. Like the stone inscriptions in Terengganu. Its influence has had an impact on the writing of this manuscript. In addition, foreign traders also influenced the writing of this manuscript. The paper used was brought from Arab countries, China, India and Europe while the ink was brought from China (National Library, 1997). As for the Arab traders, in addition to

trading, they were also active in spreading religious knowledge so that the space was open for the locals to record by composing whatever they learned.

Reflected by the ability of the traditional society at that time, highly skilled and capable of producing so many manuscripts. It should be noted that the manuscript is not just a diary, but the knowledge contained in it is very broad (Awang, 2020). It covers all aspects of daily life. Its content is comprehensive and extensive covering all fields such as law, administration, constitution, religion, prophecy, medicine, beliefs, storytelling as well as the history of the origin of the state, religion and descent. The authors of this script could be said as knowledgeable and educated person. They are considered as the expert in their subject.

Malay manuscripts are scattered and kept by the respective institutions and individuals in Malaysia, Brunei, Indonesia, Britain, Germany, France and South Africa. Several institutions that have Malay manuscripts in Malaysia such as the National Library of Malaysia, National Archive and Malaysian Institute for Language and Literature (Dewan Bahasa dan Pustaka) have published series of catalogs of Malay manuscripts as reference documents for users. The distribution of Malay manuscripts is shown in Figure 1.

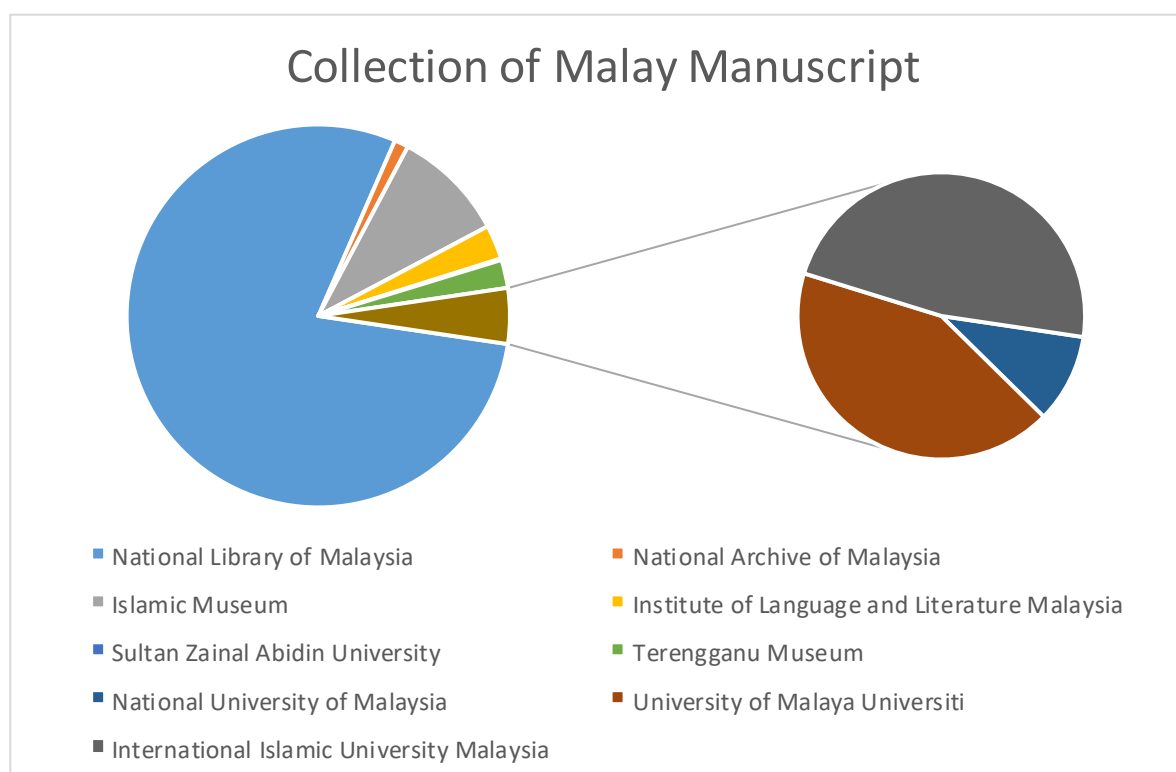


Figure 1. Collection of Malay manuscript in institution in Malaysia.

It is of great importance to make cultural heritage available to people, particularly those who participate in disseminating the cultural heritage, notably the written cultural heritage, such as scholars, researchers, students, and so forth. For many years, libraries, museums and archive centers have played a significant role in preserving, organizing, and disseminating mankind's cultural heritage. Malay civilization, particularly in its golden age, which lasted for around fourteen centuries, has contributed much to subsequent civilizations, and some of its rich cultural heritage remains. Malay manuscripts are one of the remaining legacies of Malay civilization. This heritage has lasted until the present day because it is part of mankind's heritage, and many scientific fields still rely on this heritage as a fundamental source of knowledge.

In respect of the preservation of manuscripts, the Memory of the World Programme launched by UNESCO in 1992 is formed aimed at focusing world attention on the need to safeguard endangered and unique library and archives collection, to make it available for future generations and to improve its accessibility globally. It also aims to stimulate a responsible approach to the sources from which our historical consciousness grows and to contribute to the general availability of information about our history and culture. The Programme also seeks to develop products based on this documentary heritage and make them available for wide distribution, while ensuring that the originals are maintained in the best possible conditions of conservation and security. It

establishes and maintains a World Register identifying documentary heritage of international, regional and national standards. As of December 2018, 381 documentary heritages had been inscribed in the Register, with 274 of these from Europe and North America and 116 from Asia and the Pacific as displayed in Figure 2.

## MEMORY OF THE WORLD

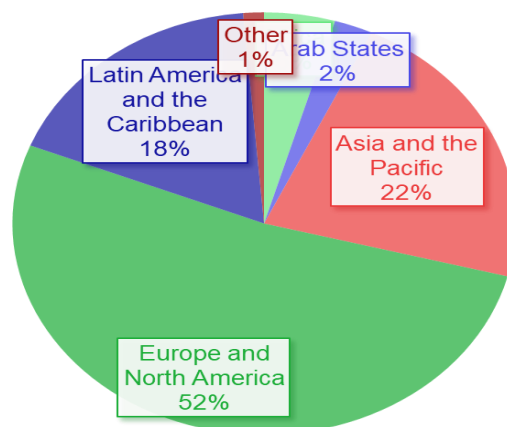


Figure 2. Documentary heritage in MOW

Malay civilisation, particularly in its golden age, which lasted for around fourteen centuries, has contributed much to subsequent civilisations, and some of its rich cultural heritage remains. Malay manuscripts are one of the remaining legacies of Malay civilisation. This heritage has lasted until the present day because it is part of mankind's heritage, and many scientific fields still rely on this heritage as a fundamental source of knowledge.

Malay civilization such as the Malacca, Pattani and Aceh which is scattered in the south eastern part of the Asian continent has its own unique heritage treasures (Amer, 2017). Although these treasures were once not so valuable because they are not envisaged commercial value, but its aesthetic value that stores a variety of tips and 'story' ancient ancestors of the Malays should guarantee the security of these treasures in the hands of the Malays. But the delay in understanding this fact can cause a large amount of money to be spent later to collect it back after the passage of time. It is not merely a theoretical predictable-bit or dire predictions are exaggerated, but a fact that has happened and bitter lesson that already had swallowed up by the Malays as a precious treasure, including manuscripts and historical documents, was taken home by Dutch after their arrival in the archipelago in 1596.

This incident is the most obvious example, and transfer the treasures of the Malay heritage to some other European countries such as Germany, France, Britain has led it to today 'buried' in them and be their property. As a result, these valuable treasures cannot be taken or collected back except by paying a very high price. Hassan Omar said in a report in The Straits Times (11 July 2006) has proved this when he quoted the words of the Minister of Culture, Arts and Heritage Minister Datuk Seri Dr Rais Yatim when delivering his opening speech at the International Seminar on Malay Manuscript in 2006 in Kuala Lumpur said, "We try to bring it (the Malay Manuscript) return but the price offered direct mediator does not make sense. So we don't buy it "(Amer, 2017).

Malay manuscripts serve as an important source of understanding the intellectual and literary heritage of the Malays. Some of these works were later re-published in printed format when printing was introduced first in Java then Penang, Malacca and Singapore in the 19th century, before the existence of a writing system, using only traditional Malay oral tradition to develop a story for them. However, this oral tradition is seen as not trying to be a legacy that is present in tangible form, instead it appears to be a 'little tradition'.

Since libraries have been close temporarily (some are partially open) since the outbreak of pandemic COVID 19 as could be seen in Figure 3, most libraries offer their services via digital as it is advised for society to practice social distancing and to avoid libraries from being too crowded (Rahimi & Rosman,2020; Bhati,2020). Other than sharing the information and awareness via the social media and official websites, most of the libraries in the world are focusing on their campaign to encourage their users to use the digital services. For example, the National Library of Spain is promoting its digital content that can be used to support education. On the other hand, the New York Public Library gives the initiative for users to use a mobile application to borrow research databases and access a multitude of online resources. The library provides a wide collection of digital offerings,



including e-books for borrowing on their Simply E application, research databases, and access to a multitude of online resources.

	Cases	Deaths
Malaysia	362,173	1,333
Brunei	219	3
Indonesia	1,571,824	42,656
Singapore	60,692	30
Thailand	34,575	97
Philippines	884,783	15,286
Myanmar	142,596	3,206
Cambodia	4,696	33
Timor-Leste	1,046	1
Laos	52	0
Vietnam	2,707	35

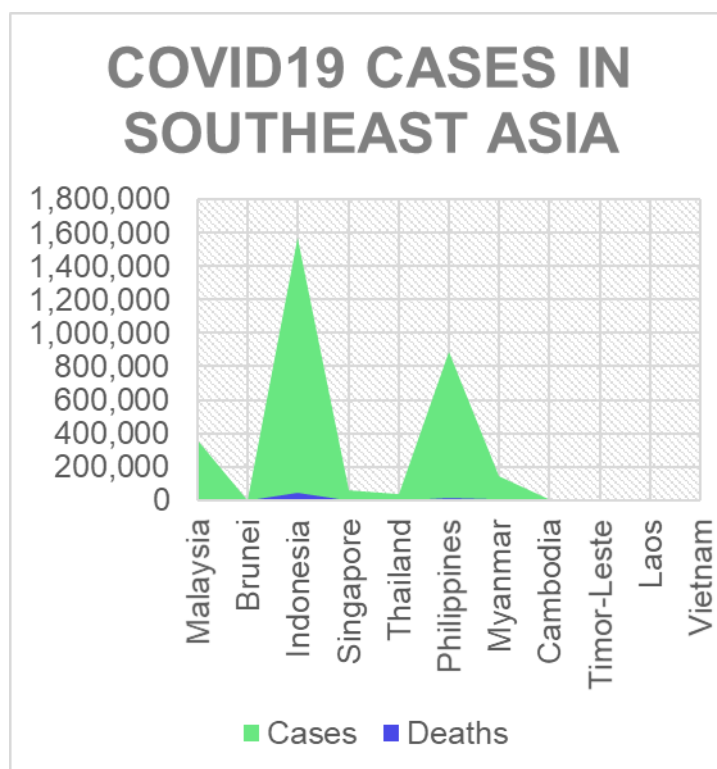


Figure 3. COVID19 cases and deaths in Southeast Asia updated 13 April 2021

Over the last decade, the social facilities integrated to traditional digital libraries have been seen. Users not only can access information by basic features but also they would need more advanced services from digital libraries (Gaona-García et al. 2017). As Pérez (2017) pointed out digital libraries will extend various services in order to support for knowledge sharing between users. An extended definition of a digital library from a workshop based on the social aspects is given by (Islam, 2014) “1. Digital libraries are a set of electronic resources and associated technical capabilities for creating, searching and using information 2. Digital libraries are constructed, collected and organized by (and for) a community of users, and their functional capabilities support the information needs and uses of that community.”

With rapid development of information communication and technology, manuscripts can now be preserved electronically through digitization for future keep, simultaneously making it accessible globally (Suleiman, 2013). Many libraries are venturing into digitization project which is new and costly. Rapid changes in computer technology offers a multitude of application devices for digitization. It is crucial to study and select the appropriate technology suitable for the needs of manuscript as the manuscripts are fragile and may endanger its physical condition. The most important thing is to define the formal rules which would be worldwide acceptable. Furthermore, this format must fit with the necessary standards for dissemination of data via Internet (Zahidah, 2013; Tatjana, 2017).

Manaf (2010) emphasizes that the use of hardware and software to capture an item and convert them into bits and bytes, matches by a quickly developing set of practices for describing and retrieving digital objects, is giving form to the talk of a “library without walls”. The main reasons to digitise are to enhance access and improve preservation (Isa, 2018). By digitising their collections, cultural institutions can make information accessible. It also allows users to search collections rapidly and comprehensively from anywhere at any time. Digitisation can also help preserve precious materials. Making high-quality digital images available electronically can reduce wear and tear of fragile items (Anau, 2019). Hence, the main objective of digitisation initiatives is to enhance and improve access to information. Indirectly, it can also ensure preservation of the information using the most appropriate technology. Both the preservation and increase in accessibility complement one another as access incites protection and preservation ensures access (Baomah, 2017).

Ding (2014) pointed out that, an increasing number of Malay manuscripts in libraries especially those in private collections, are disintegrating. This problem has been with the Malay World since the very beginning. Deterioration may be due to acid embrittlement of the paper, unsuitable storage environment, biological attacks or human negligence and mishandling (Hilmi, 2007). A number of these manuscripts are already brittle to a point of being unusable. As mentioned by Van Lit (2019), flooding, terrorism, bomb threats, explosions, transportation accidents, earthquakes, fire and war also prove dangerous threats to the written cultural heritage. It has been well publicized how much effort has been expended in order to restore the losses experienced by Bosnian and Kosovan libraries. The artefacts in Baghdad National Museum and Baghdad National Library are no longer available for the benefit of future generations and humanity as a whole. The world cultural heritage is continually at risk because of natural and unnatural disasters.

Many digital library initiatives focus on preserving various cultural heritages. Often, the initiatives comprise of various materials such as pictures, maps and paintings, and manuscripts are one of the materials included. Shafi (2004) listed some Western and Indian digital library of manuscripts initiatives; among others MASTER (Manuscript Access Standards for Electronic Records), The Digital Scriptorium (<http://sunsite.berkeley.edu/scriptorium/>), Oxford University Manuscripts, (<http://image.ox.ac.uk>), Medieval Manuscripts of Syracuse University (<http://libwww.syr.edu/digital/collections/m/Medieva>), The Bibliotheque National De France (<http://www.bnf.fr/enluminures/>), “Medical Manuscripts in NLM”, “European Manuscript Server Initiative” (EMSI), and “Unesco Memory of World”. Those projects have used photographic and digital methods to develop a full or partial archival copy of the manuscripts available on-line using different software with JPEG format for image processing in association with different metadata initiatives. Shafi (2004) argues that these attempts could be very useful in evolving a common strategy for digitization of vast manuscripts resources.

The proliferation of electronic information; the dwindling budget for acquisition of library stocks; the desire to access materials in remote locations; the quest for collaboration, partnerships and resource sharing; and the ever increasing cost of preserving analogue materials, and so on, are some of the forces that prompted digitization of archives and records (Anundhra, 2017; Pandey, 2014). The aim of digitizing library materials is for preservation and easy access by any user or researcher. Digitization improves access to library resources. By digitizing library collections, information will be accessible to all instead of a group of researchers. Digital projects allow users to search for collections rapidly and comprehensively from anywhere at any time. Digitization makes the invisible to be visible. Several users can access the same material the same time without hindrance. It also removes the problem of distance, as users do not have to travel to libraries that possess the hard copies of library materials before they can access and use such materials (Ukwoma, 2019).

## **Issues and Challenges in Implementing Digital Library of Malay Manuscript**

A considerable amount of literature has been published on the challenges and barriers in implementing DL in libraries. These studies including the management of digital assets presents new challenges to the library community in terms of administering complex hardware and software, but mass digitization has not changed the fundamentals of library services (Pandey & Kumar, 2020). The ephemeral nature of digital items will require more expense and staff attention in meeting preservation commitments, but the relationship of user needs to item selection and organization remains essential. The complexities involved in supervising intricate information systems optimized to meet specialized user needs requires a strategic approach to management that takes into account the role of digitized collections within the larger context of the library and parent organization (Joselt, 2019). Guiding users to the items most suited to their information needs becomes a very different task as service points become more remote, but the digital environment brings with it increased possibilities to meet the traditional goal of providing personalized services to every user (Anuradha, 2017).

Furthermore, digitization of library resources poses a great deal of challenge to the major stakeholders, that is, the library management, employees and library users. Despite everything that digitization can accomplish, there are some good reasons librarians and archivists in developing countries may regret embarking on such project. Not everything in the collection is worthy of digitizing because the idea of an entire archives or library being digitized is a long way process. Successful digital project are the result of careful planning and evaluation of collections and the digitization of only those items that will provide the greatest benefits to the users.

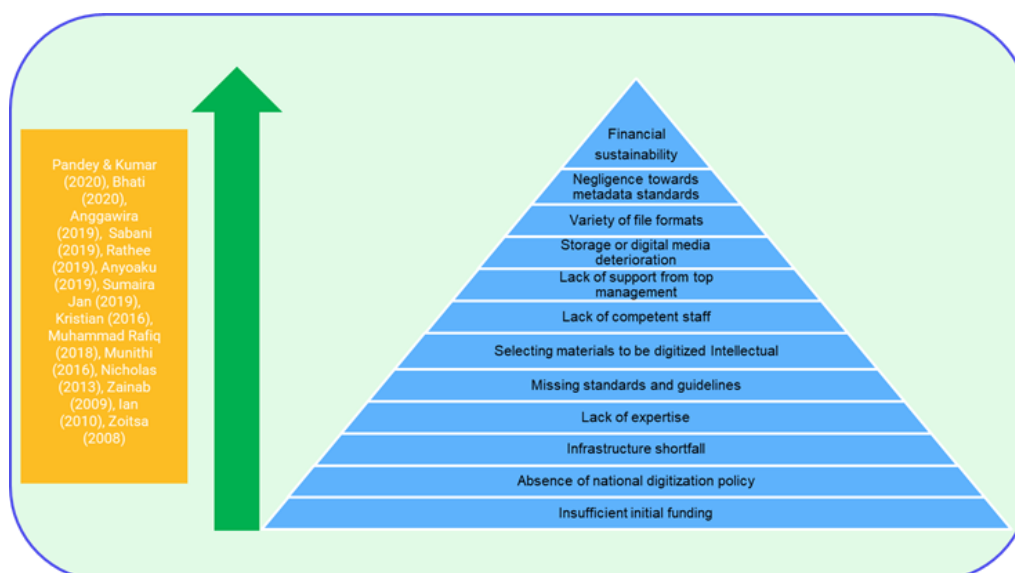


Figure 4. The mapping of barriers to digitization or digital library

### **1. Insufficient initial funding**

A primary reason why libraries and archives fail in digitization projects is a lack of funding or working capital (Pandey, 2020; Khan, Shafi and Ahangar; Rafiq, Ammen, and Jabeen, 2018). Pandey (2020) states that initial funding was including the cost of digitization in-house that is, with its own employees, equipment and within its facilities or to hire a provider specialized in these services. Similarly, a study by Khan et al (2018) found that inadequate funding for the library is one constraint against practical digitization of library materials.

### **2. Absence of national digitization policy**

There is a significant need for standard policy or national-level policy, rules, and methods to bring uniformity. In the absence of policy, professionals feel confused, eventually leading to a loss of consistency in their work. Mesui, Andrade, and Waizenegger (2019) emphasised that despite awareness of Information Communication Technologies, there is a lack of ICT policy in heritage institutions in Tonga. Similarly, Rafiq, Ammen and Jabeen (2018) explored that lack of established digitization plan, policies and procedures in Pakistan as one of the most important barriers in implementing DL.

### **3. Infrastructure shortfall**

As infrastructure is the backbone of any countries progress, in the same way, the success of any project in the libraries cannot be imagined without proper infrastructure. Asogwa, Ali and Ezeani (2021) showed that only 12.5% of libraries in Nigeria have enough infrastructure for digitization and rest 82.5% do have not enough infrastructure. In the same context, Rafiq, Ammen and Jabeen (2018) in their study found that insufficient technological infrastructure as third major barriers to digitization initiative in Pakistan.

### **4. Lack of expertise**

Lack of expertise is a crucial reason for the failure of any project or organization. Especially in the field of digitization and digital library, the lack of IT experts will lead to the unsatisfactory output of the project. Rachman (2018) found lack of expertise or limited technical knowledge was one of the key challenges in digitization especially in Indonesian's libraries. Likewise, lack of technical expertise was the fourth in the list of the obstacles in digital heritage preservation in the study done by Pandey (2020). According Anuradha (2017), inadequate technical expertise is prevalent in many developing countries. There is shortage of personnel/human capital. Few librarians with computer science qualifications (computer engineers) work in libraries, hence the consequent frequent break down of ICT facilities and disruption of services in digitized libraries.

### **5. Missing standards and guidelines**

In any organization, standards and guidelines are the protocols for professionals. Like business organizations, libraries also require standards and guidelines for keeping up uniformity in their administrations and practices. In this context, previous studies reported severe negligence in the implementation of standards and guidelines and termed it as one of the hindrances in the success of digitization projects. The survey conducted by Masenya (2019) in Africa analysed the responses of libraries with respect to the availability of standards on preservation

and revealed that only 14.3% of libraries follow de facto standards while 85.7% do not support any standard. A few of them were even not aware of any standards.

#### **6. Selecting materials to be digitized**

One of the significant tasks in the process of digitization and digital preservation is selection of materials to be digitized and is usually finalized at the managerial level. However, managers often face difficulty in selecting material to be digitized or preserved. Rafiq and Ameen (2019) describe the top three selection criteria for digitization, namely, academic importance, increasing access to the documents, and reducing damage to the original. In another study by Liljeström (2018) in Sweden emphasized that selection of the analogue material to be digitized by the respondent libraries is steered first and foremost by high-level values of the primary criteria of significance, e.g. historic, scientific or research potential.

#### **7. Lack of competent staff**

A competent workforce is one of the crucial forces for the completion of a project. Without sufficient and skilled staff, no project can be imagined. According to Jan (2019), lack of staff was another problem that contributed to challenges in the implementation of digitization policy in mostly university libraries in India. Likewise, Anyouka (2020) reported that 52.2% of the university libraries in Africa have lack of competent staff. This is a problem for many digitization projects in Africa, as studies in libraries in general and university libraries in particular have consistently reported inadequate level of information and communication technology skills as one of the major problems facing libraries in Africa.

#### **8. Lack of support from top management**

The administration is the backbone of an organization. The primary role of the administrator is to make connections among different sections and employees of the institution. Management is responsible for policymaking, decision making, and taking positions on current issues the organization is facing. A study conducted by Ogenga (2015) in Kenya analyzed lack of awareness and support from top management as a challenge in digital preservation. His study used structured questionnaires and interview schedule to collect data from 150 graduate students, 25 academic staff and 25 library staff. Findings from his study revealed that the management has not put up policies with regards to access and use of the repository resources. It shows that lack of support from top management has huge impact to the failure of DL project.

#### **9. Storage or digital media deterioration**

Deterioration of digital media is responsible for the disappearance of, or inaccessibility of digital information in the long run. This is because media deteriorates or decays within few years after digitization. Another challenge is that digital media get lost during disaster or virus attacks. Anuradha (2017) analysed the reason why re-digitization is inevitable is the likelihood that electronic resources created in previous years using older technologies may not be accessible or compatible with the new technologies. Furthermore, Toyo (2017) found that deterioration of content is a big concern in the conservation of manuscripts. In his study he sample size was forty-seven (47) library staff (professional and para-professional) from John Harris Library. The finding was that 97.9% of the respondents agree that deterioration of digital media as the major challenges in DL project.

Undoubtedly, digital archives should be transcribed every ten to twenty years to ensure that they will not become technologically obsolete (Joselt, 2019). The continuous changes in computer hardware and software cause technological obsolescence which is a threat to digitization and digital preservation. It causes the loss of the means to access to information in digital form. Technological obsolescence is caused by continuous upgrade of operating system, programming language application and storage media.

#### **10. Variety of file formats**

Computer files are used to store digitised data on storage devices, and the format of a file dictates its future readability. It is strongly advised that the digitization project manager should adopt open file formats or at least those file formats whose backward compatibility can be assured. Studies have reported a high level of variation in the storage file formats in different heritage organizations for the same type of documents. Liu and Yang (2007) delineated that for storage of pictures in Chinese libraries out of 21 libraries only 9.3% employ a single picture storage format, while 23.8% libraries use two picture storage formats, 28.6% libraries use three picture storage formats, and 38.1% libraries support more than three picture storage file formats.

#### **11. Negligence towards metadata standards**

The discoverability of digital resources is greatly aided by metadata. In the current situation, digitization and preservation of data are insufficient; it is critical to organise and interoperate that data. Gkoumas (2018) analysed that one of the challenges in digitization in Greece is negligence towards metadata standard. In his study, he found that the lack of systematic documentation of scientific material and metadata in digital libraries

has reduced the distribution and stewardship of research output. Similarly, Mannheimer (2017) stated that de-contextualization due to insufficient description or metadata is one of the factors that threaten digital materials in USA.

## 12. Financial sustainability

Digitization and digital preservation activity require a high level of investment from a financial point of view as the processes involve hiring outsourced human resources and procurement of equipment such as scanners and servers. In the reviewed literature, insufficient funds was reported as a significant constraint globally (Masenya, 2020; Anuradha, 2017; Peter, 2019; Rahman & Islam, 2020). Anyoku (2019) found that funding of projects like building IRs and sustaining the project is a major challenge universities face in Nigeria. Out of the 23 respondents, 56.5% indicated that there is no long-term funding in their digitization project. In the same context, a study done by Rafiq and Ameen (2018) identified major barriers as financial sustainability. In his study, two-thirds of the interviewees mentioned finances as the most important barrier in digitization activities.

Matrix for research objectives/research question					
RQ2: What are the challenges that libraries face as they relate to the implementation and development of DLMM?					
	Masenya T. (2020)	Akoiki-Owoyele (2020)	Rahman (2020)	Gkoumas (2018)	Khan (2017)
Purpose	To investigate the factors that can inform the implementation of sustainable digital preservation	To examine protection of Africa's cultural heritage through digital preservation	To build a model for Digital Content Management (DCM) in agricultural university libraries in Bangladesh	To analyze the challenges and obstacles of developing a digital archive of scientific publications	To explore the essential digital competencies for developing and managing digital libraries
Country	South Africa	Africa	Bangladesh	Greece	Pakistan
Theory (Principle)	Open Archival Information System (OAIS) reference model	N	N	N	N
Research design	A quantitative	A mixed method	A mixed method	A quantitative approach	A quantitative research
Strategy / research method	Online survey questionnaires	Survey and interview	Online survey questionnaires	Survey	Questionnaires
Sample	Twenty-seven academic libraries	66 staff and seven heads of various institutions who were either Directors, Deputy Directors or Heads of Departments	70 teachers and 175 students filled	636	132 university librarians
Finding	The findings show that academic libraries in South Africa are significantly affected by the changes in the digital environment	Cultural institutions in Nigeria are yet to make serious effort towards digital preservation of cultural heritage	The findings reveal some hindrances to the establishment of DCM, such as lack of constant power supply, limited bandwidth speed, some users have lacking fundamental IT knowledge and shortage of digital resources, in addition to some suggestions for improving DCM in these libraries.	The findings of this inquiry indicate that financial and human resources insufficiency, inadequate time frame and lack of promotion, have hindered the success of the project.	The findings of the study showed that digital competencies for developing and managing digital libraries fall into three main categories: digital competencies for developing digital libraries; digital competencies for managing digital libraries; and digital competencies to protect digital contents. The
Suggestion	Proposes a conceptual model for preservation of digital resources in academic libraries	The need for cultural institutions in Nigeria to be more focused on digital preservation of cultural heritage.	DCM model for agricultural university libraries of Bangladesh has been proposed and	A possible solution to cover the operational and management expenses, while offering quality digital services, is to charge subscribers with a small fee for using digital content	Joint efforts are required by library schools, library associations and different training groups to develop digital skills of university librarians.

## Factors Affecting the Implementation of Digital Library Malay Manuscript

We need to know about the factors that affected the implementation of DL of documentary heritage. According to Voutssas (2011), the factors that affect the preservation of long-term digital documentary can be categorized as economic, social, cultural, technological and organizational factors. The first type of factor that affects the preservation of digital documents is made up of the cultural factor. The main elements in this factor are the lack of sensitivity and understanding of the problem. Many of us tend to think that the dark ages are long gone, and that in particular our contemporary age, called by many the "information society" or "knowledge society" is far from that situation, and that today more than ever we are aware of the value of information. A lot of information is produced, distributed and consumed every day. Today many companies and millions of people live from the information. But, like many other resources, it is one thing to consume and another to preserve. In this society, we consume our natural resources disproportionately, but we preserve little of them.

The second type of factor that affects the implementation of DLMM is economic. The first cost to establish during these processes is the cost of digitizing. This is the cost of converting a document that is in a traditional medium to a document in digital form. In some libraries, the cost of producing a digital material is also considered within these costs, which does not necessarily come from a "traditional" original. When digitizing documents, the library always has two paths: one, to digitize intramural that is, with its personnel, equipment

and within its facilities. The second option is to hire a provider specialized in these services. The decision must always be made under the best economic criteria that satisfies a pre-established quality criterion for that digitization. This is very important: a digitization project should not be decided simply based on the greater economy; a quality criterion must also be included. Ignoring this principle is the best way to get the institution a collection of poor quality digital material, which most likely will not serve as planned or which will have to be digitized again in a certain period of time.

Once the librarian has determined the cost of digitizing, he must move on to the second cost involved: the cost of editing. This cost is established based on leaving the documents as a useful digital object, according to his specifications. Once the librarian or digitization manager has determined the cost of editing, it is necessary to go on to establish the cost of registering; that is, the cost of preparing a formal record, catalogued graphically speaking, for each document. Obviously, there would be no point in creating our digital collection - large and important as it may be - if it cannot be located when required or if it should invest a lot of time in decanting information not relevant for our purpose. The next cost to be determined for the collection to be digitized is to store. It is about establishing how much it will cost the institution to have the collection stored on technological media, once it is digitized. To do this, it is necessary to first reflect on the fact that there are two main storage mechanisms, and that they directly affect the price: online storage and offline storage.

The last of the costs to consider is the upgrade. Although this cost is never present when creating a new digital collection, it is inevitable that it will appear from time to time in our preservation costs, and will affect our annual budget from time to time, therefore we must keep it in mind to include it in future years when relevant. The third type of factor that affects the preservation of digital documents is made up of the cultural factor. The main elements in this factor are the lack of sensitivity and understanding of the problem. Many of the librarians tend to think that the dark ages are long gone, and that in particular our contemporary age, called by many the "information society" or "knowledge society" is far from that situation, and that today more than ever they are aware of the value of information (Mingers, 2018). But are they really? Many might be tempted to say yes, since according to current statistics – a lot of information is produced, distributed and consumed, every day more. Today many companies and millions of people live from information. But, like many other resources, it is one thing to consume and another to preserve. In this society, we consume our natural resources disproportionately, but we preserve little of them. Does the same happen with documentary resources?

In reality, globally, as a global society we have neglected the preservation of our information (Rahaman, 2018), especially, regarding the digital information that we have been producing in the past decades. In general, there is a lot of ignorance about digital preservation. At the corporate level, the librarians or digitization managers are only just beginning to generate projects and initiatives to organize the preservation of these documents, long after the problem has been created and when many documents disappear every day (Warren & Matthews, 2019). Furthermore, notable preservation projects are being developed only in the most prosperous and developed societies, which are therefore from a few countries and regions. In the rest of the world they practically do not see this type of project at the level of decision-makers and covering large sectors of society. They generally exist at the level of some academic or cultural organizations and that in an incipient and little coordinated way. This phenomenon between countries and regions further deepens the previously mentioned "digital divide" between these more developed countries and those that are not so developed, and between people with greater educational and economic capacities than those who do not have them (Mingers, 2018).

Even at the level of those responsible for collections, very few are actually aware of the problem and who have the knowledge and resources to deal with it (Rahman, 2020; Warren & Matthews, 2019). To compound the situation, most people think that it is an exclusively technology problem, which is seriously misleading, it is not actually the main problem. To illustrate this, in the case of the "US National Endowment for the Humanities" - US National Endowment for the Humanities or NEH-, in 2003, this fund provided the Cornell University Library with resources to develop a management training program for preservation. Prior to the training workshops, the attendees, people from 110 institutions, participated in a study for this purpose. In a question related to the degree of preparedness that they observed in their institutions regarding digital preservation projects, the majority pointed out as the main threat to digital materials the lack of policies and plans to preserve them. As a second cause, the lack of resources for that purpose, as a third threat, insufficient support from the intermediate command levels; only up to the fourth place was technological obsolescence mentioned as a threat and in the fifth place the lack of knowledge and experience in this regard appeared as a threat (Anyaku, 2018).

Technological factors have to do with the rapid and constant change of devices and technological aspects related to electronic information. These are the factors related to the environment of that digital information, such as the equipment and programs that are required to reproduce them. Special mention should be made of the operating

systems and multiple formats that have been created for the representation of various digital documents in all their types: text, audio, static and moving images, etc., and that appear and disappear with increasing rapidity. Whereas, social factor affected the implementation of DL as Colin Webb has stated that digital documents must be understood on four levels: as a physical phenomenon, as logical codes, as conceptual objects with meaning for human beings, and as a set of essential elements that must be preserved to offer future access to the essence of each of those objects. It can be clearly seen that the last two levels that he mentions have eminently social components.

Organizational factors have to do with the top management support, IT expert and staffing. At a more local or meso level, the size of the organization, infra-structure, organizational readiness and culture, capabilities and beliefs of the workforce were also identified as important when considering the application of the identified factors (Fennelly et al., 2020).

## The Research Objectives

The research objectives are as follows:

- To explore the development of digital library of documentary heritage in libraries.
- To explore the factors affecting the implementation of DLMM in libraries.
- To develop a framework of Digital Library of Malay manuscript for libraries in Malaysia.

## Proposed Research Framework

This research seeks to explore the development of digital library of documentary heritage. This research is significant to the library management discipline, addressing the gap between Malay manuscript management and its challenges in the implementation aspect. It will specifically tackle the economic, social, cultural, technological and organizational factors that will affect the implementation of digital library of Malay manuscript.

The main purpose of the study is to analyse the factors that affect the implementation of digital library of Malay manuscript. To accomplish this, it is important to explore the issue of the implementation of digital library of Malay manuscript from various angles to gain a holistic picture. Accordingly, the research aims to explore the current development of DLMM in local, South East Asia and international countries.

It sets the foundation for the research framework illustrated in figure 5, which demonstrates the factors that affecting the implementation of Digital library of Malay manuscript in libraries.

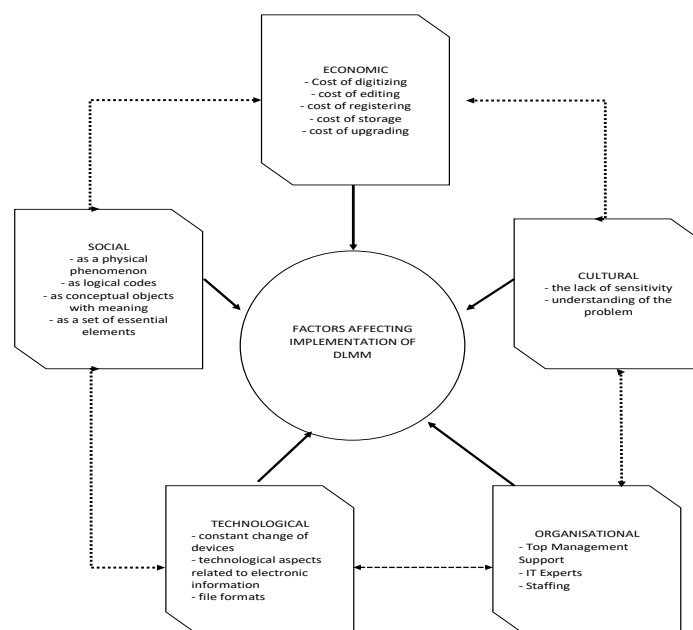


Figure 5. Proposed framework for DLMM implementation

## Conclusion

Through this study, it is obvious that the digital library field is a heterogeneous domain. The paper's findings and discovery are significant in highlighting the crucial elements which need to be addressed to ensure the sustainability and successful implementation of any digitisation project. The findings of this paper contribute towards the dissemination of the new knowledge specifically in the management of digital preservation of documentary heritage available in Malaysia. Moreover, this study is very significant to professionals who are involved in archiving the digital documentary heritage as it can be a guide for managing risks in preserving the valuable digital resources. The result of this study can be a practical tool of managing risks not only for digital documentary heritage but also to all documents in digital format. In the context of community, this study will also attempt to foreshadow the needs of community who are now conducting digital-based research that requires full-text analysis or large aggregations of "big data" (IFLA Rare Book and Special Collections Section, 2014).

## Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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## Components and Predictors of Psychological Wellbeing in Young Adults

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**Abstract:** Psychological wellbeing, which refers to the overall healthy functioning of a person, is a crucial asset. It is a combination of effective functioning and feeling good of one's surroundings. To achieve and maintain psychological wellbeing is very important for any stages of life, especially for young adults. Young adults go through multiple significant transitions in life. The main aim of the current study was to discover the components and predictors of psychological wellbeing of young adults and develop an effective intervention program to enhance their psychological wellbeing. The study was carried out in three different stages. A mixed-method design was implemented to conduct the study. The 42 items Ryff's Psychological Wellbeing Scale was chosen in the first stage for its optimal usability to measure psychological wellbeing. It needed to be adapted for the Bangladeshi population before conducting the study using this tool. So, in the first stage the adaptation took place. The English and Bangla Psychological Wellbeing Scale had a significant positive correlation. In the second stage Bangla Psychological Wellbeing Scale was administered to a 301-representative sample of young adults. The goal of the second stage was to identify the factors related with psychological wellbeing. In the third stage of the current study aimed to create an effective intervention program to improve the psychological wellbeing of the young adults. This study reinforces the six-factor model of psychological well-being by Ryff (1989) in the design of psychological wellbeing program of young adults.

**Key words:** Psychological wellbeing, Young adults, Psychological wellbeing scale

### Introduction

Psychological wellbeing or mental health has been acknowledged as equal footing with physical health for a holistic wellbeing. In recent years, the positive aspects of mental health have been focused on PWB rather than treating or preventing mental health concerns. A new goal in mental healthcare is the promotion of wellbeing (Keyes, 2007; Seligman & Csikszentmihalyi, 2001; World Health Organization, 2011). However, there are currently many definitions of well-being (Dodge, 2010) with the two main concepts being subjective and psychological. Subjective wellbeing (SWB) depends on a hedonic framework where positive experiences situated in the center. It's showed that the satisfaction of life is combination of balancing positive and negative emotions (Biswas-Diener, Kashdan, & King, 2009). The standards that use to judge the SWB of the people were not theorized in this framework. Therefore, Carol Ryff introduced the concept of PWB with the intention to develop theory-based indicators of positive human functioning which consistent with a eudemonic perspective of happiness (Ryff & Singer, 1996).

### Psychological Wellbeing

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PWB has been described as the cornerstone of mental health. According to the World Health Organization (2011), mental health is “a state of wellbeing in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community”. While traditionally, PWB has been defined by a lack of symptom distress (i.e., lack of depression, anxiety, and other symptoms of mental disorders); over time, the term has taken on a more positive definition (Magyar & Keyes, 2019). PWB has been recognized as more than just an absence of distressful symptoms. Recent models of PWB have been designed the basic aspects of positive functioning. Major components of PWB include empowerment; recovery-oriented elements such as hope, self-initiation, purpose in life, individual, environmental and systems-based sources. Subjectively, perceived dimensions of positive functioning are autonomy, environmental mastery, self-acceptance, etc. Recently, researchers have focused increasingly on PWB (Fernandes, Vasconcelos-Raposo, & Teixeira, 2010; Schmitt, Postmes, Branscombe, & Garcia, 2014; Springer, Pudrovska, & Hauser, 2011). Generally speaking, PWB represents the state of individuals whose lives are going well. It represents a combination of feeling good and functioning effectively. PWB is compromised by extreme or enduring negative emotions which interfere with everyday functioning (Huppert, 2009).

### **Components of Psychological Wellbeing**

The basic components of PWB are based on three models: hedonic wellbeing (the pleasant life), eudaimonic wellbeing (the meaningful life), and social wellbeing. Researchers have recently begun to question the potential costs of this distinction between the hedonic and eudaimonic aspects of wellbeing (Biswas-Diener et al., 2009) and have begun to observe the integrating of the theories and components of hedonic and eudaimonic wellbeing into a comprehensive model of flourishing mental health (Keyes, 2005).

Based on these major components, Ryff (1989) reviewed work from developmental, humanistic and clinical psychology. She presented a model of psychological (eudaimonic) wellbeing that is made up of six components: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. This model of eudaimonic wellbeing is developed on the assumption that any individuals take action to function fully and realize their unique talents. These six dimensions of eudaimonic wellbeing includes positive evaluation of self and individual's past life, a sense of continued self growth and development as a person, the belief of one's life is purposeful and meaningful, the possession of quality relations with others, the capacity to effectively manage one's life and surrounding world, and a sense of self-determination (Ryff & Keyes, 1995).

According to Waterman (1984) and Ryff (1989), the word "eudemonia" was mistranslated as "happiness." Carol Ryff's (1989) research shifted the focus away from a subjective to an objective understanding of PWB. Ryff's work is theoretically and conceptually based on a variety of theories, including Jung's (1933) formulation of individuation, Bühler's (1935) basic life fulfillment tendencies, Erikson's (1959) psychosocial stage model, Jahoda's (1959) six criteria of positive psychological and mental health, Rogers' (1961) view of the fully functioning person, Allport's (1966) conception of maturity, Maslow's (1968) concept of self-actualization, and Neugarten's (1973) descriptions of personality change in different ages like adulthood and old age, and as well as other more significant implications of the word 'eudemonia,' such as attaining one's full potential through some sort of hardship. The research of Ryff (1989) led to the development of a new objective PWB measurement (Conway & MacLeod, 2002) that included different components of wellbeing. These components are autonomy, personal growth, environmental mastery, life purpose, positive relationships with others and self-acceptance. This is the scale that has been hailed as the most accurate objective indicator of psychological wellbeing (Conway & Macleod, 2002).

For the purposes of explanation and clarification, the PWB of Ryff's aims are listed individually below. The psychological skill components and Ryff's PWB components have a connection. PWB components are linked to psychological skills components in a number of ways, for example, a range of methods, such as deep breathing and self-talk, are used to enhance both psychological skills and PWB (Stelter, 2009).

*Autonomy* means the ability to manage one's own behavior through an internal locus of control (Ryff, 1989; Ryff & Keyes, 1995). A fully functioning person has a high level of internal evaluation, assessing himself or herself primarily on own standards and successes rather than on the standards of others. They are less influenced by the views of others and do not seek acceptance from others (Ryff, 1989). Higher level of autonomy means independence, whereas low autonomy means self-consciousness (Ryff, 1989). They are less influenced by other

people's opinions and more focused on their own convictions. Internal locus of control is a fundamental component of motivation (Weinberg & Forlenza, 2020), and it requires autonomy, greater understanding, self-confidence, and belief, just as it does for athletes. Autonomy is also connected to self-determined motivation in sports engagement in order to achieve this.

*Personal growth* means develop and extend oneself. Becoming a fully functional person with the capacity of self-actualizing and achieving goals are referred as personal growth (Ryff, 1989; Ryff & Keyes, 1995). To attain optimum psychological functioning, one must continue to evolve as a person in different aspects of life (Ryff, 1989). In the process of personal growth people must continue to grow and solve issues by exploring their horizons. As a result, persons with a high degree of personal growth are linked to ongoing progress, while those with a low level are linked to stagnation. Sportspeople with a development mentality understand that hard work pays off (Dweck, 2005). A development mentality requires an openness to new and diverse experiences. Athletes that are modest yet confident are always aiming for personal improvement and holistic development (Weinberg & Gould, 2010); this people typically use good and bad performances, as well as goals attained attitude to improve their personal growth. Therefore, personal development is one of the closet PWB dimension of eudemonia (Ryff, 1989).

*Environmental mastery* is well defined as the ability to choose and control present situation through physical and mental activities (Ryff, 1989; Ryff & Keyes, 1995). A high degree of environmental mastery indicates control over own environment, whereas a low level indicates an incapacity of surroundings (Ryff, 1989). A mature person can typically engage and relate to a wide range of individuals in a variety of settings, as well as adapt to different environments on demand. Controlling physiological and cognitive arousal may help athletes gain more grasp and knowledge of their environment, it's also enhanced their interactions with others and it leads to increased self-awareness as well as a better comprehension of the situation and surroundings (Weinberg & Gould, 2007). Environmental mastery is being able to regulate and grab opportunities in complicated environmental and life conditions (Ryff, 1989). The capacity to venture outside of one's "comfort zone" aids in the pursuit of peak athletic performance.

*Purpose in life* means one's perception of the value of one's existence, and it entails creating and achieving objectives that add to one's appreciation of life (Ryff, 1989; Ryff & Keyes, 1995). Psychological wellness refers that one has a larger purpose and aim in life (Ryff, 1989). Goals are an important component of achieving success and provide direction in life (Miller, 2003). Having a firm sense of purpose is a sign of maturity. Having a clear sense of purpose is a sign of maturity (Ryff, 1989). When athletes strive for a higher goal for themselves, they hold their focus, attention, concentration to achieve realistic and holistic objectives. Goal setting and achievement may be both inspirational and motivating (Weinberg & Gould, 2007).

*Having positive relations* with others mean interpersonal interactions, as well as belonging to a network of communication and support and these are key components in the formation of trustworthy and long-lasting partnerships (Ryff, 1989; Ryff & Keyes, 1995). Maturity is defined as a calm and serene attitude that reflects and leads to improved relationships and concern of others. As a consequence, excellent relationships lead to an understanding of people, whereas bad relationships can lead to frustration (Ryff, 1989). One of the most important aspects of mental health is the ability to have healthy interpersonal relationships, and illness is frequently marked by impairment in social functioning. The importance of communication in team relationships cannot be overstated (Miller, 1997). Positive interpersonal relationships frequently lead to enhanced knowledge, empowerment, and improved athletic performance in group/team contexts.

*Self-acceptance* is the most fundamental part of mental health and an essential component of optimum functioning (Ryff, 1989; Ryff & Keyes, 1995). Self-acceptance at a healthy level leads to a positive attitude and increased life happiness (Ryff, 1989). Moderate levels of self-assurance lead to higher accomplishment and acceptability (Weinberg & Gould, 2007), with good feedback from others playing a key role in maintaining self-assurance and belief. Self-acceptance is essential for self-actualization, improved psychological functioning, and growth (Ryff, 1989). As a result, it evolves by accepting the past and present while still keeping a sense of direction for the future.

### **Predictors of Psychological Wellbeing**

There is a study which explored potential relationship of PWB with gender. 185 men and 215 women within an age range of 17 to 50 years were drawn from various colleges and university of Khyber Phutun. Ryff (1989) PWBS (middle version consisting of 54 items) was used as a collecting tool for relevant information. According

to the results, gender is a significant variation in PWB. Men outperformed women on four of six dimensions of psychological well-being like; environmental mastery, personal growth, autonomy, and purpose in life (Maroof & Khan, 2016). In another study it showed birth order was not associated with psychological distress or having a mental health issue at midlife. Basic predictors of PWB, such as employment status, years of education and partnership status in adulthood attenuated the relationship between birth order and mental wellbeing (Stannard, Berrington, & Alwan, 2019).

Khumalo, Temane, and Wissing (2011) investigated the relationship between socio-demographic variables in an African context using two models: the General Psychological Wellbeing model (GPW) and the Mental Health Continuum model, both of which conceptualize and measure well-being as a holistic, integrated, and complex construct (MHC). The research was carried out on an African sample in South Africa's North West Province. A total of 459 Setswana-speaking people from rural and urban regions completed the GPW and MHC questionnaires. The researchers ran descriptive statistics, correlations, cross-tabulations, and regression analyses. The findings suggest that socio-demographic factors have a role in defining comprehensive PWB in a Setswana-speaking population in South Africa. Higher PWB was linked to urban life, employment, education, and marriage. The highest difference in PWB measures was accounted for by the environmental context (rural or urban), followed by job status. Age and gender were not shown to be significant predictors of happiness.

The study of Oskrochi, Bani-Mustafa, and Oskrochi (2018) was used to create a unified data set of two nationally representative surveys, the British Household Panel Survey (BHPS) and the Understanding Society Survey (USS), which used the 12-item General Health Questionnaire to measure PWB and associated factors (GHQ-12). The dependent variable was the GHQ-12 score for the head of the household, and its connection with numerous independent demographic and financial status factors was studied. Following the evaluation of growth curve features using linear, curvilinear, and higher-order polynomial models, a variety of variance-covariance structures were examined to determine the error covariance structure of the longitudinal data. Natural splines and B-splines were used to enhance the fit of some variables, and the random intercept and random slope were permitted to vary among individuals. The final model revealed that the perception and anticipation of future financial condition, as assessed by GHQ-12, were the most relevant factors impacting self-reported PWB, as well as issues meeting household spending. Gender, age, marital status, number of children living at home, highest qualification, and employment position all had a role. However, unlike prior studies, it did not find that income size was important. These findings add to the growing body of evidence that financial worries have an influence. These results show further indepth evidence of the impact that financial concerns have on self-reported measures of PWB.

### **Young Adults and Psychological Wellbeing**

Young adulthood (YA) is a stage between adolescence and adulthood. Transition may be described as a qualitative restructuring of one's inner life and conduct on the outside (Elias & Noordin, 2010). For many young people, the move from secondary school to university is a big life shift that will be difficult, especially if it means leaving home and taking on new responsibilities (Robotham & Julian, 2006). This is compounded by the increased workload and time strain that new university students encounter as a result of having to adjust to changes in a variety of life domains, such as dealing with a new social milieu (student stress will be linked to social issues). Increased stress may be attributed in part to the lack of a person's typical support network of friends and family (Robotham & Julian, 2006), which may explain why the transition from high school to university necessitates substantial life changes in numerous areas (Robotham & Julian, 2006). As a result, the idea of adaptability to transition was applied in this research.

It may be difficult for graduate students to adjust to new social and educational situations, which can be stressful. Life in graduate school may be considerably more stressful due to the extra pressure of coping with various cultural values, language, and high self-expectations, in addition to academic obligations and a lack of social support systems (Constantine, Okazaki, & Utsey, 2004). As a result, graduate students are more likely to have adjustment issues, bodily ailments, and psychological discomfort (Constantine et al., 2004). Apart from academic pressures, graduate students may face difficulties as a result of numerous roles, different patterns of advising relationships, insufficient social support, or financial limitations as a result of their transitions (Goplerud, 1980).

Psychological well-being is a critical resource for overcoming obstacles and efficiently navigating through life (Ryff, Keyes & Hughes, 2003). PWB's abilities and views are essential for effectively participating in relationships with others, managing one's environment, and self-actualization (Ryff, 1989). PWB has a

favorable relationship with physical health indicators (Ryff & Singer, 2006). PWB is thus critical for people of all ages, particularly students making the move to university (Bowman, 2010).

PWB is critical for university students in order to adjust to university life successfully (Bowman, 2010). The fundamental structure of happiness has virtually always centered on the balance of good and negative effect, as well as life satisfaction (Bradburn, 1969). Short-term happiness has been stressed in PWB discussions rather than the ability to face life's obstacles, such as having a sense of purpose and direction, creating meaningful relationships, and reaching self-realization (Ryff & Keyes, 1995).

In Bangladesh, youth is the most viable and potential human resource and frustration is an identified problem of youth in Bangladesh. Different studies show that frustration is one of the leading causes of drug addiction (Chowdhury & Sarker, 2002). Therefore, the large population of YAs in Bangladesh requires ensuring PWB for their better and prosperous future. So, therefore the aim of this study was to develop an intervention program specifically for addressing the PWB of YAs in Bangladesh.

The construct of PWB depends on various aspects. Ryff and Keyes (1995) found considerably strong positive correlations between the variables "purpose in life" and several indicators of PWB, as well as negative correlations with indicators of psychological distress, in a sample of 1108 adults. Zika and Chamberlain (1992) obtained similar results amongst 194 young women. So therefore, Ryff six-factor model was also used in this study to investigate the predictors of PWB.

## Method

The main purpose of the present study is to find out the components and predictors of PWB in YAs of Bangladesh. For this multipurpose nature, the study was divided into three stages: I) Adapting an instrument of measuring PWB, II) Identifying the factors related to PWB, and III) Piloting an intervention tool. The procedures involved in these three distinct stages related to study purpose are outlined in the layout of the research design.

## Research Design

This research has been conducted using a three stages mixed-method design. In the first stage, the Ryff's PWBS-42 was chosen as it was found to be the best measure for PWB of YAs (Conway & MacLeod, 2002). Using the 18-item PWBS or others PWBS, researchers discovered that daily discrimination is associated with lower wellbeing. On the other hand, adults have better wellbeing when they recall having supportive and affectionate relationships with their parents as children (An & Cooney, 2006). Furthermore, multiple studies have found that education is related to better wellbeing (Ryff et al., 2003). So therefore, 42-item scale (van Dierendonck, Díaz, Rodríguez-Carvajal, Blanco, & Moreno-Jiménez, 2008) is statistically sounder than other PWBS measurements.

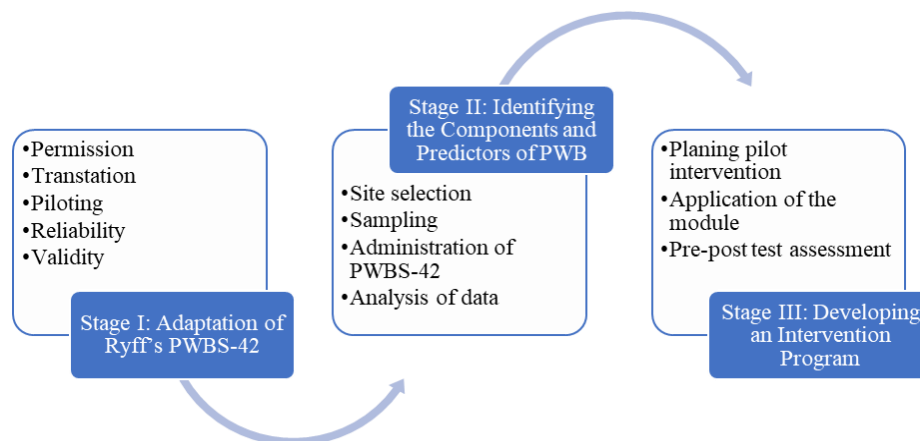


Figure 1. Three staged research design of the study

There are several versions Ryff's PWBS: 84 items (14 per dimension), 54 items (9 per dimension), 42 items (7 per dimension), 24 items (4 per dimension) and 18 items (3 per dimension). The 42-item version was chosen for

its comprehensiveness, as it was neither too long nor too short. It was adapted and validated into Bangla and its psychometric properties were assessed. The second stage involved administration of the Bangla Psychological Wellbeing Scale (BPWBS) to a representative sample of YAs for identifying the components and predictors of their PWB. Finally, in third stage a pilot intervention program was developed and assessed for its efficacy. At every stage distinct methodology was followed to reach the specific goal of the stages.

### **Adaptation of Ryff's PWBS-42 into Bangla**

The adaptation process comprised of several steps starting from permission of the author as depicted in Figure 1: starting from seeking permission from Dr. Carol Ryff, the author of the PWBS through translation process to examining psychometric properties.

#### *Description of Ryff's PWBS-42*

The Ryff's PWBS-42 is a modified version of the original instrument, which had 120 items (20 per dimension) and was designed by psychologist Carol D. Ryff on the basis of his six-factor model of wellbeing. The original wellbeing scale now has five shorter versions: 84 things (14 items per element), 54 items (9 items per element), 42 items (7 items per element), 24 items (4 items per element), and 18 items (3 items per element). The 42-item PWBS assesses six subscales with seven items each to assess the six dimensions of wellbeing: autonomy, environmental mastery, personal growth, positive connections with others, purpose in life, and self-acceptance, as do various shorter versions.

The Autonomy sub-scale looks at a person's sense of autonomy and independence from rules. "I am affected by folks who have strong ideas," for example. The Environment Mastery subscale assesses one's confidence in one's ability to cope with life's challenges. "In general, I feel in control of the situation in which I live," for example. Personal Growth is a sub-scale that assesses a person's willingness to try new things and progress. "Life has been a continual process of learning, changing, and growing for me," for example. The Purpose in Life subscale looks at one's sense of meaning and purpose in life. "I like developing future ideas and trying to make them a reality," for example. The sub-scale Positive Connections with Others looks at how satisfied you are with your relationships with others. "I sometimes feel lonely since I have few close friends with whom to discuss my worries," for example. Self-acceptance is a sub-scale that looks at how one feels about oneself. "For the most part, I am proud of who I am and the life I lead," for example. All 42 questions featured a six-category response structure, ranging from "strongly disagree" to "strongly agree." There were 42 articles in all, with 20 PWB items carrying good content and 22 PWB items including negative content. Prior to analysis, items with negative content were reverse-scored, with higher scores indicating better wellbeing.

#### *Reliability and Validity of Ryff's PWBS-42*

Ryff's PWBS began with 120 items and has subsequently grown to include 84, 54, 42, 24, and 18 items, all of which are organized around the same six components of eudaimonic wellbeing: self-acceptance, good interpersonal relationships, autonomy, environmental mastery, life purpose, and personal development. The PWBS's reliability and validity are hampered by the fact that different countries utilize different combinations of the original 120 items, as well as sociodemographic variance.

Longer scales offer stronger internal consistency, while shorter scales have higher factorial validity, according to Meeks, Vandenbroucke, and Shryock (2018). There is no agreement on the best version of the PWBS to use or which populations to use it on. In a multigenerational sample from a research of wellbeing linked to theatre audience engagement (N=581), the 42-item version of the measure was evaluated for reliability and factor loadings. The participants' demographic characteristics were comparable to those of the Ryff development sample. The study revealed that older and middle-aged groups had similar internal consistency ( $\alpha$ ), with the youngest (and smallest) group having somewhat poorer dependability; average alphas for the three groups were 0.71, 0.78, and 0.77, respectively. The scales performed quite well in the 6-factor model, albeit not optimally; NFI=.777, CFI=.836, RMSE=.063, PClose=.000, CMIN/DF= 3.089. Using a single component hierarchical model did not enhance fit. The findings show that the Ryff scales are consistent across age groups, but that there may be factor solutions that go beyond Ryff's initial six factors (Meeks et al., 2018).



In a Japanese study, the internal consistency, structural validity, and convergent/known-group validity of the 42-item (PWBS-42) were studied (Sakuraya et al., 2020). The PWBS-42 is made up of six 7-item subscales that measure autonomy, environmental mastery, personal growth, good interpersonal connections, life purpose, and self-acceptance in eudaimonic PWB. In 2008, 2102 community residents in Tokyo aged 30 and above were given a questionnaire as part of the Midlife in Japan (MIDJA) research. Internal consistency dependability was measured using Cronbach's alpha. The structural validity of the study was investigated using exploratory factor analysis (EFA). To assess convergent validity, the Japanese PWBS-42 subscales were linked with measures of life satisfaction, negative affect, negative adjectives, positive affect, positive adjectives, self-esteem, and perceived stress. The responses of 1027 people (505 men and 522 women) were examined (valid response rate = 56.2%). Cronbach's scores ranged from 0.70 to 0.78 for five of the subscales, while the one for life purpose had a lower value.

EFA came up with a five-factor model. The first two variables were made up of negative and positive items from the environmental mastery, purpose in life, and self-acceptance subscales. Items from the subscales of positive interpersonal connections, autonomy, and personal progress make comprised the third, fourth, and fifth components, respectively. As expected, life satisfaction, negative and positive affect/adjectives, self-esteem, and perceived stress were significantly related with all subscales of the Japanese PWBS-42. The subscales of the Japanese version of the PWBS-42 exhibited adequate levels of reliability and support for convergent validity in the Japanese population. Items from three subscales (environmental mastery, life purpose, and self-acceptance) loaded on two factors together, differing somewhat from the theoretical 6-factor model. This information may be interpreted in light of Japan's interdependent self-concept, which implies that these three aspects are connected.

Abbott, Ploubidis, Huppert, Kuh, and Croudace (2009) investigated Ryff's PWBS's effective measurement range. It uses a restricted information estimate technique to apply normal item response theory (IRT) methodology for ordinal data utilizing factor analysis processes. The information was gathered from 1,179 women who took part in a midlife follow-up of a national birth cohort study in the United Kingdom. Six aspects are included in the PWBS: autonomy, good interpersonal relationships, environmental mastery, personal growth, life purpose, and self-acceptance. Standard errors of measurement for estimated scores on each dimension were determined using scale information functions. The addition of method variables from item wording distinguished construct variance from method variance (positive versus negative). According to the IRT analysis, the PWB reliably assesses wellbeing in the center of the score distribution, i.e., for women with average wellbeing. At increasing levels of wellbeing, score precision decreased, and poor wellbeing was detected more consistently than high wellbeing. A second-order wellbeing factor that was loaded with four of the characteristics had better measurement precision and scoring accuracy across a wider range than any single dimension. Items that may distinguish at high levels of wellbeing should be included in future developments of wellbeing measures.

#### *Seeking Permission from Dr. Carol D. Ryff*

In order to seek permission Dr. Carol D. Ryff, the director of the Institute on Aging, University of Wisconsin-Madison, Madison, United States was contacted through email and permission to adapt her PWBS to Bangla was obtained. In the process of translation creating comparable instruments in more than one language includes not just translation of the test items and test materials but other different changes are also very important. For example, changes in the items format and testing techniques can have an impact the interpretation. Different issues relating to test translation should be considered to have instruments that are suitable for comparisons between more than two cultures. As indicated by (Ercikan, 1998) a decent translation should reflect the importance of the original item, yet attempt to keep up a similar pertinence, natural interest, and commonality of the item content. Otherwise, what the item measures might get changed. The current scale was translated in the Bangla language utilizing the strategy of forward and back translation (Brislin, 1980)

#### *Translation Procedure*

The 2nd step of adaptation included the forward translation of the items of the main scale into Bangla followed by consultation with 5-member expert panel for viability, back translation by another panel of 3 experts and piloting of the final Bangla version of Ryff's PWBS-42. With the consultation of the 5 expert panel an edited Bangla version was developed and this edited Bangla version was given to another three experts for back

translations (Bangla to English). After compiling all the feedbacks from both expert panels, a pilot study of the final draft was implemented to see the correlation between the English and Bangla version.

#### *Forward Translation*

After getting the permission from Dr. Carol Ryff, an initial translation of the scale from English to Bangla was done from the researcher. All the 42 items of 6 subscales from the original English scale were translated into Bangla. In the process of translation, instead of literal translation, more focus was giving on preserving the meaning of the original item.

#### *Viability of Forward Translation by the Expert Panel*

In order to verify the appropriateness of the primary translation of the scale, a panel of five specialists was formed and items were modified according to true sense and the culture difference. The expert panel of the intended process included three therapists holding Ph.D. in psychology and two experts with MPhil in Educational Psychology. Every one of them was local people and was informed about the construct estimated in the test and furthermore with the standards of adaptation. In a research test translation is just one of the means in the advancement of test adaptation. With a forward translation plan, a solitary translator, or ideally, a group of interpreters translate the test from the source language to the objective language (Hambleton & Li, 2005). For this reason, the solitary translated measure was given to five qualified and experienced interpreters who substantiate the primary translation of the Ryffs' PWBS-42 from English into Bangla by showing their agreement in a three-point scale (3 appropriate, 2 need modification and 1 not appropriate). All expertise had 98-100% agreement on the primary translation with necessary feedbacks for modifications indicating face validity of the Bangla scale. Consequently, adequate comments were identified and incorporated accordingly for the 1<sup>st</sup> draft Bangla rendition. At that point, this draft form of BPWBS was considered to be ready for back translation.

#### *Back Translation by Bilingual Experts' Panel*

In backward translation, after adapting a test from the source language to the target language, different translators take the adapted test (in the target language) and translated back to the source language (Hambleton & Li, 2005). In this step three bilingual experts, who had not previously seen the original version of the measure, back translated the translated version of the measure again into English language. The backward translation expert panel consisted of three expertise. Among them two expertise hold masters in Psychology and one expertise hold masters in English Literature. All of the experts had sound command in both English and Bengali dialects. Based on their feedbacks few items were modified and rephrased to retain the fundamental substance of the original scale. This 2<sup>nd</sup> draft Bangla version was cross-checked with the original English version and reviewed by the both panel of expert for the translation inaccuracies. Then a final draft of BPWBS was prepared for pilot testing. All the 42 items of 6 subscales were included in the BPWBS.

#### *Pilot Testing*

The final draft of BPWBS was piloted for usability, ease of administration and English vs Bangla correlation of the scale on a small group of sample. A total number of 27 participants (15 females and 12 males, mean age 22.11 years) were selected conveniently from student population. First Bangla questionnaire was given to the participants using standard instruction. After completion of their responses, researcher examined the results independently and checked the difficulty level of the items, the clarity, exactness, and contents of the questionnaire. With a gap of seven days English version of the scale was given to the same participants. In this step the English-Bangla correlation was looked to see whether the translation was viable and have content validity (see Table 3 in Result section). A significant correlation between the English version and the Bengali version was found. Other feedbacks and suggestions which were given with respect to the wording and concept of the scale have been taken into account. After making consensus by the experts the single and final adaptation of the BPWBS was completed.

### *Time Frame of Scale Adaptation*

This portion of the research started in January 2020. The final BPWBS-42 was finished by the end of February 2020.

### *Determining the Psychometric Properties*

The BPWBS was ultimately administered on a larger sample to determine the psychometric properties of the adapted scale. Item-total correlation, alpha value for subscales and factor analysis were analyzed to determine the statistical value of the scale.

### *Data Analysis*

Statistical Package for Social Sciences (SPSS) version 20 was used for data analysis for the psychometric properties that include test-retest reliability, internal consistency, item-total consistency, subscale consistency, congruent validity, and construct validity were carried out.

### **Identifying the Components and Predictors of PWB**

The BPWBS was administered on a large representative sample of YA to identify the factors related with PWB. Survey method was used to collect data. The BPWBS was distributed along with a demographic questionnaire among the participants to get their responses.

### *Study Sample*

The survey of the second part of the study comprised 301 YA, 149 males and 152 females, ranging in age from 18 to 25 years. Generally, students enrolled in undergraduate and graduate programs from 9 different educational institution of Dhaka city were the target population for data collection. Because Dhaka is the capital of Bangladesh and has more educational options, students from all over the country come to study at various educational institutions in Dhaka city, and are thus thought to represent young people from all over the country. Two secondary colleges, five-degree colleges under National University, and two universities were conveniently selected.

Table 1. Gender distribution and age range of the sample

Institution	Male	Female	Age range
College (59)	56	3	18-24
DU (27)	13	14	23-25
JNU (60)	47	13	18-25
National University (155)	33	122	18-25
Total (N=301)	149	152	18-25

Among respondents 59 (19.6%) were from two colleges, 155 (51.5%) were from five-degree colleges under the National University, and rest of the 87 (28.9%) were from two public universities. There were 11 (3.6%) upper middle class participants, 217 (72.1%) medium socioeconomic level participants, 66 (21.9%) lower middle class participants, and 7 (2.4%) lower class people among the 301 total participants.

### *Sampling Technique*

Purposive sampling technique was used for this study. Inclusion criteria of the sample was participants only from educational institutions (students), only YA (age limit 18 to 25years)

### *Instruments Used*

Basically, two measures were used to collect intended data. One being the demographic questionnaire for identifying related components of PWBS and the other is the BPWBS. These two instruments were compiled in a single set of questionnaires and provided to the participants with appropriate instructions and consent form.

### *Demographic Questionnaire*

A questionnaire was structured to survey demographic factors, including age, sexual orientation, level of education, establishment, conjugal status, birth order, living status, socio-economic status, physical and mental health. Selected demographic questionnaire was used to determine the predictors of PWB.

### *BPWBS*

The BPWBS involved six subscales with seven items each to quantify the six components. Descriptions of the sub scales are given in introduction section (see page 4). Examples of items for each sub scales are given below.

1) Autonomy: "I am not afraid to express my opinions, even if they differ from the great majority of people's opinions." 2) Environmental mastery: "I feel I am accountable for the situation in which I live in general." 3) Personal development: "I believe that fresh experiences that challenge how I think about myself and the world are essential." 4) Positive interpersonal relationships: "Most people regard me as loving and warm." 5) Life's purpose: "I have a sense of direction and a cause to live every day." 6) Self-acceptance: "In general, I am confident and pleased with myself."

The response categories for these topics are on a six-point scale, ranging from 1 ("Strongly disagree") to 6 ("Strongly agree") ("Strongly agree"). Averages were calculated for the six subscales; higher values imply more evident PWB. The reliability coefficient for each of the six subscales, as well as the entire instrument, was more than 0.70. (Ryff & Keyes, 1995).

There was a significant positive correlation ( $r = 0.6, p < 0.05$ ) between English and Bangla PWBS-42 which indicated high parallel form reliability. Also in case of item-total consistency Cronbach's alpha was 0.939 suggesting highly consistent with BPWBS score. Finally, Cronbach's alpha of all the subscales were above 0.70. According to the expert agreement over content of the adapted version and the result of factor analytic procedure ensure the content and construct validity. So therefore, BPWBS-42 is highly reliable and valid tools for measure PWB. For details see the result section (page 43-56).

### *Data Collection Procedure*

After conveniently selecting the above mentioned nine educational institutions from all around Dhaka City, two research assistants along with the researcher were involved for the data collection procedure. The research assistants were given 3 days training on the research purpose, ethics and how to conduct the data collection process. These research assistants were psychology graduates' students and had prior knowledge of Ryff's scale. During training sessions, they practice the administration process several times under the supervision of the researcher. After completing the training, researcher and two research assistants went to selected institutes and asked permission from the relevant authority for permission to conduct the research. The participants were approached graciously with an invitation for participation in the study. Those who agreed were included for data collection process. In order to take information consent at the beginning, each respondent was briefed about the general purpose of the study and were requested to cooperate with the researcher. After initial briefing, questionnaires were delivered to them. It took around 15 minutes to fill up the questionnaire. Research assistants were present in the room while the participants were filling up the questionnaire. If any of the participants needed any help, the research assistants provided that. The whole process of data collection took around three months. Once the target numbers of responses were completed, data collection was ended. None withdrew themselves nor refused to response.

### *Time Frame of the Survey*

Data collection procedure started in March 2020 and by the end of May 2020 targeted number of 300 respondents was reached from the entire selected study site.

### Data Analysis of Survey

The collected data were cleaned, coded and entered into the computer software. The Statistical Package for Social Sciences (SPSS) version 20 was used for data analysis. Demographic statistics were used to see the distribution of respondents of survey part of the study. One-way ANOVA and t-test were also applied to find out the factors related to PWB.

### Developing an Intervention Program

Finally, the current research had an intention to develop an effective intervention program to enhance the PWB of YA. A pre and post-test study was designed and carried out to fulfill the purpose. A personal information form and BPWBS were provided to the participants of the intervention program to measure any change in their state of PWB. No psycho-education or other knowledge related to PWB was provided before the intervention took place. Due to unprecedented pandemic lock down virtual intervention strategy was opted as an alternative to in-person workshop.

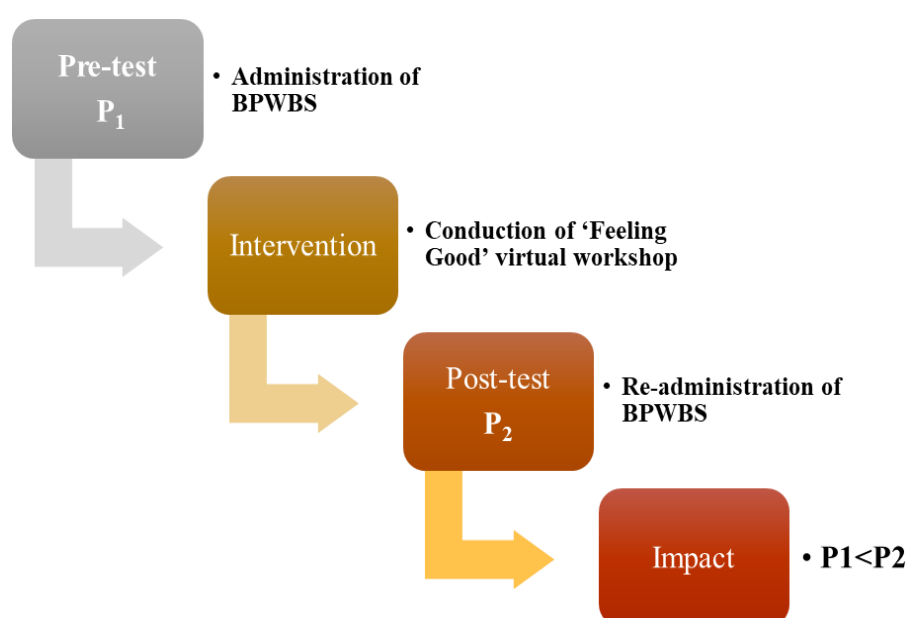


Figure 2. Measureing the efficacy of the intervention program

### Participants for Intervention Workshop

Participants were selected on a convenient basis from different educational institutions all around Bangladesh. The small number of participants (16) comprised from different public college and university. The age range of these participants was 18 to 25 years old and 5 of them were male and 11 participants were female. By the time this point of the research was reached, Bangladesh was under lockdown due to Covid-19. So, some changes had to be made in planning. There were no opportunities to physically move from places to places in order to carry out the research. To overcome this hurdle, the researcher utilized the online platforms for accessibility. Facebook advertisements were used for promoting the workshop. Interested students messaged or called the researcher to attend this free workshop. The sampling was done completely on a convenient basis due to the sudden limitation of a global pandemic.

### The Intervention Program- "Feeling Good"

The intervention module named "Feeling Good" has been developed based on the six components of Ryff's PWBS to promote emotional health and overall functioning of YAs. This module was held in three sessions. Transformation of the group depended on experience, sharing and learning.

### *Workshop Method*

The workshop sessions were conducted online and Zoom app was used to deliver the participatory workshop.

### *Workshop Time and Duration*

The total duration of the program was three weeks in three sessions. Each session was consisted of three hours.

### *Objective of Intervention*

The intervention program was designed to provide psycho-education and practice material for different aspects of PWB.

### *Expected Outcome of the Intervention*

The expected outcome was that participants will improve their state of PWB.

### *Informed Consent*

All the participants were given definite information about the nature, reason, and conceivable future usage of the study verbally over phone. The goal was that they could settle on an informed decision with respect to their interest in the research. A written form of informed consent was composed, likewise arranged, and given to the participants to sign through email. The second part of this intervention study comprised of participation in online sessions. Informed consent was taken for participation in the sessions of the intervention program and used for research purposes.

### *Procedural Outline of the Three Intervention Sessions*

Objectives of the *1st session* was to increase self-acceptance. For excepting the multiple aspect of self, including good and bad qualities and to increase the feeling of continued development to realize his or her potential. In the first session facilitator greeted the participants and asked them what brought them in the session. Then the facilitator discussed about self-acceptance, personal growth and after the discussion facilitator took the participants through a procedure. Facilitators asked the participants to find a place where they would be comfortable and wouldn't be disturbed. Then facilitators told them to think of 5 characters that they regard unconditionally. These could be family members, friends, pets, childhood toys. As long as they were someone whose opinion they respect. After that the facilitator asked the participants to think about a situation of anxiety and step into that worry. Participants described it using all the senses and then came up with a totally honest description of how they feel: "I really feel worried about . . . it makes me feel shaky and sick." Then facilitator asked the percipients to think about the significant character of their life and will tell them to surround themselves with these characters. Afterwards, participants were asked to imagine the characters saying to them "Be kind to yourself, care for yourself, nurture yourself, be kind, nurture, care for." Facilitator repeated these words and asked the participants to accept those nurturing and compassionate thoughts. After finishing the task facilitator checked the participants' feelings and thoughts. To enhance the positive feelings of self as a personal growth facilitator asked the participants to think about any sign such as: touching nose, ear lobe, etc. Then facilitator asked the participants to revisit the exercise and while doing the exercise they would add their body sign as an anchoring. In this session participants experienced a way of self-acceptance and as a personal growth they practiced anchoring to make the skill more relevant.

Objectives of the *2nd session* were to increase the goals in life and identifying beliefs that give life purpose and to increase the sense of mastery and competence in managing the environment. In the second session facilitator greeted the participants and asked them any thoughts and learning from the previous session. Then the facilitator discussed about the meaning of purpose of life and environmental mastery. The facilitator asked the participants to pick one area/state that the participants want to work on such as, time management, daily exercise, eating healthy, etc. Then the facilitator asked the questions to the participant: What's your purpose to do the specific task? When you are doing the specific task that you are? What's important for you? How are you doing your

task? What do you do that help you to manage the task? Where do you like to start? With these logical level questions facilitator explored the purpose of a specific task of the participants' life. Then the participants did an open discussion on their environmental mastery, how they would make their specific task more effective with the use of surrounding opportunities

Objectives of the 3rd session were to increase self-determination and independent for resisting social pressures and to increase warm, satisfying, trusting relationships with others. In the third session facilitator greeted the participants and asked them any thoughts and learning from the previous sessions. Then the facilitator discussed about the meaning of autonomy and positive relationship with others. After that the facilitator went through a procedure with the participants. Facilitator asked the participants imaging the future before them as an ever-expanding straight line/triangle, full of color and possibilities.

They would spend few moments in future and they would think what they might achieve autonomously in their life. Then they looked back their present. They thought about what skills, opportunity do they had then. They saw it, felt it and heard it. From the present state they thought where they want to start. Then participants imagined themselves moving forward, overcoming any possible blocks that might get in their way, and picking up additional resources, until they meet and exceed their original outcome. Again, participants came back to the present and thought about a small step which they can take then. After that maintaining positive relationship among the group members, one participant gave positive feedback to another participant; another participant gave positive feedback to another new participant; like this it rolled. After that facilitator asked their feelings and discussed how this feedback activity can incorporate in maintaining positive relationship with others.

#### *Piloting the Intervention Program*

To determine the efficacy of the intervention program “Feeling Good” in bringing change in PWB of YAs, a pilot study was designed. Single pre-post-test measure was used following the design given in table 2.

Table 2. Measuring the efficacy of the intervention program

Pre test (P <sub>1</sub> )	Intervention (T <sub>1</sub> )	Post test (P <sub>2</sub> )	Effect
Administration of Bangla PWBS	Conducting 'Feeling Good' virtual workshop	Re-administering Bangla PWBS	P <sub>1</sub> < P <sub>2</sub>

#### *Procedure*

In order to conduct the intervention program “Feeling Good” on line a WhatsApp group was created to do smooth communication with all the participants. Zoom platform was used to conduct the workshop. One week prior to the first session, the questionnaires BPWBS and personal information form were sent to each of the participants through email to measure their state of PWB before giving the intervention as a comparative baseline. Almost everyone returned their responses within a day or two.

The intervention module ‘Feel Good’ were conducted in group via Zoom meeting by researcher. A total of three sessions were conducted and a gap between each session was one week. Each session was of three hours long. The sessions were interactive. Group discussions, different activities and question-answer sessions were facilitated by the researcher. All the sessions were recorded after informing the participants and collect their informed consent.

In the post-test phase, once again BPWBS was provided to each of the participant through email. One week after the last session of intervention the post test was sent to respond and well received accordingly. No additional feedback or any other information was provided unless related to the research. As the intervention sessions were basically a part of a workshop or training which contributed to the knowledge and understanding of PWB. It was tried to provide as little information outside of the sessions.

#### *Time Frame*

This part of the research started in August 2020. By the mid-September 2020 the data collection procedure was completed.

### *Data Analysis*

Paired t test has been conducted to see whether there is any significant difference between the pre and post scores of the participants. Significant difference means these six components are the predictors of PWB in YAs.

### *Ethical Considerations*

This research was affirmed by the ethical advisory committee of the Department of Educational and Counseling Psychology, University of Dhaka. The accompanying area presents a portion of the significant issues mulled over in keeping up the moral principles of the current research.

### *Wellbeing of the Participants*

The research was not involved in any sort of distressing subject matter. In spite of that, the chance of encountering trouble was plainly written in the consent form and depicted to the respondents prior to requesting their investment. Any type of emotional and psychological support was offered if the study caused any distress in the participants.

### *Right to Withdraw*

The respondents' entitlement to pull out from the research was unmistakably expressed and kept up all throughout the research. In any case, they were made it clear that they could withdraw from the study at any given point in time while the data collection was taking place. They can further ask to withdraw their data or request to not use them in the study if they want.

### *Confidentiality and Privacy*

As the assortment of touchy and individual data is one of the significant worries for any research, the confidentiality and privacy of the participants were given high importance. All conversations and data collection were led in a protected spot affirmed by the respondents. The collected data were kept in a safe online and offline space where only the researcher has access.

## **Results**

The present study investigated the components and predictors of PWB in YAs. For that purpose, the research was divided into three stages and results are presented accordingly. In the first stage, psychometric properties of BPWBS would be presented. In the second section of the result will focus on components and predictors that have been identified for the PWB of YAs. Finally, in the third section the outcome of intervention program will be addressed.

### **Psychometric Properties of the BPWBS**

In order to find out the psychometric properties of the BPWBS-42 parallel form reliability, Cronbach's alpha, internal consistency, subscale correlation and factor loading were calculated using the 20th version of the Statistical Package for the Social Sciences (SPSS) software. The obtained psychometric properties are presented in the following sections.

#### *Reliability*

Reliability refers to the attribute of the scale that confirms consistency (Bartko & Carpenter, 1976). If the scale delivers similar scores for a participant each time, the scale has good reliability. Initially, the English-Bengali correlation was looked to see whether the translation was reliable or not (Table 3). And a significant correlation between the English version and the Bengali version was found indicating high parallel form reliability.



Table 3. Correlation between Ryff's English and Bangla PWBS-42

Version	Mean	SD	r	Sig.
English	174.52	18.54	0.62	0.001
Bengali	176.33	19.91		

The next section presents the internal consistency as measured by item-total consistency and subscales consistency. Results are presented in table 4 through 6 subsequently. Cronbach's alpha for the total scale was 0.939. It indicates that all items are highly consistent with total the BPWBS score (Table 5). Deletion of none of the items would have increased the alpha value. Therefore, all items were retained as consistent to be reliable.

Table 4. Mean (SD), range and alpha value of the BPWBS

Mean	SD	Range	Alpha value
148.69	25.00	84-222	0.939

Table 5. Item-total statistics of the BPWBS

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	145.11	583.942	.727	.934
2	145.23	586.675	.737	.934
3	145.24	604.741	.305	.937
4	145.08	598.411	.515	.935
5	145.23	586.675	.737	.934
6	145.13	597.322	.491	.936
7	145.12	604.156	.362	.937
8	145.20	597.902	.474	.936
9	145.25	602.448	.393	.936
10	145.11	585.005	.770	.934
11	145.23	596.417	.491	.936
12	145.04	592.998	.543	.935
13	145.10	604.987	.334	.937
14	145.20	605.618	.347	.937
15	144.97	597.313	.461	.936
16	145.11	583.942	.727	.934
17	145.23	586.675	.737	.934
18	145.24	604.741	.305	.937
19	145.10	613.627	.200	.938
20	145.20	605.618	.347	.937
21	145.15	620.763	.060	.939
22	145.11	583.942	.727	.934
23	145.23	586.675	.737	.934
24	145.24	604.741	.305	.937
25	145.07	588.115	.629	.934
26	145.23	586.675	.737	.934
27	145.21	607.168	.289	.937
28	145.10	604.987	.334	.937
29	145.20	605.618	.347	.937
30	144.97	597.313	.461	.936
31	145.11	585.005	.770	.934
32	145.23	596.417	.491	.936
33	145.04	592.998	.543	.935
34	145.12	604.156	.362	.937
35	145.20	597.902	.474	.936
36	145.25	602.448	.393	.936
37	145.08	598.411	.515	.935
38	145.23	586.675	.737	.934
39	145.13	597.322	.491	.936
40	145.07	588.115	.629	.934
41	145.23	586.675	.737	.934
42	145.21	607.168	.289	.937

Table 6 shows mean scores and Cronbach's alphas for the subscales. All the subscales have acceptable range above 0.70 (Cronbach, 1951).

Table 6. Mean, SD, range and Cronbach's alpha for the 6 subscales

Subscales	M	SD	Range	Cronbach's $\alpha$
Autonomy	25.19	4.94	13-37	0.76
Environmental Mastery	24.36	5.40	15-40	0.84
Personal Growth	24.86	4.65	11-35	0.75
Positive Relations	25.18	5.66	12-38	0.85
Purpose of Life	24.33	5.91	12-40	0.79
Self-acceptance	24.78	5.06	10-36	0.72

Table 7. Item factor loadings on corresponding factors

Items	Autonomy	Environmental Mastery	Personal Growth	Positive Relations	Purpose of Life	Self-acceptance
1	<b>.820</b>	-.088	-.289	.309	-.188	-.046
2	.339	<b>.779</b>	-.005	-.526	-.036	.014
3	.220	.371	<b>.764</b>	-.006	.341	.145
4	-.590	-.336	.015	<b>.646</b>	-.026	-.151
5	.039	.079	-.005	-.526	<b>.736</b>	.014
6	.414	-.623	-.059	.047	-.174	<b>.734</b>
7	<b>.507</b>	-.571	.152	.195	-.052	-.008
8	-.591	<b>.520</b>	.312	-.022	.330	.213
9	.333	.077	<b>.828</b>	.366	-.641	.404
10	-.851	-.065	-.295	<b>.550</b>	-.068	-.042
11	-.636	-.535	.380	-.110	<b>.830</b>	.188
12	.014	.053	-.104	.285	-.540	<b>.768</b>
13	<b>.815</b>	.455	.572	.279	-.060	-.021
14	.187	<b>.623</b>	.328	.004	-.094	-.090
15	-.351	-.563	<b>.829</b>	.229	-.152	.493
16	.020	-.088	-.289	<b>.709</b>	-.188	-.046
17	-.839	.079	-.005	-.526	<b>.836</b>	.014
18	.220	.571	-.564	-.006	.341	<b>.845</b>
19	<b>.812</b>	.258	.361	.246	.005	-.175
20	.187	<b>.623</b>	.028	.004	-.094	-.090
21	-.088	.393	<b>.697</b>	.180	.077	.436
22	-.820	-.088	-.289	<b>.709</b>	-.188	-.046
23	-.239	.079	-.005	-.526	<b>.836</b>	.014
24	.220	.571	-.564	-.006	.341	<b>.845</b>
25	<b>.648</b>	.024	-.016	.226	.253	-.379
26	-.839	<b>.779</b>	-.005	-.526	-.036	.014
27	.210	.410	<b>.820</b>	.025	.498	-.662
28	.215	.455	.572	<b>.779</b>	-.060	-.021
29	.187	-.623	.228	.004	<b>.694</b>	-.090
30	.351	.563	.029	.229	-.152	<b>.793</b>
31	<b>.851</b>	-.065	-.295	.250	-.068	-.042
32	-.636	<b>.635</b>	.380	-.110	.230	.188
33	.314	.053	<b>.710</b>	.285	-.540	.000
34	.507	-.571	.152	<b>.820</b>	-.052	-.008
35	.591	-.520	.412	-.022	<b>.833</b>	.213
36	.333	.077	.028	.366	.641	<b>.704</b>
37	<b>.590</b>	-.336	.015	-.546	-.026	-.151
38	-.839	<b>.679</b>	-.005	-.526	-.036	.014
39	.414	-.623	<b>.659</b>	.047	-.174	-.034
40	.648	.024	-.016	<b>.823</b>	.253	-.379
41	.339	.079	-.005	-.526	<b>.736</b>	.014
42	.210	.410	.020	.025	.498	<b>.662</b>

### Validity

Validity of a scale refers to its accuracy to measure something, which it has been created for (Messick, 1987). Our scale has been developed to measure psychological well-being. If it measures psychological wellbeing accurately it has validity. This section presents different types of validity for the adapted scale. Experts in the field were consulted for ensuring the content validity of the scale. The main question to determine the *content validity* is whether the questionnaires are fully representative of what it aims to measure. 98 to cent present agreement among the experts on the content of the adapted Bangla scale was found, which indicates that the content were valid. To test the *construct validity* factor analytic procedures were performed on the items of the Bangla scale. A principal component analysis with varimax rotation was implemented using all items. Table 7 depicts all items that loaded on the respective factors at or above 0.50. Six factors were extracted by this analysis, each with an eigenvalue greater than 1. It is apparent from the results that the structure is similar to the original English scale in terms of the number of factors composing the scale. Fair representation of all aspects of the construct it aims to measure the construct validity of the BPWBS.

### Factor Analysis of BPWBS

Ryff's components of PWB (autonomy, environmental mastery, personal growth, positive relations, purpose of life, and self-acceptance) were tested in the context of Bangladesh. As the factor loadings depicted in Table 7 confirms the six components.

## Identifying the Components and Predictors of PWB

### Demographic Statistics of the Sample of the Study

Table 8. Selected demographic statistics of study sample

Demographic Variables	N=301
Age	
Mean, (SD); Range	21.89, (2.25); 18-25
Gender	
Male	149 (49.5%)
Female	152 (50.5%)
Level of Education	
Higher Secondary	59 (19.6%)
Honors	195 (64.8%)
Masters	47 (15.6%)
Marital Status	
Unmarried	283 (94%)
Married	18 (6%)
Birth Order	
Only	7 (2.3%)
Eldest	111 (36.9%)
Middle	89 (29.6%)
Youngest	94 (31.2%)
Living Status	
With Parents	50 (16.6%)
Hall/Mess/Flat	239 (79.4%)
With Spouse	7 (2.3%)
Alone	5 (1.7%)
Socioeconomic Status	
Lower Class	7 (2.3%)
Lower Middle Class	66 (21.9%)
Middle Class	217 (72.1%)
Upper Middle Class	11 (3.7%)
Illness	
Physical Illness	35 (11.6%)
Mental Illness	49 (16.3%)

Here Table 8 presents the selected demographic information of the participants. The observation of the selected demographic information (Table 8) of the participants indicates fair representation of YA of both the genders. Such as, the mean age was 21.89 years (SD = 2.25), ranging from 18 to 25 years old. The male to female ratio was 49.5% to 50.5% (152 female to 149 male). Maximum (64.8%) participants were doing their Honors, 19.6% were in Higher Secondary, and 15.6% completed or were in their Masters program. Birth order were almost equally distributed among elder (36.9%), middle (29.6%), and youngest (31.2%); only a tiny fraction (2.3%) was only child. Maximum (79.4%) respondents were living either in a residential hall or mess/flat. 16.6% lived with their parents, 2.3% with their spouse, and 1.7% were living alone. Representation from middle class was higher (72.1%) than lower middle class (21.9%), lower class (2.3%), and upper middle class (3.7%). A small fraction of the participants was suffering physical (11.6%) and mental (16.3%) illness.

*Predictors of PWB for YAs*

To identify the predictors related to PWB, answers of the following questions were investigated:

- i. Whether there is any significant gender difference in PWBS score?
- ii. Whether there is any significant difference of PWB between younger age group (18-21 years) and older age group (22-25)?
- iii. Whether there is any significant difference of PWB between two sets of birth order (either only child or eldest child and either middle child or youngest child)?
- iv. Whether there is any significant difference of PWB between two sets of socio-economic status (either lower or lower middle class and either middle or upper middle class)?
- v. Whether there is any significant difference of PWB between married and unmarried people?
- vi. Whether there is any significant difference of PWB between physically ill and fit people?
- vii. Whether there is any significant difference of PWB between mentally ill and fit people?
- viii. Whether there is any significant difference of PWB among different levels of education?
- ix. Whether there is any significant difference of PWB among students from different institutions?
- x. Whether there is any significant difference of PWB among students of different living conditions?

A t-test was applied to find out the answers of question i, ii, iii, iv, v, vi and vii. No statistically significant difference was found in terms of total scores. The corresponding table is presented below (9).

Table 9. t-scores of different measures

Measures		N	Mean	SD	t score	Degrees of Freedom	Sig.
Gender	Male	149	149.77	27.10	0.74	299	0.46
	Female	152	147.64	22.80			
Age	18-21	122	149.51	25.24	0.47	299	0.64
	22-25	179	148.14	29.90			
Birth Order	Either Only or Eldest	118	148.37	24.71	-0.18	299	0.86
	Either Middle or Youngest	183	148.90	25.26			
Economic Status	Either Lower or Lower Middle	73	150.23	25.11	0.60	299	0.55
	Either Middle or Upper Middle	228	148.20	25.01			
Marital Status	Unmarried	283	148.76	24.93	0.19	299	0.85
	Married	18	147.61	26.86			
Physical Illness	Yes	35	150.09	24.31	-0.35	299	0.73
	No	266	148.51	30.16			
Mental Illness	Yes	49	143.86	24.64	1.48	299	0.14
	No	252	149.63	25.01			

One-way ANOVA was applied to test the questions viii, ix and x. No statistically significant difference was found among different levels of education, students from different institutions, and living condition as well applying one-way ANOVA (Table 10). Yet there was an upward rise of score in terms of level of education.

Among the respondents 59 were HSC students ( $146.07 \pm 25.10$ ), 195 were Honors students ( $148.34 \pm 24.63$ ), and 47 were Masters students ( $153.47 \pm 26.30$ ).

Table 10. ANOVA scores of different measures

		Sum of Squares	Degrees of Freedom	Mean Square	F score	Sig.
Level of Education	Between Group	1502.79	2	751.39	1.20	0.30
	Within Group	186111.09	298	624.53		
Institution	Between Group	1075.24	3	358.41	.571	0.64
	Within Group	186538.64	297	628.08		
Living Status	Between Group	350.43	3	116.81	.185	0.91
	Within Group	187263.45	297	630.52		

So therefore, the findings indicates that gender, age, birth order, socio-economic status, marital status, and physical or mental health don't have any significant impact on PWB of young adults. Similarly, no significant impacts of different level of education or educational institution or living status were found on PWB of young adults.

### Developing an Intervention Program

#### Demographic Statistics for the Intervention

Table 11 presents the selected demographic information of the participants of the second study focused on intervention module. The mean age was 22.56 years ( $SD = 2.15$ ), ranging from 18 to 25 years old. The male to female ratio was 31.3% to 68.8% (11 female to 5 male). Maximum (43.8%) participants were doing their Honors and Masters. 12.5% were in Higher Secondary.

Table 11. Demographic statistics of study sample for intervention module

Demographic Variables	N =16 (%)
Age	
Mean, (SD); Range	22.56, 2.16; 18-25
Gender	
Male	5 (31.3%)
Female	11 (68.8%)
Level of Education	
Higher Secondary	2 (12.5%)
Honors	7 (43.8%)
Masters	7 (43.8%)
Marital Status	
Unmarried	13 (81.3%)
Married	3 (18.8%)
Birth Order	
Only	2 (12.5%)
Eldest	5 (31.3%)
Middle	4 (25.0%)
Youngest	5 (31.3%)
Living Status	
With Parents	11 (68.8%)
Hall/Mess/Flat	3 (18.8%)
Alone	2 (12.5%)
Socioeconomic Status	
Lower Middle	
Class	4 (25.0%)
Middle Class	9 (56.3%)
Upper Middle	3 (18.8%)
Class	

Birth order were almost equally distributed among eldest (31.3%), middle (25.0%), and youngest (31.3%); only a fraction (12.5%) was only child. Maximum (68.8%) participants were living with their parents. 18.8% lived in either hall or mess/flat and 12.5% were living alone. Representation from middle class was higher (56.3%) than lower middle class (25.0%) and upper middle class (18.8%). No one was suffering from any physical or mental disorder.

### Impact of Psychological Intervention

A statistically significant difference in autonomy, personal growth, positive relations, and self-acceptance of the participants between pre and post intervention was found (see Table 12). All the measures mentioned increased in the post intervention phase which confirms the effectiveness and impact of the intervention. Table 12 shows the pre and post test scores.

Table 12. Mean, SD, range, and t-scores for pre and post test scores of the 6 subscales

Subscales	Mean (SD)		Degrees of Freedom	t score	Sig.
	Pre Test	Post Test			
Autonomy	28.44 (5.44)	31.06 (2.96)	15	-2.22	0.04*
Environmental Mastery	25.50 (4.35)	25.94 (3.53)	15	-0.45	0.67
Personal Growth	30.56 (6.09)	33.00 (5.73)	15	-2.42	0.03*
Positive Relations	31.06 (5.14)	35.75 (4.48)	15	-3.49	0.00*
Purpose of Life	29.81 (7.98)	32.44 (6.02)	15	-1.40	0.18
Self-acceptance	29.38 (6.39)	34.94 (6.23)	15	-4.14	0.00*

\*  $p < .05$

## Discussion

In Bangladesh, youth are the greatest viable and prospective human resource, and youth frustration is a well-documented issue (Uddin, 2020). PWB is crucial in life transitions because it indicates the ability to overcome problems, adjust to new situations, maintain relationships, and grow (Uddin, 2020). Limited research could be linked to exploration of the components and determinants of PWB targeted to the young population who face multifaceted challenge of the emerging life. The current study focused at the components and predictors of PWB in YAs of Bangladesh. This study used a three-stage mixed-method design to achieve that goal. The psychometric properties of the BPWBS were provided in the first stage. The second portion of the report concentrated on the components and predictors of young people' PWB that have been found. Finally, the final section discussed the outcome of the intervention program. Each of them is discussed in chronological order.

### Adaptation of Ryff's PWBS-42

The study of PWB is becoming increasingly important as human civilization undergoes substantial changes. These modifications may have various effects on PWB depending on the culture. However, other aspects of PWB, such as the desire for healthy interpersonal relationships, a meaning of purpose in life, and personal progress, may be cross-culturally resistive (Lent, 2004). According to confirmatory factor analysis, the BPWBS, like the original PWBS, has six major factors: autonomy, personal growth, environmental mastery, purpose in life, positive relationships with others, and self-acceptance.

The psychometric features of the BPWBS-42, including Cronbach alpha, internal consistency, subscale correlation, and factor loading cast potential evidence on its reliability and validity. There was a major positive correlation ( $r = 0.6$ ,  $p < 0.05$ ) between English and Bangla PSWS-42 which indicated high parallel form reliability. Also, in case of item-total consistency Cronbach's alpha was 0.939 suggesting highly consistent with BPWBS score. Finally, Cronbach's Alpha of all the subscales range above 0.70. This conclusion matched the findings of a number of earlier research, which revealed strong factor correlations between the three subscales in a variety of settings (Abbott et al., 2009; Kafka & Kozma, 2002). It is to be taken into consideration that the study was not conducted on a nationally representative sample while interpreting findings. Future research with Bangladeshi representative samples might give more relevant information on Ryff's PWBS factorial structure, and indirectly, about PWB as a subordinate factor of good relations, autonomy, environmental mastery, personal

growth, life purpose, and self-acceptance. According to the literature (Clarke, Marshall, Ryff, & Wheaton, 2001; Ryff & Keyes, 1995), structural models of wellbeing employing different modalities can generate significantly diverse results. Consequently, the results of self-administered scales are more reliable than those of pre-test telephone surveys. This also explains why there are seemingly contradictory findings in the literature. Self-administered questionnaires were employed in research that revealed lower factor correlations, whereas telephone or in-person interviews were utilized in studies that found less evidence for the multidimensionality of Ryff's PWB (Kafka & Kozma, 2002; van Dierendonck, 2004). In a study the six dimensions of PWB were judged differently enough to consider independent constructs, and confirmatory factor analysis of the underlying structure supported the supposed six factor model with a single component (Clarke et al., 2001). According to the expert agreement over content of the adapted version and the result of factor analytic procedure ensure the content and construct validity. Therefore, BPWBS-42 can be taken as highly reliable and valid tools for measure PWB of YAs of Bangladesh.

### **Identifying the Components and Predictors of PWB**

Factor analysis from the priority gathered data shows that each of the 42 items of PWBS-42 has factor loading over 0.5 on at least one of the six component factors of autonomy, environmental mastery, personal growth, positive relations, purpose of life or self-acceptance which confirms all six of them as components of newly adapted BPWBS-42. Gender, age, birth order, socio-economic position, marital status, physical disease, and mental illness were all shown to be non-significant predictors of PWB in a comparative analysis of the current survey data (Table 9). The current findings confirmed prior findings that age and gender had no significant relationship with happiness (Khumalo et al., 2011). In line with Myers and Diener's (2016) claim that "knowing someone's age offers no indication to the person's average level of wellbeing," (p. 11), the current investigation discovered no significant differences in PWB between age groups. When Ryff (1995) looked at the potential of differences in PWB between age groups, he discovered a varied pattern of substantial age differences, but no clear trend. This absence of a clear age trend, as well as statistically negligible changes in the manifestation of happiness throughout a lifetime, can be attributed to a variety of variables, including personality traits and shared, unchanging living circumstances (Horley & Lavery, 1995). To find whether any difference lies in the different levels of education, students from different institutions, and living condition one-way ANOVA (see Table 8) was applied. The *F* score in each of the variable measured was not statistically significant corresponding to their degrees of freedom. These findings were differing from the previous studies where urban living, employment, education and marital status associated with higher PWB (Khumalo et al., 2011). In conclusion all of the following variables that gender, age, birth order, socio-economic status, institution, living status, level of education, marital status, and physical or mental health is not the predictors of PWB according to the result from the study. This finding is consistent with previous research findings that found that coping strategies (Freire et al., 2016), communication (Miller, 1997), having more positive relationships with family, significant other, and friends (Chow, 2007), optimism (Burriss et al., 2009), resilience and empathy (Vinayak & Judge, 2018) were more significant than demographic predictors of PWB (Harding, Lopez, & Klainin-Yobas, 2019).

### **Developing an Intervention Program**

It is possible that by applying different types and level of intervention PWB score of participants can be enhanced. The researchers evaluated the relevant, existing literature on PWB, including the theoretical concepts, principles, and methodologies that were created by Ryff (1989), based on the 6-factor model PWB by Ryff (1989). (1989). All of the information gathered has aided researchers in developing the software, which is divided into six (6) sub-programs. All of these sub-programs, which are based on Ryff's PWB paradigm (1989). These findings would have a significant influence on the relevant body of knowledge linked to psychology in general and PWB in particular, both theoretically and practically. For such an influence to be more significant, the program's content authenticity must be validated before to implementation, otherwise the consequences will be fictitious. The "Feeling Good" intervention module was created with the goal of evaluating the efficiency of an intervention program based on the promotion of PWB in Yas. The findings of this study demonstrate that this intervention was successful in boosting PWB, particularly in terms of personal development. This is consistent with a preliminary assessment of the PWB program (Ruini, Belaise, & Caffo, 2006), which found that this method improved PWB significantly, indicating that the PWB program might have substantial therapeutic implications (Ginsburg, Riddle, & Mark, 2006; Muris, van der Pennen, Sigmond, & Mayer, 2008) According to the results of the assessment, there is a significant change between pre-test and post-test scores in the Autonomy

( $p = 0.04$ ), Personal Growth ( $p=0.03$ ), Positive Relationship ( $p =0.00$ ), and Self-acceptance ( $p =0.00$ ) subscales (table 10).

The current study has some limitations. The first limitations are there is no control group in this experiment. If there is a control group which will not get any intervention and the results show significance difference in improvement due to intervention between control groups and experimental, we can more strongly claim the effectiveness of intervention. There are strengths and limitations of psychological interventions. There exist different levels of interventions primary, secondary and tertiary. Effects of intervention of multiple levels on the current study sample remain a future possibility. The intervention process was done during the pandemic COVID-19. To avoid social contact zoom was chosen as the platform to go to conduct the process online. There are multiple drawbacks with online intervention programs. With all kinds of variables like the internet speed, environment of the student being intervened and the intervener are some of the important ones. These all must be strictly maintained to make sure of a standard intervention program. It opens further possibility to see what could be done better ensure all the surrounding matters in the future to have better result through intervention and also possible face to face encounter maintaining safety regulations.

This research backs up the concept of seeing young adults as a period of opportunity and good growth, allowing for the adoption of modern systemic theories of development that emphasize on the individual's relationship with their environment (Lerner, Li, Valdesolo, & Kassam, 2015). The focus on the organism-context as a unit of study (Overton & Ennis, 2006) is based on the idea that human development involves mutually influencing connections with the environment (Brandtstadter, 2006) that, when mutually advantageous, form adaptive development rules (Heckhausen, 1998).

Because of the flexibility that defines this period of human development, connections with our environment are of particular relevance in the study of well-being and good functioning among young people (Lerner et al., 2015). Promotion of well-being in young adults can aid in the achievement of positive outcomes while also functioning as a buffer against bad outcomes such as psychological illnesses (Park & Peterson, 2003). As a result, wellbeing not only serves as a key indicator of positive development, but it can also be used to ensure optimal mental health (Park & Peterson, 2003) and to identify beneficial adjustment pathways between adolescents and their environment, resulting in a higher likelihood of achieving positive changes during the transition to adulthood (Lerner et al., 2013). To validate the efficacy of PWB intervention in improving PWB and reducing YA distress, more study with bigger samples and longer follow-up is needed.

## **Conclusion**

This research backs up the concept of seeing young adults as a period of opportunity and good growth, allowing for the adoption of modern systemic theories of development that emphasize on the individual's relationship with their environment (Lerner, Li, Valdesolo, & Kassam, 2015). The focus on the organism-context as a unit of study (Overton & Ennis, 2006) is based on the idea that human development involves mutually influencing connections with the environment (Brandtstadter, 2006) that, when mutually advantageous, form adaptive development rules (Heckhausen, 1998).

Because of the flexibility that defines this period of human development, connections with our environment are of particular relevance in the study of well-being and good functioning among young people (Lerner et al., 2015). Promotion of well-being in young adults can aid in the achievement of positive outcomes while also functioning as a buffer against bad outcomes such as psychological illnesses (Park & Peterson, 2003). As a result, wellbeing not only serves as a key indicator of positive development, but it can also be used to ensure optimal mental health (Park & Peterson, 2003) and to identify beneficial adjustment pathways between adolescents and their environment, resulting in a higher likelihood of achieving positive changes during the transition to adulthood (Lerner et al., 2013).

## **Recommendations**

To validate the efficacy of PWB intervention in improving PWB and reducing YA distress, more study with bigger samples and longer follow-up is needed.

## **Scientific Ethics Declaration**



The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

## **Acknowledgements or Notes**

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**IConSoS 2022: International Conference on Social Science Studies**

## **Pleasure Reading: The Gains of Student Teachers of English Obtained from a Reading Journey**

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**Abstract:** It is an undeniable fact that reading books is beneficial in many ways. However, a great number of potential benefits are likely to be observed when these readings are realized primarily for pleasure. This article reveals some of these benefits which were identified through a qualitative case study conducted with the voluntary participation of 37 pre-service English language teachers studying at a state university in Türkiye. The study aimed to investigate the pre-service teachers' language- and culture-related gains as well as the gains regarding personal growth from a pleasure reading experience. Qualitative data were collected through written reports that students filled out after reading the books they chose based on their individual preferences. The content analysis of the reported answers revealed that pleasure reading was most beneficial for vocabulary development regarding students' language-related gains. On the other hand, they stated that their biggest culture-related gain was obtaining the ability to understand people living in a specific time period. The students also noted that the most significant contribution of their reading experience to their personal growth was to give them a new perspective.

**Keywords:** Reading, Pleasure Reading, Literature, English Language Teaching, Student Teachers

### **Introduction**

According to the definition made by the National Literacy Trust (2016), reading for pleasure is the reading we do with our own will in order to reach the satisfaction that the act of reading will bring. In addition, readings that are started at the request of someone else and continued only because we are interested are also referred to as "reading for pleasure" (Clark and Rumbold, National Literacy Trust, 2006). Krashen (2004) calls the same concept "free-voluntary reading (FVR)" and defines it as the readings that we do only because we want to, and there is no reading comprehension question at the end of the chapters.

So, when people are willing to devote their leisure time to reading, does this make it more beneficial? Clark and Rumbold (2006) state that when people actually choose to read (rather than being required to do so), then they read for pleasure. They explain that reading for pleasure means selecting texts that suit individuals' own interests.

There is strong evidence that people reading for pleasure in their spare time is significantly beneficial. Clark and Rumbold (2006), when people read voluntarily rather than out of obligation, they are reading for pleasure. These readers read wherever and whenever they want, depending on their individual preferences and interests. In addition, Clark and Rumbold (2006) drew attention to the social and personal benefits of such reading and stated that those who read for pleasure have more knowledge and language proficiency. In another study conducted by Ross (1999), it was revealed that reading for pleasure is a must for some people.

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## **Literature Review**

### **A) Pleasure Reading and Language Learning**

Many studies claim that children and adults should be encouraged to read because it can significantly impact their future. As a result of their review of the research literature, Clark and Rumbold (2006) listed the many benefits of reading for pleasure:

- It improves reading comprehension and writing skills;
- increases grammar knowledge;
- increases vocabulary;
- helps to develop a positive attitude towards reading;
- helps to become a more confident reader;
- provides enjoyment during lifelong reading experiences;
- provides general knowledge in different fields;
- provides a better understanding of different cultures;
- facilitates inclusion in society and
- presents information about human nature.

Krashen (2021) points out that one of the most effective tools for learners' language education and personal growth is self-selected reading for pleasure, stating:

“This is a win-win-win-win situation: It's pleasant, and it works for language, knowledge, developing empathy, and a healthy suspicion of simple solutions. In this case, however, the simple solution is correct” (Krashen, 2021: 2). Concurrently, Krashen (1982) points out that reading for pleasure provides comprehensible input, which includes adequate exposure to the language, a stress-free learning atmosphere, and engaging content that leads to language acquisition. In the same way, Grabe (1991) and Paran (1996) argue that reading for pleasure enhances learners' general language competence through practising the automaticity of the words and decoding the symbols. Besides, reading for pleasure helps learners to practice the words in an indirect setting and reinforces previously learned language. It promotes vocabulary growth that helps improvement in language production.

### **B) Pleasure Reading and Pleasure Reading & Cultural and Personal Development**

Most studies investigating the possible benefits of pleasure reading have revealed a strong connection between emotional and personal development. Studies have shown that pleasure reading improves empathic skills, and readers are better able to understand others' identities as well as their own.

Billington (2015) conducted a study in which 4000 adult pleasure readers from the UK expressed their opinions through online surveys. Participants were asked about their general mood, well-being, and daily social interactions. The findings of the study showed that pleasure reading resulted in an enhanced sense of community, social inclusion, and willingness to participate in social activities in participants.

Mar et al. (2006) conducted a study to investigate the effects of reading on the social skills of 94 university students in Canada. The results revealed that reading was strongly associated with social competence and, in particular, empathy. The findings showed that empathizing with the characters in the stories helped them empathize with real-life people.

Wanting to delve deeper into the relationship between reading and empathy, Mar et al. (2009) conducted a more extensive study of 252 Canadian students, taking into account variables such as openness, fondness for reading, and gender. The authors determined a positive correlation between pleasure reading and empathy. They stated that these findings would destroy the belief that people who read a lot are socially awkward.

There is also strong evidence that pleasure reading has a positive effect on understanding one's own identity as well as the identities of others. In a study conducted by Moyer (2007) with the participation of 62 readers living in the US, the effects of pleasure reading were collected through questionnaires and semi-structured interviews. Benefits that the readers often cited were increased ability to understand oneself and others, recognition of different cultures and societies, and learning about other historical periods. In addition, participants stated that they had advanced skills in understanding the culture, perspectives, social class and ethnicity of others.



A study conducted by Vasquez (2005) on 18 university students who attended weekly literature classes revealed that reading helped students to understand the ethnic identities of others and to form their own identities. Moreover, findings showed that literary discussions in the classroom also increase students' cultural and ethnic awareness.

In the literature review prepared by the Reading Agency (2015), previous studies on the benefits of reading for pleasure are summarized. The graphic below shows the overall outcomes of reading for pleasure.

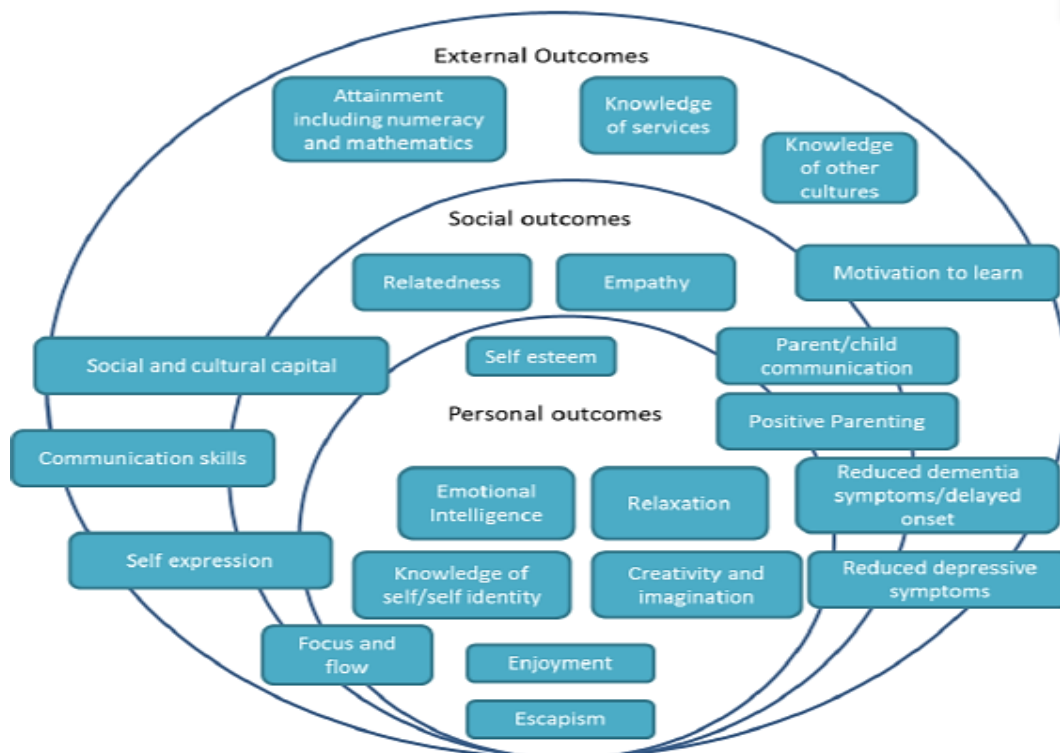


Figure 1. Overall outcomes map

## Research Questions

The current study was conducted to find answers to the following research questions:

1. What potential gains, in terms of personal growth, were obtained by the ELT junior student teachers from pleasure reading experience?
2. What are the students' language-related gains?
3. What are the students' culture-related gains?

Please embed tables and figures in appropriate areas within the document and center them horizontally. Tables and figures should not exceed the given page margins. Provide captions (maximum length: 6 to 8 words) for each table or figure. Centre the caption above the table and below the figure. Please reference the table or figure in the text (Table1). Please do not use vertical lines in tables. For figures, GIF and JPEG (JPG) are the preferred formats.

## Sampling and Procedure

This current case study was carried out with the participation of 37 volunteered student teachers of English (21 females and 16 males) enrolled in an English language teaching (ELT) department at a state university in Türkiye. The participants were recruited by using convenience sampling method. They were asked to choose an original English novel of their preference and read. What needs to be noted is that each participant must pick a different novel. In addition, the participants were asked to keep a vocabulary notebook and write down the words they did not know together with the sentences in which they were used and to construct original sentences

they would construct by using these words. Afterwards, they were asked to answer the questions in parallel with the research questions in the form of a written report.

Table 1. Number of participants

Gender	Number
Female	21
Male	16
Total	37

## Research Instrument

After reading the book, students were asked to submit a written report in which they answered the following questions under three different headings:

1) Language and culture-related gains:

- a) Please write about your overall language-related gains from this reading experience.
- b) Please write what you have learned in terms of culture-related elements (cultural enrichment).

2) Personal growth:

- a) How did this reading experience affect your personal growth? Please explain your "before- and after-reading reflections" with regard to changes, if any, with respect to your perspectives, mindset and goals.

## Data Analysis

Content-thematic analysis was used while analyzing the collected data. The codes used for data analysis were descriptive. During the coding process, some themes and categories related to the research questions were created based on the response patterns of the participants (Creswell, 2012). The students' written answers were examined several times before the coding process, and frequently repetitive words and expressions were identified. After the coding process was carried out, common themes were determined. The findings were presented under three headings in line with the research questions. In order to ensure anonymity when quoting students' writings, numbers were used instead of their names (Student 1, Student 2 etc.)

## Results

The gains of students related to language, culture and their personal growth from their reading experiences are presented in Tables 2, 3 and 4, respectively. The number of references is shown in parentheses.

### A) Language-related Gains of Students from their Reading Experiences

Table 2. Students' language-related gains (n=38)

Themes
Vocabulary development (22)
Recognition of new grammatical structures (15)
Familiarity with the actual use of the target language (12)
Improvement in reading skills (8)
Improvement in pronunciation skills (2)
Familiarity with the literary use of the target language (8)
Improvement in discourse competence (2)
Improvement in inferring skills (2)

When writing about language-related gains, the majority of students mentioned the positive effects of this particular reading experience on vocabulary development (22 references). In addition, 15 students argued that while reading, they recognized new grammatical structures. 12 students stated that while reading, they had the opportunity to be familiar with the real use of English. On the other hand, they also mentioned that reading

novels gave them a chance to see the literary use of L2 (8 references). Moreover, in many written reports, it has been stated that students' reading experiences contribute to the development of various language skills or areas. These are reading (8 references), pronunciation (2 references), discourse (2 references) and inferring (2 references).

Examples of excerpts on the language-related gains from the students' reading experiences:

*I had the opportunity to learn words that I had never seen before. I also learned how these words are used in sentences. For example, I learned where and how to use the "whence" conjunction in a sentence. I also learned a lot of phrasal verbs in this reading adventure. (S17)*

*"The Catcher in the Rye" draws intense attention based on literary interest and linguistic importance. It shows the colloquial language that teenagers used at that time. I also learned numerous slang words and new different expressions. It enriched my vocabulary knowledge. (S37)*

*Starting to read this book has given me many benefits other than learning vocabulary from the book. I am a person who likes to read books in my native language. Thus, reading this English book was a good activity for me. As I read the book, I started to control how I should pronounce the words I did not know. I learned how different ways a language could be used in daily life and in a literary way, and I was exposed to natural language. I was also able to connect the culture and language (S4)*

## B) Culture-related Gains of Students from their Reading Experiences

When writing about culture-related gains, most students expressed that they had the opportunity to recognize people's perspectives in a specific time period (20 references). Thanks to this particular reading experience, they also learned about different cultures (12 references) and about different ideologies and philosophies (6 references). Last but not least, the students stated that they learned various historical facts regarding different societies (4 references).

Table 3. Students' culture-related gains (n=38)

Themes
Recognizing the perspectives of people living in a specific time period (20)
Building cross-cultural awareness (12)
Learning about different ideologies and philosophies (6)
Learned about historical facts regarding different societies (4)

Examples of excerpts on the culture-related gains from their reading experiences:

*Before reading this book, I had no idea about the Victorian Era and its society at that time. Now, I also know how industrialization affected society at that time. On the other hand, I learned much about society's morals, beliefs, superstitions, world views, etc. Before reading the book, I did not know that there was a class system at that time in the UK. Every country has its class system, but at that time, it was brutal. After reading it, I learned about the class system in the UK. (S10)*

*Before I started the book, I looked at the pictures of the place where the events took place and read them as if they were re-enacting the events there. I compared the city in the 1900s with the present state of Oakland. While reading the literary work, I learned a lot about the period; I witnessed the struggle of the artists of the period more closely, and I saw the point of view of the bourgeois section of the people. As a result, it has been a great cultural gain for me. (S15)*

*In this book, I learned about the place of women in social and academic life as a cultural element of that period. I learned that a woman always starts life behind and must make extra efforts for similar conditions. [Virginia] Woolf, for example, explained this with the example of Judith Shakespeare. She emphasized that if Shakespeare had a sister as talented as himself, she would never have seen the same value. (S16)*

### C) Students' Gains regarding their Personal Growth

The majority of the students who listed the gains regarding their personal growth mentioned that their current perspectives towards a certain aspect of their lives have changed or that they have gained a brand-new perspective thanks to the books they read (19 references). In addition, 11 students mentioned how this reading experience has led them to self-reflect on their own lives and make new decisions to live better. 6 students stated that their reading motivation has increased and that they would read more in the future.

Table 4. Students' gains regarding their personal growth (n=38)

Themes
Gaining a new perspective (19)
Fostering self-reflection about one's own life (11)
Increase in reading motivation (6)
Improvement in empathetic skills (6)
Improvement in imagination (2)

Examples of excerpts on the students' gains regarding their personal growth:

*Robinson Crusoe left a lot of impact on me in a way how I want to live my life. Even though I carry Robinson Crusoe's characteristics, I was also scared to get out of my way because I was afraid that I would hurt my loved one's feelings by making them feel like I did not respect their opinion. I was also a people pleaser. As I was reading this book, I realized that despite many obstacles, Robinson Crusoe was free, doing what he wanted, and exploring himself. I was amazed by that, and without realizing it, I started to come out of my shell and live my life how I wanted to live it. (S7)*

*"The Art of War" helped me become a planned and provident person. While reading, I learned to have a different view on matters and always consider a different perspective towards events around me. The book taught me what makes a great leader and the hardship of being a leader in dire situations. I realized what it meant to be a soldier and a civilian in that era when wars were being waged. This book showed me that a lot has happened on this earth and will be happening whether I realize it. Being aware of myself and my challenges will help me throughout my life. Adapting to situations, even if I am uncomfortable, will help me develop. (S9)*

*I did not have the habit of reading books in English. I had some prejudices about this situation. After this book, my prejudices were broken. I noticed that if I found a book that was suitable for me, it would be fun for me. (S12)*

## Discussion and Implications

This study explored the potential gains of ELT pre-service teachers' from a pleasure reading experience with an emphasis on their language and cultural development as well as their personal growth. As a pleasure reading activity, students were asked to read an original English novel of their choice and fill out a written report describing the mentioned gains from a reading experience. Although not generalizable, the findings of this study support the evidence in previous studies regarding the benefits of pleasure reading. Exploring the benefits of pleasure reading for students will contribute to the dissemination of at least a reevaluation of the importance of this concept by teachers and policymakers at all levels of education, from primary to university.

Regarding the first research question (what are the potential gains, in terms of personal growth, obtained by the ELT junior student teachers from this particular pleasure reading experience?), students stated that the experience of pleasure reading contributed to their personal growth in various ways. These benefits include gaining a new perspective, fostering self-reflection about their own life, increasing reading motivation, improvement in empathetic skills as well as imagination.

Concerning the second research question (what are the students' language-related gains?), students indicated that through this particular pleasure reading experience, they improved their vocabulary and learned new grammatical structures. Moreover, students stated that they became familiar with both the daily and literary use of English. They also noted that they had the opportunity to develop their discourse competence as well as many different language skills, namely reading, pronunciation, and inferencing.

Regarding the third research question (what are the students' culture-related gains?), the students stated that thanks to the novels they read, they got to know the perspectives of people living in a specific time period and gained intercultural awareness by comparing their own cultures with other cultures. In addition, students stated that they learned different ideologies and philosophies described in their books and learned some historical facts that are important for different societies.

Regarding the limitations of the study, due to the limited number of volunteer students participating in the study, it is difficult to obtain generalizable results. Another limitation of the study is that only descriptive analysis was made, and quantitative data were not collected. It is also recommended to use questionnaires and structured interviews in future studies.

Follow-up studies may also be carried out to determine the long-term benefits of pleasure reading. Students or teachers can establish reading clubs at schools to encourage reading more than one book, and it can be investigated whether the number of books read affects the results.

## Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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**IConSoS 2022: International Conference on Social Science Studies**

## **Exploring Challenges Faced by Managers Dealing with Multi-Generational Workforce**

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**Abstract:** Hive Digital Media has a diverse employee workforce with employees from different generations. The management team is struggling to motivate the employees, instruct employees to perform tasks adequately and consistently and have seen an increase in employee turnover. This study aimed to explore the challenges managers facing when dealing with multi-generational workforce. Qualitative research was conducted among managers to understand how they manage multi-generational workforce. Purposive sampling technique was used to select the participants. One-on-one in-depth interview was conducted virtually, and open-ended questions were used to collect the data. The study found that managers should understand the different generations and their personalities as a base. Managers must then take the time to identify each employee as an individual person and what the need, wants and goals are of each employee. By managers upskilling themselves with knowledge on the different generations, they can equip themselves with the tools they need to solve the challenges successfully. Managers need to make a concerted effort to make time for communication and getting to know each individual employee. Using the information on the different generations as a base but gaining in-depth information on employees. It could be concluded that although it is important to understand the different generations, personalities need to be managed and categorising or stereotyping employees into generation groups needs to be avoided.

**Keywords:** Multigenerational workforce, Challenges, Personality, Communication

### **Introduction**

Every business is different in the way they operate, but some similarities can be found across all businesses. A trending challenge that many businesses face currently is managing a multi-generational workforce. Each generation has its work values and beliefs. If a manager cannot address these differences adequately, it could harm the business.

Managers in the twenty first century workforce can find themselves managing up to five different generations explains Cushing (2019), adding value and diversity to their team, working together to achieve the workforce goals. Cushing (2019), adds that for these multi-generation teams to work together, it is the manager's responsibility to understand each generation, find common ground among the different generations, motivate, and inspire the team to work together to achieve the organisations goals, and create a successful work environment.

The current working generations are Baby Boomers (born between 1946 and 1964), Generation X (born between 1965 and 1980), Generation Y (Millennials) (born between 1981 and 1996), and Generation Z (born between 1997 and 2012). Differences exist in the work values and beliefs of employees from these different generations. Failure to address these differences can lead to conflict in the workplace, miscommunication, and

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lower employee productivity. This differentiation amongst the workforce is called workforce diversity. Handling such a complex diversity poses a challenge to Managers as they need to handle the employees who have different work ethics, ambitions, views, mindsets, and work styles (Adams, 2000). Therefore, the aim of this study was to explore the challenges experienced by management due to diverse workforce differences within Hive Digital Media.

## **Literature Review**

### **Business Environment**

Kemp (2016) explains that in the past employees had to adapt to an organisation to remain employed. Whereas in today's times, for an organisation to retain its employees, the organisation has to adapt to the employees' needs and wants. Authors, Heyns and Kerr (2018) advise that the change in workforce demographics is a concerning topic for managers and businesses. In a business, up to four different generational groups could exist.

Molefi (2018) adds to this stating that in the past businesses followed a hierarchy where senior positions were run by older employees and younger employees followed orders with no hesitation or questions asked. Molefi (2018) advises that currently, it is no longer about age but about the experience and performance of employees. This can create conflict with older employees un-accustomed to this way of business being run and taking orders from someone they see as a junior.

By gaining an understanding of the differences that exist between multigenerational employees, management and businesses can minimise workplace conflict, enhance business culture, and increase employee productivity, creating a pleasant and respectful workforce. Vugts (2016) conveys that insight into generational differences can help managers understand the needs of generations. This is backed by Kupperschmidt (2021) stating that managers who gain a thorough understanding of these generational differences can improve employee productivity by using the strengths of these generations to benefit the business and create a powerful workforce. Butler (2020) stresses that as there are policies against racism and sexism, policies should be put in place and supported by all employees, enforcing generations to work together. Butler (2020) further suggests that an organisation needs to work on a shift in culture to achieve a generational neutral workforce. Butler (2020) explains that employees need to work on their reactions when dealing with other generations. For example, an employee should avoid rolling their eye or a negative reaction when another employee admits to not knowing how to use a program like PowerPoint. The immediate response should be helping. This will create a two-way information-sharing environment and a stronger workforce. Butler (2020) advises that managers should build cross-generational mentoring programs and enforce the value that every employee is dependent on one another's success.

Schoeder (2019) shares the following tactics to improve generational communication: Managers should team up members with different strengths to complete a project. Approach challenges as the unbiased party and talk it out with the parties involved. Check-in with team members and teach them to check in with one another. Teach employees to approach situations with kindness and consideration.

### **Influence of External Factors**

Creary et al. (2019) notes that generational categories can help managers understand employees, but managers need to make sure that this does not create biases and employees are seen for who they are as a person. External factors also take into consideration the productivity and behaviour of employees. A study by Beck and Harter (2021) reports that a manager influences employee engagement, turnover, and productivity in a business. Managers also play a vital role in positive business outcomes. There are several different management styles, each with its positives and negatives. Companies need to ensure that they hire a manager with a style that fits the needs and values of the business.

Papa (2017) reports that family life can affect an employee's behaviour. There is a big gap in the literature when it comes to external factors that influence employee performance and behaviour. The literature in this study confirms that understanding the different generations in the workplace is important as they can affect the workplace if not managed correctly. Just how family life can affect an employee's behaviour, factors like living



standards, physical health, mental health, personal priorities, and marital status can affect and impact an employee.

The most recent external factor affecting organisations is the outbreak of COVID-19. An article written by Mirza (2021) discusses the effect this pandemic has had on organisations and how the quality of leadership needs to be enhanced to deal with it. Mirza (2021) explains that tough decisions are being made to keep organisations from going into liquidation and these decisions have a great chance of affecting the workforce negatively. Mirza (2021) provides the following examples of challenges managers are currently facing in the workplace, ensuring that the workforce is motivated to achieve the organisational goals, stimulating multigenerational workforces engagement levels, continuously upskilling the workforce to keep up with the evolving nature of the industry, making sure new employees receive a productive and meaningful orientation and the increasing priority of managing employees' health and wellbeing.

Mirza (2021) notes that health and wellbeing issues are caused by the following examples: “fatigue resulting from excessive screen time, fear of losing the job compounded by feelings of inadequacy, career derailment, suppressing the rumour mill (gossiping), disciplinary issues, organisational politics, family pressures, separation anxiety for expats from their loved ones, and too much time to oneself”.

## **Research Methodology**

### **Research Philosophy**

Interpretivism is described by Maree (2016) as an approach that focuses on understanding humans from their perceptions of the world, observing the world of the participant from the inside. The aim is “to offer a perspective of a situation and analyse the situation under a study to provide insight into the way in which a particular group of people make sense of their situation or phenomena they encounter” (Maree, 2016). Since the study is focused on the views of the management team and gaining insight into the managers' world, interpretivism was used.

### **Population, Sample, and Sampling Strategy**

A target population is defined by Saunders et al. (2019) as a “complete set of cases or group members that is the actual focus of the research inquiry, and from which a sample may be drawn”. The study target population is managers and comprised of Hive digital media Management employees. There are nine managers at Hive Digital Media. Eight managers were purposefully selected for this study who had more than five years of managerial experiences.

### **Data Collection**

A semi-structured interview was used in this study. Data were collected using a one-on-one interview. The individual interview was audio recorded to note the groups' responses. Due to the COVID-19 pandemic and restrictions hosting a virtual interview was the most effective way to perform the interview. The email invitation was accompanied by a consent form for participants to read, sign and send back, along with a separate document with top-line information on the different generations and leadership styles. All invited participants accepted and took part in the interview over skype. An interview schedule was utilised.

The interview questions were formulated with the research objective in mind. The interviews were scheduled for an hour and all the interviews remained in that time frame. The participants were made aware that the interview would be recorded in the consent form (that was attached in the email invitation) and at the start of the interview. The instrument was made up of open-ended questions that were used to direct the conversation to achieve the research objective. The participants were asked the same questions in the same order, following the interview schedule. The interview began with a welcome and brief on the study. This transitioned into discussing general demographic information. The next topic of discussion was challenges managers experienced due to diverse workforce differences within Hive Digital Media.

### **Data Analysis**

After all the interviews were conducted, the researcher listened through all the audio again and transcribed the answers using Microsoft word. Thematic analysis was used to analyse the qualitative data. The participant's answers in word format were then coded according to the research questions and common themes. The data was prepared for analysis by being coded and organised, grouping it into different categories, using NVivo (an online computer software program that assists researchers analyse qualitative data) and Microsoft excel. The answers received from the participants were checked for common themes. Common views, patterns, or themes that reflect repeatedly in the received data. Graue (2015) explains that coded data is analysed and assists in drawing conclusions which are then used to present the findings.

### Ethical Considerations

Ethical approval for the study was obtained from the MANCOSA ethics committee. Permission letter was also obtained from the organisation before collecting the data. Participation in the study was voluntary and they could withdraw from the study any time they wished to without any penalty. Confidentiality and anonymity was maintained at all times.

### Findings and Discussion

The interview results confirmed that managing a multigenerational workforce is challenging. The increase in diversity in the workplace is beneficial for an organisation but it can also present challenges, as the generational divide among employees create differences. Most of the participants responded that they found managing a multigenerational workforce challenging.



Figure 1. How participants find managing a multigenerational workforce

Figure 1 displays the other feelings the participants have around managing a multigenerational workforce. Two participants find managing a multigenerational workforce interesting. A participant explains how they find it challenging, unpredictable, and ever-changing.

Participant three: *“Challenging, unpredictable, not easy, and ever-changing. You are managing people from different backgrounds and age groups. As a manager, you must adapt and be malleable and keep up with the trends of different management skills and needs of particular individuals so that they all feel heard and included.”*

Goins (2021) suggests that managers who manage a multigenerational workforce should minimise generational stereotyping, improve their communication, and work on innovative training plans, to see results. All generations want to feel respected and appreciated, and if managers are successful in making their workforce feel this way productivity will improve and increase (Goins, 2021). One participant responded that they have no problems with their multigenerational team as they feel it comes down to personality.

Participant two: *“Finds it fine and has no issues. Personality has an impact on a person’s work ethic.”*



Older employees are thought to be more diligent, on time, follow professional conduct, have respect, are loyal, follow processes easier, struggle with technology, set in their way and disciplined. The younger generation is thought to be almost the opposite of the older generation. With respondents labelling the younger generation as being better affray with technology, implementing tasks easier, don't have a sense of urgency, needing constant support and reminding, not much respect, and not set in a routine and can work from anywhere. For example, a participant expressed that:

Participant eight: *“Older employees are more disciplined than younger employees. Younger employees are more free-spirited (casual, easy-going about things). Get more innovation from younger employees. Younger employees tend to question decisions more. You can give an older employee instruction and they just follow it; they don't ask questions they just get it done.”*

Kemp (2016) advises that millennials have been stereotyped as being lazy, entitled, having poor communication skills, and lacking in commitment and loyalty. He suggests that managers should rather get to know the employees than allow stereotypes to affect their decisions. Kemp (2016) goes on to explain that managers may find that millennials may be asking questions to gain a better understanding and not trying to be disrespectful. And what may seem to be lazy is just the efficacy that comes with millennials being *technologically* savvy.

The information that came out of the difference between the generations also reflects in the results from the challenges faced when managing the different generations. Meaning that the differences between the older and young generation are a challenge as managers must spend time trying to get the two generations to understand, respect and learn from each other.

### **Sub Theme: Character and Level of Maturity**

Creary, et al. (2019) argues that the generational differences are not because generations change but because as employees get older, they forget how it was when they entered the workforce. One participant responded that the younger generation does need more handholding, but finds that it is based more on personality and maturity: Participant seven: *“It is a personality difference as well, as they're different maturity levels. For example, a generation Y employee can display the same maturity level as a generation Z employee and needs more handholding.”*

### **Theme: Communication**

Graystone (2019) states that managers need to practice effective leadership by understanding and utilising the different types of communications for each generation. Good communication is the key to a successful workforce. The theme of communication was revealed in many different forms. In one form communication is a challenge where the younger generation do not know how to communicate in a business environment and therefore, they come across as disrespectful and aggressive. Another form is that the younger generation talks in a different language (using different terminology) and therefore things can get lost in translation. Participants feel that more time needs to be invested in communication.

Participant one: *“The younger generation not knowing how to communicate in a business environment can come across as aggressive, whereas the older generation knows how to communicate in a business environment.”*

Participant two: *“The older generation is more functional whereas the younger generation is more conceptual. The way they communicate can get lost in translation or need to invest more time in communication.”*

Even though this form of communication was not flagged by the respondents as a major challenge, it is still a challenge that is faced. One participant reported that the younger generation is extroverted were the older generation prefer to work in silos which slows tasks down.

Participant seven: *“There is not a massive challenge between the different generations. They work in very different styles and so the younger generation has a far more extroverted, talk a lot, collaborative way of working, were as the older generation work a lot in silos which can hinder communication. Different work styles and communication.”*

Communication in the form of technology versus face to face was also presented as a challenge. An employee's preferred form of communication is influenced significantly by generation reports Philip and Netra (2021) stating that Generation X, Y and Z were raised in the technology-driven world and are accustomed to using laptops and cell phones as a form of communication and therefore prefer to receive communication this way. Even though traditionalists and baby boomers are picking up on technology, they were not raised in a technology-driven world and therefore prefer to communicate in a formal and direct form. Where the younger generation is used to virtual meetings and communicating through chat platforms like slack and WhatsApp. The older generation prefers communicating through email, over the phone or face to face. This communication barrier causes a challenge as the younger generation feel that waiting for an email slows things down, whereas a quick WhatsApp message can be answered faster.

Participant five: *"The younger generation is very comfortable jumping between communications. Whereas the older generations are very set in using emails and documents. It causes delays in tasks and getting things approved when you need to wait for an email rather than just chatting on slack."*

Face to face communication is a big challenge for the sales team as the sales team needs to go out and see clients. The results reflect that the sales team is made up of the younger generation who prefer to communicate with clients through chat platforms or virtual meetings. The big challenge the managers are facing is motivating the sales team to go out and have face to face meetings with clients.

Participant one: *"The millennial team started in 2019 just before Covid19 and have not really had face to face interaction with clients and are now not comfortable with meeting clients face to face. They prefer meeting on Zoom, so it is a challenge to get them out there and meet clients face to face."*

Lack of respect between generations is a big challenge that was revealed from the results. Molefi (2018) advises that currently, it is no longer about age but about the experience and performance of employees and this can create conflict with older employees un-acustomed to this way of business being run and taking orders from someone they see as a junior. Baby boomer employees are put off by abruptness, disinterest, people feeling superior to them, and political incorrectness. Employees must work on their reactions when dealing with other generations, suggests Butler (2020). For example, an employee should avoid rolling their eye or a negative reaction when another employee admits to not knowing how to use a program like PowerPoint and the immediate response should be helping. Three participants explained experiences they had where they had to try to mitigate between an older and younger employee due to the older employee feeling that the younger employee was being disrespectful.

Participant six: *"Lack of respect between employees. A younger employee spoke disrespectfully to an older employee. The younger generation feels very entitled and see everyone on the same benchmark and doesn't understand that they come across as disrespectful."*

With all the different forms of communication, in the bigger picture communication between generations is a big challenge in a multigenerational workforce.

### **Theme: Work Tasks**

The interview results display interesting cases where work tasks are affected by different generations. The participants found that the younger generation does not see the value or necessity in using some of the data capturing platforms the company use as they see them as a waste of time. It was also found that the older generation is more task-driven and completes tasks faster whereas the younger generation gets distracted easily and don't see the task to completion.

Participant two: *"Some of the admin staff, who are the oldest, are some of the fastest on the team. They are very hard working. Older staff are single task-driven were as the younger generation get distracted and don't take the task through to completion."*

Three participants report their experience with the younger generation not taking deadlines seriously and lacking urgency. This was a common theme that came up in the interview answers.

Participant three: *“Millennials and more relaxed in tasks and in an emergency operation mode they lack the sense of urgency.”*

One participant reported the total opposite responding that even though the task is not done well, the younger generation can multitask better and finish tasks faster.

Participant six: *“Some of the admin staff, who are the oldest, are some of the fastest on the team. They are very hard working. Older staff are single task-driven were as the younger generation get distracted and don't take the task through to completion.”*

The interview results show that the older generation is very set in their ways and find it difficult to adapt to the modern corporate world.

Participant four: *“On the older generation side, a lot of the staff have been with the company for over 15 years and like to look back at what they used to do, which does not work with this current time that we are in. The challenge is to get the older generation to think out of the box and not continue to do what they have always done. The younger generation is keen on new ideas and forward-thinking.”*

A challenge is presented with the idea (that stems from the older generation) that if you are not at the office working from eight in the morning till five in the afternoon, then you are not working. A participant shares an example of this:

Participant eight: *“For example in the development team, the younger employees like to work at night and sleep during the day. It's challenging to adapt to that way of thinking and working as the older generation want to work during the day and sleep at night. You need to think out of the box and can't stick to the traditional work mentality (8-5 workday in an office). There is a perception that if an employee is not in the office they are not working, and that is not the case. Some employees prefer to work from home and do a good job.”*

A participant also expressed how professionalism among the younger generation is a challenge:

Participant six: *“The younger generation needs to understand that there is a certain amount of professionalism and etiquette and reliability with the fact that work is work and we take it seriously and must stick to certain routines and procedures even if we are off-site. They don't stick to professionalism and start to feel like they are being micromanaged and do not like it.”*

### **Theme: External Influences**

The results presented several challenges that managers face due to generations. As well as participants reported that the challenges are not based on generation but personality. The interview results also provided thirteen external influences that affect employees and cause challenges in the workforce. Anxiety is a challenge across all generations and affects employees' productivity.

Participant four: *“The stress levels are taking a toll and the team are tired and trying to get through the day-to-day.”*

Health issues also present a challenge with employees choosing not to be vaccinated or needing to take time off work, do not function at their full potential or are distracted. A participant explains how they have found that employees are using COVID symptoms to avoid going into the office.

Participant seven: *“On a lot of occasions where employees are displaying COVID19 symptoms and cannot come into the office, some people use it as an ongoing excuse not to come into the office, taking advantage of the situation and avoiding the extra supervision that they should get because of their work style.”*

Personal issues and spousal issues also present a challenge where employees are not focused or need time off work. Papa (2017) reports that family life can affect an employee's behaviour. This challenge seems to be heightened by the COVID19 pandemic, as one participant mentions how there was never so many employees needing time away from work. The most recent external factor affecting organisations is the outbreak of COVID-19. Mirza (2021) discusses the effect this pandemic has had on organisations and how the quality of leadership needs to be enhanced to deal with it.

Participant five: *“With Covid19 people and family getting sick affects people emotionally. Where the person is working on tasks, they need to step away to deal with personal problems. Before there was not so many people or time that people have needed to take off to deal with personal problems, like family losing jobs, having to move and being ill.”*

New parents and single parents are also big external challenges that have become even more challenging due to the COVID pandemic. Participants describe how they have challenges with employees who are single parents and are battling financially and emotionally. As well as new parents who are needing time off for scans (male and female) and that they cannot come back to work as they have no one to look after their children, and while working from home are distracted by their children.

Participant two: *“Staff with new babies, there is a struggle to come back to work, not working at full capacity because it is easy to get distracted with a baby.”*

Two-way communication can become effected and difficult, explains Ramlan, et al. (2018) when there is a language barrier. A participant explained their personal experience with challenges they face due to language. Where they have not been taken seriously because they are not fluent in a certain language. They even had to take lessons to improve their language so that they can try and solve the challenge.

Participant eight: *“The language barrier makes it difficult to communicate. People think that if you cannot express yourself in a certain language, you don't know about a certain topic.”*

Living far from work and travelling is another external challenge that is faced by employees. Office time is wasted by employees being stuck in traffic. Fuel becomes a costly expense for employees having to travel a distance to work. As well as employees that work remotely, don't have the office support that the employees have that can go into an office.

Participant three: *“Travelling, live far from the office so the cost of travelling became exorbitant.”*

Office structure is a challenge that a few participants felt very strongly about. Mentioning that all the offices have an open plan office structure which is very distracting. Participants explain how certain employees are not as productive in an open plan office as they get easily distracted. Another participant explains how an open-plan office creates a challenge with noise levels.

Participant three: *“It is an open office structure and there are more animated in their energy, communication, and conversations, neglecting the fact that it is an open office, and you need to be professional and cognisant that you are sharing a space with other people. So when you talk you need to be mindful of that. The noise level is a challenge.”*

Participants found that some of their employees were a lot more productive working from home, were on the other hand other employees were the complete opposite. When the team had to work shifts of half on and half off, it was very disruptive, and employees could not get into a routine.

Participant seven: *“Working half in the office and half at home there is a difference in productivity in people. Some people respond well to working in the office and it brings out the best in them. Whereas some people cannot handle the level of distraction that is in an office.”*

Loadshedding and the internet were found in the results as external influences. The constant loadshedding is disruptive and can cause employees to lose hours of work time or fall behind on work, causing tasks to take longer to complete.

Participant six: *“Load shedding stops people from being online and disrupts the workday.”*

Participants explained how data became a challenge with all the employees working from home and needing to use the internet through a dongle as they could not get access to the supplied office internet. As well as how employees have bad internet signal where they live and battle with connection issues.

Participant two: *“Connectivity issues, where staff have to work at the office due to blaming incomplete work on connectivity issues.”*

Only one participant out of the eight felt that the workplace challenges are not caused by external influences but by generational differences.

Participant one: *“External influences do not affect the team. One member with family issues but not a big impact. Challenges come from generational differences.”*

Papa (2017) reports that family life can affect an employee's behaviour. There is a big gap in the literature when it comes to external factors that influence employee performance and behaviour. Results from the participants give a clear indication that external influences play a role in the performance of employees, across all generations. The literature in this study confirms that understanding the different generations in the workplace is important as they can affect the workplace if not managed correctly. Just how family life can affect an employee's behaviour, factors like living standards, physical health, mental health, personal priorities, and marital status can affect and impact an employee.

## **Conclusion**

Even though the managers at Hive Digital Media face challenges in their teams, they will have better leverage and success rate if they work on gaining knowledge on their team as individuals, understanding what makes these individuals want to continue working at the company and the best way to lead them.

## **Recommendations**

It will be beneficial for Hive Digital media re-evaluate their monthly team meetings and structure them around being 50% informative and 50% team building. In this way, the team is being informed of important company information, information is being shared that keeps the team feeling involved and valued, and the managers are learning about their team through the team building activities. It is the important details that Hive Digital Media managers need to learn about their employees.

To improve the Hive Digital Media workforce and make the team even more successful, employee evaluations need to be conducted and managers need to develop strategies around the results of the evaluations. The company can look at employing a human resource employee to assist the managers with the time-consuming task of finding out important employee information. In addition, assist with building and implementing employee engagement strategies.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

## **Acknowledgements or Notes**

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## **Psychological Assessment of the Wellbeing and Economic Related Issues of the Albanian Population Living in the Pandemics**

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**Abstract:** As Covid19 pandemic exposed all people to be living in the pandemic, psychological concern was raised referring to vulnerable populations who could be developing psychological concerns. Therefore, during November 2022 an assessment survey was launched online aiming to screen and assess the psychological wellbeing of Albanian adults referring to their level of education and economic relatedness. Objectives of the study consist in (i) assessing the socio-demographic and economic data referring to the perceived financial expectancies and hopefulness; (ii) screen the psychological concerns related to mental health and wellbeing in relation with their economy; (iii) assess comfortability when meeting others with levels of education. Data was processed through SPSS and was analyzed using non-parametric Chi square tests and crosstabulation. Results showed that economic problems are relevant to the level of personal revenues. Sensitivity towards mental health problems is detected with the rise of the level of education. People's capacities to resuming life just like before the pandemic has no relationship with personal revenues. Still, people report that meeting the others does not make them feel better and calmer, and makes people feel happier only in minor cases. Conclusions show that social distance could have taught people that being physically distant from others, has their own benefits.

**Keywords:** Psychological wellbeing, Mental health, Education level, Revenues level, Economy.

### **Introduction**

The technical committee of experts for the Covid19 outbreak launched the Reopening strategy which started in May 2020 considering that 90% of the business and activities would open except public transportation and gathering of more than 10 people. The opening happened progressively where all activities including universities and working in person was accompanied by an inclusive vaccination campaign. In October 2022 the decision of the committee of experts decided that "even though there has been a raise in infection rate, restrictions will remain the same" referring to the curfew from 23.00-6.00 am, holding masks, and other conditions of vaccination issues. The spike of the pandemic was worldwide and engaged many research in different countries to investigate wellbeing. Therefore, a COVID-19 Psychological Well-being study was conducted in UK during March 2020 and many other studies in China (Alamsyah & Zhu, 2022). where authors intended to assess how "information overload predicts anxiety and satisfaction" in life. Studies were conducted to assess whether researchers were able to move during the as a result of training, from the "fear zone to the knowledge zone and then to growth zone (Kunar et al., 2020). Where was discussed even the level of productivity in time of stress and anxiety. Youth and their mental health are seen in a "great danger during the pandemic (Branquinho et al., 2022) etc. Research refers to levels of education, specifically university students who report a higher number of negative effects including: Relationships, sleeping eating. (Branquinho et al., 2022). etc.

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After conducting an international study in 2020 by a group of authors (Glotsier et.al.,2020), referring to wellbeing (including psychological flexibility and social support as the largest predictors on wellbeing), it was reported that higher educational levels are associated with higher levels of wellbeing. Research shows that levels of education may alter the level of worries in people since they build up their own protection regarding anxiety and stress; a study in Lebanon showed that “a lower level of education was found to be associated with higher health worries” (Bou Hamad et al., 2021). A study in Denmark focusing on wellbeing before and during the pandemic report a decreased level of well-being observed among both genders and age groups: interestingly the decrease of wellbeing was reported higher in low education level groups (Thygesen et.al.,2021). A Study in Spain reports that during Covid19 pandemic, the most vulnerable populations were women, youths, people with basic or medium level of education, students and single or reduced number of children people (Gonzalos et al., 2020). In many cases, the pandemic highlighted the difference between social classes (Buheji et.al.,2020) and economic impact of the pandemic (Rodríguez Rey R et al., 2020).

Objectives of the study are presented as below:

- Assess the socio demographic and economic data of the respondents referring to the perceived financial expectancies and hopefulness when living in the pandemic
- Screen the psychological concern related to mental health and wellbeing while living in pandemics in association with levels of education
- Assess the pandemic individual social-functioning in terms of worry and social comfortability when meeting others in person

*Hypothesis:*

1. Ho: The perception of economic problems is not associated with levels of revenues  
H1: The perception of economic problems is associated with levels of revenues
2. Ho: The perception about the rise of psychological and mental health problems is not associated with levels of education  
H1: The perception about the rise of psychological and mental health problems is associated with levels of education
3. Ho: Perceptions of worry and comfortability from social contact is not associated with levels of education  
H1: Perceptions of worry and comfortability from social contact is associated with levels of education

## **Methods**

### **Research Design**

A cross-sectional research design was used for the study where Albanian adults completed an online questionnaire via Google form launched in different social online media channels. The period of data collection was from November 14<sup>th</sup> to November 29<sup>th</sup>. During this time of pandemic, restrictions were limited only in the curfew but all working places and universities were opened associated with a raise in infection rate, while living in the pandemic.

The sample consisted in Albanian adults starting from 18+. Data was collected anonymously in 217 respondents. Participants were given information about the nature of the survey and provided consent for the data collection.

Researchers reviewed and launched for the second time the questionnaire which had been used during the first lockdown in 2020. The questionnaire was self-administered and declarations ranged in a Likert Scale (ranging from 1-5: Strongly disagree = 1, to strongly agree = 5) referring to a high level of agreement of each item. The instrument was piloted in 30 respondents, to further adapt with the requirements of the study for this period of time. Data analysis was processed vis SPSS, where researchers compiled descriptive and crosstabulation data.

For the purpose of this paper, we extracted cardinal questions related to economy, mental health issues and social contacts during the pandemic. Below there is a presentation of some socio-demographic data of the respondents in this study.

Table 1. Socio-demographic and economic data of the respondents (N=217)

Table 1.1.1. Gender					
		Frequency	Percent	Valid Percent	CumulativePercent
Valid	Female	160	73.7	73.7	73.7
	Male	57	26.3	26.3	100.0
	Total	217	100.0	100.0	

Table 1.1.2 Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	116	53.5	53.5	53.5
	25-34	50	23.0	23.0	76.5
	35-44	30	13.8	13.8	90.3
	45-54	11	5.1	5.1	95.4
	55-64	7	3.2	3.2	98.6
	65-70	3	1.4	1.4	100.0
	Total	217	100.0	100.0	

Table 1.1.3 Educational level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school level	32	14.7	14.7	14.7
	Post-university level	50	23.0	23.0	37.8
	Basic level	3	1.4	1.4	39.2
	University level	132	60.8	60.8	100.0
	Total	217	100.0	100.0	

Table 1.1.4. Revenue' level (approximately)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30.000-40.000 lek	24	11.1	11.1	11.1
	40.100-50.000 lek	34	15.7	15.7	26.7
	50.100-60.000 lek	25	11.5	11.5	38.2
	60.100-95.000 lek	35	16.1	16.1	54.4
	95.000-120.000 lek	12	5.5	5.5	59.9
	Less than 30.000 lek	69	31.8	31.8	91.7
	over 120.000 lek	16	7.4	7.4	99.1
	Retired	2	.9	.9	100.0
	Total	217	100.0	100.0	

The first part of the survey included questions related to gender, age, educational level and personal revenues. Most of our respondents 73.7% are female and 26.3% are male. The majority of respondents are from 18-24 years old (53.5%); 23% are from 25-34 years old; 13.8% belong to the group age from 35-44; 5.1% are from 45-54 years old and 4.6% belong to the age group between 55-70 years old. Referring to the educational level, only a few participants representing 1.4% of the sample have a basic level of education. 14.7% have a high school level and the majority of the participants have a university (60.8%) and post university level (23%). From the sample, 31.8% of respondents have less than 30.000 lek per month (the minimum wage allowed in Albania from January 2022, it was not such during the data collection). 11.1% declare personal revenues in the revenue level between 30.000-40.000 lek. 11.5% represent individuals who have 50.100-60.000 lek/month; 16.1% of the sample represents 60100-95.000 revenue category and 7.4% declare to have more than 95.000 lek/month as personal revenue. Only a few respondents represent retired population (0.9%).

Other parts of the questionnaire include:

- Information referring to the economic situation expected in the upcoming 12 months, questions comparing this period of time with the last two years etc. aiming to screen the economic expectations and then hopefulness that respondents have to make savings in the upcoming months.
- Information regarding individuals' perception referring to the economic situation, power to resume life and perceptions about the presence of psychological and mental health problems in relationship with levels of education and grouped revenues.
- Information regarding perceptions of the social contact in person and its effect on people's relaxation, happiness and comfortability.

## Results

### 1. Perceived Financial Expectancies and Hope during the Pandemic

Respondents' financial situation and expectations for the upcoming 12 months were asked. The principal questions have been presented in the descriptive tables (1.1.5; 1.1.6; 1.1.7; 1.1.8) as attached, reporting that for the majority of the respondents (47.9%) report there is no difference regarding their family financial situation in the last 12 months (referring to the timeline between November 2020-November 2021). For 34.5% of the cases, the situation has become worse and for 18.9% of the cases the financial situation has improved. However, 38% of the cases report that the situation is expected to get worse. 35.9% of respondents are quite optimistic that the financial situation will improve and 25.3 remain without a distinctive answer. Albanian adults assert that in the coming 12 months they plan not to purchase furniture or electric supplies for the house in the majority of the cases (56% of the cases), only 24.4% report they will purchase these goods in the same level as before and 7.4% remain uncertain. 43.8% of our respondents declare they will not have the possibility to make savings in the upcoming 12 months. 41.9% of respondents declare it will be possible and 14.3 % are not certain about this. In order to further investigate this moment in terms of grouped revenues and levels of education, crosstabulation and chi-square tests have been utilized.

#### Association between Financial Situation and Level of Revenues

Aiming to see whether there is any association between the financial family situation in the upcoming months and the level of revenues show that the financial situation has been getting worse for the range between 40.000-60.000 lek/month in 47.5% of the cases, representing the most sensitive revenue group. For families under 40.000 lek, the situation has become worse in 37.8% of the cases. With the increase of the revenues, it is noticed that there is not a higher level of optimism, however they have a lower perception about the financial situation in the upcoming months. In conclusion, the financial situation is dependant from the level of revenues. People's perception about the change of the financial situation during the last 12 months is dependant from their level of revenues.

Table 2. Change of the financial situation over the last months and grouped revenues Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	34.366 <sup>a</sup>	15	.003
Likelihood Ratio	34.250	15	.003
Linear-by-Linear Association	4.754	1	.029
N of Valid Cases	212		

a. 13 cells (54.2%) have expected count less than 5. The minimum expected count is .53.

Perceptions about the likelihood of making savings in the upcoming 12 months is positive in the group of respondents having the highest level of revenues. Savings are dependent from the level of revenues.

Table 3. Likelihood to make savings in the upcoming 12 months and grouped revenues Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	34.170 <sup>a</sup>	12	.001
Likelihood Ratio	34.239	12	.001
N of Valid Cases	212		

a. 7 cells (35.0%) have expected count less than 5. The minimum expected count is 1.98.

Table 4. Perception about economic problems of today, in comparison with two years ago, with levels of education. Chi-Square tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.406 <sup>a</sup>	8	.906
Likelihood Ratio	3.246	8	.918
N of Valid Cases	206		

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .84.

In the meantime, referring to the question "economic problems perceived today in comparison with two years ago with levels of education" data shows that despite their levels of education, respondents report that this period of time reflects more economic problems in comparison with two years ago.

## 2. Psychological Wellbeing and Mental Health in Association with Education and Revenue Level

In the study, respondents were asked about their perception regarding more economic and mental health problems during this time, in comparison with two year ago. Respondents perceive in 77.2% of the cases that there are more economic problems, since this is evident in their family pockets. Regarding the presence of mental health problems, respondents are aware in 75.3% of the cases that there is a rise in mental health problems. Mental health problems have been reflected more during the Covid19 pandemic in comparison with two years ago, as reported from all respondents. Mental health problems are easily detected with the rise of the level of education. Referring to our example, respondents with a high school level of education, report 58.6% sensitivity to the concerns of mental health; university and post-university level respondents report in 75- 79.1% of the cases.

Table 5. Psychological wellbeing in association with levels of education Chi-Square tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.173 <sup>a</sup>	8	.253
Likelihood Ratio	9.593	8	.295
N of Valid Cases	207		

a. 6 cells (40.0%) have expected count less than 5. The minimum expected count is .98.

### Levels of Education and Perceptions about the Economic Situation

Chi square tests shows that the educational level is not an indicator showing people who perceive the power to successfully resume life as before the pandemic. Crosstabulation shows that the power perceived to resume life is seen in 25-30% of the cases maximum despite their level of education.

Table 6. Perceptions about this period of time, in comparison with two years ago, and resuming life Chi-Square tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.892 <sup>a</sup>	8	.941
Likelihood Ratio	2.947	8	.938
N of Valid Cases	203		

a. 3 cells (20.0%) have expected count less than 5. The minimum expected count is 1.52.

### Revenue Level and Perceptions about the Economic Situation

Economic problems have arisen during the pandemic, in 70- 80% of respondents. Economic problems are relevant to the level of personal revenues. We observe that for 78.6 % in people's revenues until 40.000 economic problems are quite evident. 80.7% of the revenue group from 40.000-60.000 consider the same pattern; 73.3% from 60.000-95.000 and 69.2% in the revenue group over 95.000 lek. Perceptions about the economic situation are associated with the revenue level.

Table 7 Revenue level and perceptions about the economic situation Chi-Square tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-Square	11.012 <sup>a</sup>	12	.528
Likelihood Ratio	12.407	12	.414
Linear-by-Linear Association	2.184	1	.139
N of Valid Cases	206		

a. 9 cells (45.0%) have expected count less than 5. The minimum expected count is .76.

### Mental Health Problems and Revenue Level

The presence of psychological and mental health issues is more sensitive (70% of the cases) to the grouped revenues until 40.000 lek. With the rise of the revenue level, there is a decrease of perception 42.9% is seen in 40.000-60.000 lek, and it gets lower by 24.9% individuals earning 60.000-95.000; 21% is the level of perception in the highest revenue level. As a conclusion, we might say that referring to our example Perceptions about problems related to psychological and mental health problems is strongly related to levels of revenues. The higher the revenue level, the lower the perception about the presence of these issues.

Table 8. Perception about risen psychological and mental problems with grouped revenues Chi-Square tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.475 <sup>a</sup>	12	.271
Likelihood Ratio	16.356	12	.175
Linear-by-Linear Association	2.748	1	.097
N of Valid Cases	207		

a. 9 cells (45.0%) have expected count less than 5. The minimum expected count is .95.

### Perceptions about Resuming Life and Revenue Level

Pessimism is reported in 41.2% of grouped revenues until 40.000 lek, representing the low level of revenues. By the increase of the level of revenues, however, there is not a more optimistic view about the power people perceive to resume life after the pandemic. Grouped revenues with higher level of revenues, do not perceive the situation as more optimistic neither.

Table 9. In your perception, in this period, in comparison with two years ago, you have the power to resume life (there is no difference, life is the same) Chi-Square tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.956 <sup>a</sup>	12	.372
Likelihood Ratio	12.082	12	.439
Linear-by-Linear Association	.005	1	.944
N of Valid Cases	203		

a. 5 cells (25.0%) have expected count less than 5. The minimum expected count is 1.35.

### 3. In Person Contact and Social Worry and Comfortability

Still, people report that meeting others, during the pandemic, does not particularly make them feel comfortable in 27% of the cases; in 27.5% they feel comfortable and 18% of the respondents do not provide a clear answer about this statement (18%). On the contrary in 21.4% of the cases it makes people feel worried; meanwhile in 40% of the cases, they report they do not feel worried. This question was made because during the lockdown people reported not to feel good because they were not meeting others. Social distance could have taught people that being physically distant from others, has their own benefits.

Respondents do not feel worried when meeting others while living in Pandemic, however they do not feel relaxed due to the contact neither (aprox.30% in post-university level). It is interesting how the post-university level is more opened to reporting their perceptions about feelings related to worry, relaxation and happiness in a clear way. This level remains the more sensitive about meeting people in person during the pandemic and the more enthusiastic too. During the pandemic, meeting others makes people happier only in minor cases and the happiness in meeting people in person during the pandemic is evident in 35 % of the cases only for the post-university level. 51.3% of the respondents do not have a clear approach of their own regarding social contacts referring they do not know. Only 18% of the cases refer that they do not feel happy when meeting others. Should this be a dilemma regarding social connections vulnerability or avoidance of the others, remains an issue to be detected with further analysis.

Table 10. During this period, I feel worried when I meet others Chi-Square tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.484 <sup>a</sup>	8	.176
Likelihood Ratio	11.832	8	.159
N of Valid Cases	205		

a. 3 cells (20.0%) have expected count less than 5. The minimum expected count is .96.

Table 11. During this period, when I meet others, I feel relaxed with levels of education Chi-Square tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.228 <sup>a</sup>	8	.323
Likelihood Ratio	12.392	8	.135
N of Valid Cases	200		

a. 4 cells (26.7%) have expected count less than 5. The minimum expected count is 1.26.

Table 12. During this period, when I meet others, I feel happy with Levels of education Chi-Square

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.903 <sup>a</sup>	8	.443
Likelihood Ratio	8.011	8	.432
N of Valid Cases	199		

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .81.

## Conclusions

This paper represents some findings of a survey study conducted during the Pandemic in Albania to a population of adults who with their own consent filled in an online anonymous survey launched via social channels. Aiming to make an assessment of the economic situation and perceptions, mental health issues and perceptions in association with revenue levels and educational levels and assess the comfortability and worry from social contacts while living in the pandemics, referring to our example, results of the study are as the following:

The financial situation is dependent on the level of revenues reflected in diverse perceptions people have on the situation of the pandemic. Respondents perceive there are more economic problems in comparison with two years ago, despite their level of education. Economic problems have arisen during the pandemic, in (70- 80%) of respondents and they are relevant to the level of personal revenues.

There is a distinctive perception regarding the arise of the mental health problems in comparison with two years ago, as referred from all respondents in the study. Sensitivity towards mental health problems is detected with the rise of the level of education. Referring to our example, respondents with a high school level of education, report 58.6% sensitivity to the concerns of mental health; university and post-university level respondents report in 75- 79.1% of the cases.

The grouped revenue is not an indicator showing people who have the power and hope to resume life as before the pandemic. Mental health concerns are more present in comparison with two years ago to all respondents (in approx. 70% of the cases). Mental health problems are not dependent from the level of revenues people have. People's capacities to resuming life just like before the pandemic has no relationship with personal revenues. Social contacts in person do not make people feel calmer or even comfortable in their contacts. Referring to our example, 30% of the people feel happier when meeting others.

## Future Research and Limitations of the Study

The study was conducted online, even though we cannot generalize the results, they represent a trend. The online survey remains the safest data collection technique during the pandemic times however. The sample is not very large and there is a low representation of retirees and old adults, and a major representation of women respondents, hence researchers tried to treat and discuss results with attention. Considering the pandemic changes in our life over the months, the emergence of different viruses and its implication; the insecurities risen because of other huge events in Europe challenging psychological wellbeing, connections and economy, authors of this paper consider important the longitudinal prospective research in this area of study.

## Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

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## **Digital Transformation in the MICE Industry (Powered by Zoho Backstage)**

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**Abstract:** Business challenges happen to operating MICE events nowadays due to the pandemics and the globalization. The management of event planner company needs to improve the performance of the organization by implementing innovations and technologies to survive the business during this situation. ZOHO Backstage is one of the options that event business can apply to operate a digital event with many features related. The objectives of this study are to study the features of ZOHO Backstage, and to provide the knowledge and technological awareness. This web-based event application features are including registration, event stakeholder management (event planning team members, speakers, attendees, sponsorships, and exhibitors), marketing tools, and data analytics. The finding of this study showed that participants who attended the workshop were agree that ZOHO Backstage is one option to use for the MICE event business related to the features together with its characteristics in security and privacy, application performance, and ease of implementation due to the advantages of cloud-based system. Practically the finding of this study will also help event planning company and related organization to improve the knowledge and skills in event application, and able to support the business in the future. This application will be one of the options for them to have competitive advantages for MICE industry.

**Keywords:** MICE application, Web-based application, ZOHO backstage, MICE industry

### **Introduction**

Challenges in business operation are spreading around the globe. Many companies need to make change during unstable situation such as shutting the offices and requiring most of employees to work remotely at home in the situation of covid 19 pandemic. Business travelers did not have a chance to travel across the boundary to meet the clients. The participants can not join the professional conference. Exhibitors were not able to show their products and business showcases in the trade fair. During this crisis, event professionals were freezing and trying to find the options to do the business. Digital transformation is helping industries to improve the way they do businesses. Opportunities and challenges during this information era, transformation and upgrading in technologies related are urgency for the MICE industry.

### **Implementing Technology to MICE Industry**

MICE industry is investing in the use of technology, from applications to various channels, in organizing and implementing their events. Right event management tools can empower organizers to push boundaries in delivering events and boost customer experience. To resume the business, virtual event became a great deal for MICE industry. To operate the business during the pandemic and strengthen the technological platform in the business, Thailand Convention and Exhibition Bureau (TCEB) launched the Virtual Meeting Space (VMS) to support organizers to stage their meetings via webinar and hold exhibitions on O2O (Offline to Online) platform. Furthermore, TCEB has set up the TCEB COVID-19 Center and portal to provide real-time and up-to-

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date information for both domestic and international target groups. (Corporate Image and Communication Department & Thailand Convention and Exhibition Bureau, 2020).

Trend in MICE industry is not only focusing on technological implementation and sustainable event management, but also the perspective in the concept of Personalization (One to One Marketing). This strategy implements from the stage of registration to engage attendees which match to their preferences. Refer to the implementation of "Attendee Journey Mapping" which is the personalization concept in Reed Exhibition (Professional Exhibition Organization), this strategy can fulfil attendees and participants needs by understanding target, collecting related data, and merge related data to the target. The other concept to adjust attendees' experiences is Festivalization which focusing on the identity to make memorable experiences that need to match with personalization concept. (Thailand Convention and Exhibition Bureau, 2020). Technology transformation can be the strategy to improve event experiences through appropriate technology by using the web-based application to merge data from various channels to promote the business to attendees in the future. This innovation will operate as well as manage MICE business in the global trend.

### **Digital Event**

Digital Event has its specific elements that need to focus on the knowledge (content), networking and community engagement (by using the interactive components), marketplace experience (commerce and tradeshow that most closely to a face-to-face exhibition). (International Association of Exhibitions and Events, 2021) Event planner need to keep in mind that who the attendees are to create an inclusive experience fosters belonging for all. These features in each element such as registration, dealing with speakers, streaming, voting, chat and meeting function, matchmarking must be concerned to developing the application.

Today, employees as well as customers expect and demand to be able to use a web-based application due to the accessibility and work sharing in terms of obtaining information and performing transactions anywhere at any time. These make application service providers need to design and develop web-based application, mobile application, information systems based on the advantages of web technology in this era.

Zoho, trusted by over 75 million users globally such as Philips, Daimler, and Hyatt, is one of the unique and powerful suites of application running the business. This cloud-based application is the trend for companies to shift more of their information technology infrastructures especially storage and processing. Startups and small companies with limited IT resources and budgets will find public cloud services especially helpful. (Laudon & Laudon, 2022). Zoho provide business application solutions covering sales and marketing, customer services, finance and accounting, human resources, office automations, business intelligence and analytics, and related information technology infrastructures.

Zoho Backstage is an event management software that empowers event organizers to plan and run conferences, meetups, and product launches with greater efficiency and impact. (Zoho Corporation Private Limited, 2022). This web-based application will help MICE event professionals to operate and create events especially for online, and hybrid event. Application features can be shown in the event step starting from creating an event by adding up its details, agendas, sessions, team members, sponsorship, exhibitors. Then designing the microsite which will be a tool to engage the attendees, and related event stakeholders. Microsite does not only provide information related to the event, but also assists prospects to the registration platform that link to the automated payment systems. In terms of sales and marketing, they can use this site to promote event by sharing on social media, banner ads, scheduling email communication and advertising with affiliate link. (Zoho Corporation Private Limited, 2022). During the event, event organizers can implement this application by its own live broadcasting platform to live broadcast the sessions, run presentations, share handout related to webinar, interact with attendees and participants. Managing the event, attendee check-in monitor, ticket sold, progress tracker, integrating to Zoho SalesIQ.

One of the success stories in implementing Zoho Backstage to MICE event business is the LeBros (Agency in Vietnam). This application makes business convenient, advance, and smart. Mr. Quốc Vinh, Group Chairman and CEO, mentioned that Backstage engage their attendees and keep them updated on the latest news by discussion forums and announcements. It enabled audiences to connect virtually with the speakers in real time. They were now able to ask questions and see them answered right away. Backstage also helped them create a tailor-made event website which is the microsite that mentioned above. This website is not only served as a marketing vehicle and avenue to sell tickets, but also engaged speakers and managed sessions to help draw a bigger audience. (Zoho Corporation Private Limited, 2022).

## **Digital Transformation in the MICE Industry Workshop**

Refer to the information mentioned above, providing the workshop was an alternative to demonstrate the characteristics and performance of the application. Zoho Backstage was used as an application to conduct this workshop. The arrangement for program session is illustrated in Table 1. The selected workshop's speakers were from the application service provider and the lecturer in technology and innovation in MICE industry. They have been the expertise with knowledge, skills, and experiences in business process implementation and its product.

Table 1. Program agenda

Date/Time	Topic Session	Speakers
May 7 <sup>th</sup> , 2022		
09.30-10.00	Opening and Introduction	Ekkaphot Chudet (Marketing Consultant)
10.00-11.00	Digital transformation in the MICE industry (Powered by Zoho Backstage)	Khoo Chia Ching (Regional Marketing Manager)
11.00-11.45	Equipping Event Organizers with Zoho Backstage	Chelsy Nepomuceno (Marketing Consultant)
13.00-15.30	Backstage Workshop	Krishna Kumar (Regional Sales Manager), and Prathik Bathija (Product Marketing Manager)
May 8 <sup>th</sup> , 2022		
09.00-12.00	Workshop Session: BackStage for Real Events	Ekkaphot Chudet (Marketing Consultant)
13.00-15.00	Review & Evaluation	Passakorn Chumpoonta (Technology in MICE Instructor)

## **Implementing Information System in Business**

Information technology implementation in the business often remains a persistent and troubling gap between the inherent value of the technology now a day. This challenge should be closed by developing the applications that closed to the nature of business, and its ability to put into work effectively. To select the application in the firm, the management as a change maker need to concern for user satisfaction which related to business result. The factors that make users satisfied are data authenticity, reliability, security, reactivity, processing time, integrity, and system flexibility. These factors can be grouped to usefulness, security, responsiveness, and agility. (Wen & Kim, 2021). The selecting criteria is not focusing only users, but also functional features, technical (information technology infrastructure), quality (capability of managing information at different levels of interactions) and cost. (Cricelli et. al., 2019) The application with these characteristics mentioned will be the option for business to invest and implement in the organization to gain the competitive advantages.

## **Method**

### **Research Objective**

The objectives of this research are (1) to study the features of ZOHIO Backstage that can be implement to MICE industry, and (2) to provide the knowledge and technological awareness by using web based event application for MICE industry.

### **Research Methodology**

This study focuses on reviewing the features of Zoho Backstage that can implement to MICE industry. Data use in this research is not only retrieving the information related, but also collecting from questionnaire, pre-test and post-test of the participants. 32 participants in this workshop included professional event organizers, instructors, and students in the major field of MICE industry. Online workshop "Digital Transformation in the MICE Industry (Powered by Zoho Backstage)" took place on May 7<sup>th</sup> - 8<sup>th</sup>, 2022. Data analysis in comparison of learning achievement from the tests was using statistical computation of averages and standard deviations. So that t-tests can be conducted on testing of an assumption applicable to a population in terms of degrees of freedom to determine the statistical significance.

Furthermore, performance and features of application as well as workshop satisfaction were using the descriptive statistics from questionnaires after the workshop. Suggestions were from the interview of the different types of participants.

## Results and Discussion

Participants of this workshop were 17 students (53.10%), 7 instructors and educational support staffs (21.90%), and 8 event professional (25.00%), totally 32 participants. The results are demonstrated in 3 parts: learning achievement (from pre-test and post-test), application capacity and satisfaction (from questionnaires and interview). Details are illustrated as following.

### Learning Achievement

Learning achievement of this workshop was concerned in knowledge which can be divided into 3 parts: digital transformation in MICE industry (score of 3), equipping event organizer with Backstage (score of 2), and Zoho Backstage workshop (score of 5). T-test analysis in each pre-test and post-test scores is illustrated as table 2. The result shows that participants achieved the knowledge learned at statistically significant (0.00).

Table 2. t-test analysis comparison of pre-test and post-test score.

	Pre-test		Post-test		t	p	Mean difference	SE difference
	Mean	SD	Mean	SD				
Part I: Digital Transformation in MICE Industry	0.75	0.62	2.34	0.48	11.9	<0.001	1.59	0.134
Part II: Equipping event organizer with Backstage	0.44	0.50	1.78	0.42	12.6	<0.001	1.34	0.106
Part III: Zoho Backstage workshop	1.56	0.88	4.69	0.47	18.8	<0.001	3.13	0.166

This result shows that participants had the knowledge for the concept of digital transformation and how Zoho Backstage support them to operate the digital event or virtual event. Furthermore, participants had a chance to practice by using the case study to generate digital event. The workshop did not only make all participants understand application features, but also technological skills in information technology together with digital web-based event application.

### Application Capacity

Participants rated the scores for Zoho Backstage in each capacity. They agreed that this application has highly effective capacity in all features related, mostly in security and privacy, application performance, and easy to implementation. Details are illustrated as Table 3.

Table 3. Score rating for Zoho Backstage capability

Application Capacity	Mean	SD	Result
1) Relevant to event business	4.59	0.62	Very high
2) Covering tasks in event business	4.22	0.79	High
3) Supporting to event business process	4.50	0.71	Very high
4) User interface design	4.47	0.76	High
5) Application performance	4.72	0.63	Very high
6) Application responsiveness	4.41	0.91	High
7) Compatibility to other systems	4.19	0.93	High
8) Ease of implementation	4.66	0.65	Very high
9) Ease of maintenance	4.28	0.81	High
10) Security and privacy	4.78	0.55	Very high

Regarding to the result illustrated, the highest rank in system capacity was in the top 3 which were security and privacy, application performance, and easy to implementation. These are the characteristics of cloud-based application. Cloud computing environments provide advantages in the form of security, administration of

resources, and its execution. Task scheduling in cloud systems is resource management which aims to enhance execution of assignments and usage of resources in cloud systems. (Sharma & Rashid, 2020)

“It is easy to use, just only drag and drop” was the comment from students in technology and innovation in MICE course who attend this workshop. It also has features to create the conference due to the registration module and web casting and documents sharing regarding to the lesson learn. In the view of expertise and event professional, this application is user friendly and can assist team to monitor the attendees’ registration through the revenue management. During executing the event, the web streaming can run smoothly from both the wireless network and mobile hotspot sharing.

Participants of this workshop had their own account to create the event with assigned case study. Furthermore, they had another one-time event for each account for free of charge. Feedbacks from users were similar to the findings that mention above. The additional suggestions were speakers and the sponsorship management. In speaker management module, it can help event organizer to contact speaker automatically, update speaker profile, store speaker information to the centralized database, and queue the speaker during the event. In term of sponsorship management, this application could make the sponsorship engagement. It allows event professional team to classify the sponsors, provide the appropriate package, and manage their requests. Due to the database platform, the management can summarize and allocate sponsorship in the highest satisfaction level. This snapshot of current and past events and their management were the archiving of information which can be time consuming to operate the next future event. (O’Toole, 2022).

In addition to the information in Table 3 and interviewing from the related parties, participants suggested that this application contains the features which relevant to event business and support tasks in MICE event operating. The capability was created nearly every function of event management such as registration, polling and real-time feedback surveys, ticketing and access control, marketing and advertising of events and sub events. These are many benefits for event professional. Exhibitors can track the lead retrieval through the virtual exhibition booths. Attendees expected the availability of speedy, useful, and navigate application while at the event due to the environmentally friendly of the application. (Ball et. al., 2019).

Utilising online data from the system gains deeper understanding towards event attendees, sponsors, and related stakeholders. Apply data science concept can offer valuable insights. (Celuch, 2021). For instance, analysis of data stored in the system can not only predict trends and provide recommendations to event participants, it also uncovers the right target audience for organisers to streamline management, optimise networking, and personalise experiences. They could obtain the benefits of data analysis from event stakeholder management module including event planning team members, speakers, attendees, sponsorships, and exhibitors.

Due to the characteristics for the speed to production and reduced costs, environmental issues and revenue generation, the management can have the competitive advantages through these features and characteristics. They will analyze data to track each attendee’s journey and set strategy for each target. Event planners have tools and technology to assist them to work smoothly and serve attendees with highest satisfaction.

### **Workshop Satisfaction**

Satisfaction rating are highly score in all items. Participants were satisfying most in knowledge transferring, language using, and understanding the content from speakers, follow by the readiness of internet signal, and content related. Details are illustrated as Table 4.

Table 4. Satisfaction

Satisfaction	Mean	SD	Result
1) Knowledge transferring, language using, and understanding	4.72	0.45	Very high
2) Relevant and appropriate content	4.41	0.62	High
3) Answering questions from trainer	4.25	0.76	High
4) Technical readiness: Visual signal	4.22	0.56	High
5) Technical readiness: Sound signal	4.34	0.75	High
6) Technical readiness: Internet signal	4.47	0.71	High
7) Public relations of the workshop	4.16	0.92	High
8) Knowledge utilization	4.34	0.87	High

Participants satisfied the content more when comparing with technical readiness and the operating for this workshop. They had satisfied in knowledge that they obtain. Knowledge transferring and language using from speakers made participants understanding. They also had aware in the technological issues during digitalized era from expertise. The appropriate speaker management from application in speaker management module did not only matched the expertise to the session, but also speaker information providing. Selected speakers were professional in each topic session.

The content was relevant and appropriate for participants. Content provided in this workshop was separated to the session. Beginning with providing information followed by step by step demonstrating as well as practicing from the case study. Learning by doing is the best way to make learners clearly understand. This method was the advantages for them and could make them keep in touch with the application. Content design was the reason why they can utilize their knowledge and skills to apply in their daily life especially in event operation and MICE business.

The lowest satisfaction was public relation for this workshop. The information was announced 2 weeks before launching through Facebook (Hospitality Technology Innovation SUT), curriculum website, and the Line application group. This issue needs to be improved when operating workshops or trainings in the future.

## **Conclusion**

Zoho Backstage is web-based application which using the cloud-based system for event business. It has the features related to the event operation and management. Beginning with event planning, event planner can create the event by adding event and related stakeholders' information to the system. Next step is generating revenue by providing microsite to promote event and the online registration. During the event execution, live steaming and virtual exhibition booths fulfil the virtual event nearly the on-site event. Finally, event professionals can evaluate the event by surveys and all information tracking provided by this application. This event web-based application can be a choice for MICE professionals to implement virtual event.

To make sure that Zoho Backstage has features required for MICE professional, providing application capacity information to target group is needed. Workshop session launched for the participants for students who study MICE technology, instructors, and MICE professional can be the suitable solution. They knew all features and practiced during the workshop. Since they familiarized with it, they suggested that this application has good performance and security cause of characteristic in cloud-based system. In addition, Zoho Backstage's features cover tasks and activities in MICE event operation and management.

Participants had high level of satisfaction especially in knowledge gained from expertise. Speaker management can be a tool to use when operating event for high satisfaction. The content from this workshop can be applied for MICE industry. However, public relation and event executing should be improved for future events.

## **Recommendations**

This study was focused about features and capability of Zoho Backstage for MICE industry. There are another applications and technologies sub-branched to study more about their features and capabilities. Future studies should encourage more participants from various part which related to MICE industry to join the workshop. More number of participants will have more suggestions and ideas.

## **Scientific Ethics Declaration**

The author declares that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the author.

## **Acknowledgements or Notes**

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# **Real Earning Management: Implication of Audit Committee and Audit Quality Big 4**

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**Abstract:** The audit quality (AQ) is investigated as a moderator between audit committee (AC) and real earnings management (REM). The study utilized the multiple regression analytical technique approach with 2,226 firm-year observations of non-financial firms listed on the Bursa Malaysia over a six-year period from 2013 to 2018. The results depict that Audit Committee Independence (ACID), Audit Committee (ACFEX), Audit Committee meeting (ACMEET) and Audit Committee Size (ACSIZE) do not have any significant impact on real earnings management (REM). Furthermore, findings also point to the fact that the Audit Committee's Audit Quality (AQ) causes a lesser impact on the practices of earnings management (EM) in actual activities. Apart from that, the results also portray the importance of audit quality (AQ) and audit committee (AC) in curtailing real earnings management (REM). Based on the findings, this study contributes to better understanding of the audit committee (AC) and earnings management (EM) practices among Malaysian listed firms. The results suggest that firms should improve the effectiveness of audit committees (AC) to enhance their financial reporting quality (FRQ).

**Keywords:** Audit committee effectiveness, Audit quality, Real earnings management

## **Introduction**

In order to run a business in an efficient and well-oiled manner, it might be vital to set up a few committees to aid the Board of Directors in running their various responsibilities. This aspect is in line with what is stipulated by the Malaysia Code of Corporate Governance (MCCG 2012) which requires all companies which are publicly listed to clarify the function of the board in giving leadership skills with the aim of upgrading the efficacy of the board. This means that the board has the liberty of assigning specific roles to the committees to run in accordance with the defined terms of references. Apart from the audit committee (AC) which has been given the mandate from 1993 onwards, the Malaysia Code of Corporate Governance (MCCG) 2012 also encourages the setting up of other committees such as a remuneration committee and a nomination committee whose functions are to render assistance to the board.

In addition, the annual financial report must be submitted according to schedule and made transparent apart from presenting finance-related information in an objective manner and without partiality. The said financial report is the main medium which reveals the mechanisms that run a company and it is vital when making decisions about investments. It must also play its crucial part as a guideline for parties who are keen to make investments by laying out in detail the workings of a firm and how its resources are managed. The management of behaviour is therefore earnings management (EM). According to Alzoubi (2012) the benefit of financial reporting can also be advantageous to non-capital providers.

## **Literature Review**

### **Audit Quality**

The correlation between the dependent and the independent variables is dependent on the moderating variables. (Bennet, 2000), frazier, Tix & Barron, 2004). According to Barron and Kenny (1986), moderator variable is described as one that determines the direction and or tenacity of the correlation between predictor variables and a criterion variable. In addition, studies have also revealed that moderating variables can play the role of

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independent variables. (Baron & Kenny, 1986; Bennet, 2000). Hence it is clear that moderating variable play vital roles in enhancing or transforming the correlation between the two variables. However, Baron and Kenny (1986) in portraying the moderator variable, emphasized that moderator variables are usually evident in the case of a brittle or unstable association between dependent and independent variables. Bennet (2000) and Frazier et al (2004) strongly reiterated that both theory and conceptual framework of research are able to portray whether a certain variable can be considered as moderator variable or otherwise. Therefore, revealing a moderating variable falls back on the theory utilized in the research as well as the related framework of the said study. In this study in question, the framework is dependent on a similar theory whereby resource dependence theory and agency theory are the fundamental theories.

#### **Audit Quality Big 4**

Numerous studies have utilized the reputation of auditors to evaluate AQ and have reported that the appointment of auditors from reputable companies is made to solve problems faced by agencies. (Fan & Wong, 2005; Lennox, 2005). It is also stated that auditors from Big 4 firms have higher incentives to produce higher quality EQ in contrast with auditors from other firms. (Gul, et al., 2006).

In Malaysia, according to Abdul Wahab, Zain, James & Haron (2009), Big 4 auditors control up to 70% of the audit market. The size of the audit company is also associated with accruals which occur abnormally. Francis and Wong (2008) utilized across country analysis and portrayed a positive correlation between country level investor protection and EQ. They found out that a nation with stronger protection for investors enjoyed higher EQ. To be more precise, firms employing Big 4 auditors contain lesser abnormal accruals. Where the likelihood of loss is higher, the investor protection atmosphere is more robust. In contrast, companies that employ ordinary auditors show abnormal accruals the likelihood of reporting loss is not affected by the discrepancies in investors safeguarding systems.

#### **Audit Committee**

AC as the communication mediator between BOD and external auditors' functions as a connector to cut down asymmetry of information between these two groups of people. Apart from that, AC also aids supervision procedures and allocates more liberty to the auditors away from the control of the management. In this context, Marx (2009), describes AC as a branch committee of the BOD which comprises independents members who are non-executives and these people are fully equipped with financial expertise and other relevant capabilities. The AC is in charge of collaborating with everyone in the BOD in fulfilling their monetary reporting, control and audit-related job responsibilities via scheduled meetings.

Based on Part C of the 2012 MCGG, the evaluation of the ACE is made depending on its ability to fulfill all the requirements of the Bursa Malaysia. Hunton et al (2011) have stated that the AC is a well-oiled monitoring mechanism that cuts down expenditure for agencies and enhances the earnings quality. In support of this finding, Razak and Muhamad (2015), affirmed that the oversight function of the AC is crucial to ensure an authentic, and unbiased view of financial statements and efficient internal controls that minimizes asymmetry in information. This, in turn leads to controlling EM. Therefore, the role of AC far surpasses regular financial auditing because it enhances the confidence level of the public towards the integrity and objectivity of financial reporting through the upgrading of the standard of monitoring and reducing the information imbalance.

#### **Quality of Financial Reporting (FRQ)**

A useful way of conveying monetary information to potential users is through the financial reports. As there is frequent imbalance of information given and agency disputes between the interests of managers and external consumers, auditors have been tasked with the responsibility of auditing the financial reports. This is viable choice which is made available to carry out monitoring which will boost the financial reporting and in turn enhance the confidence level of investors towards the performance of a firm and traded securities that portray the firm's reputation. (Ismail et al, 2010; Johl, Kaur & Cooper, 2015).

#### **Real Earning Management (REM)**

From one angle, many differences can be seen between REM and AEM. First and foremost, according to Cohen & Zarowin, 2010; Hastuti et al, 2016; Roychowdhury, 2006, cash flows are directedly impacted by REM. Hence, REM has a non-advantageous element as there are consequences related to its direct cash flow application. It is important to note that the direction of REM procedures will not be similar to cash management. Utilizing real activities that increases income can have a negative or positive effect on Cash Flow from Operations (CF0) or the effect may not be clear. (Gunny, 2010). In addition, manipulating real activities must be carried out during a fiscal period of in the early part of the financial year in order to achieve earnings targeted. On the other hand, decisions related to AEM take place by transforming methods used in accounting and financial statement estimates. (Zang, 2012)

## **Methodology/Materials**

### **Development of Theoretical Framework**

Many researches carried out have shown the direct association between the variables of Audit Committee (AC) and earnings management (EM). In accordance with the framework, the model will be utilized the examine the extent of moderation audit quality has upon the association between audit committee and earnings management upon real earnings management. The theoretical framework of this research is based upon the same type of work. As firm size and firm leverage have been proven to have an effect upon earnings management in past studies, this study will also emulate it to control these two aspects related to firm which are firm size and firm leverage (Gao, et al., 2015, Roychowdhury, 2006; Wang; 2006). In Figure 1, as depicted below, the theoretical outline and the formulation of the hypothesis of the impact of audit quality on financial reporting quality. The current research is in accordance with the conditions stipulated by Baron and Kenny (1986) so that path analysis can be moderated. As an example, certain requirements must be fulfilled before assertions can be made that mediation does take place to establish moderation, as suggested by Baron and Kenny (1986).

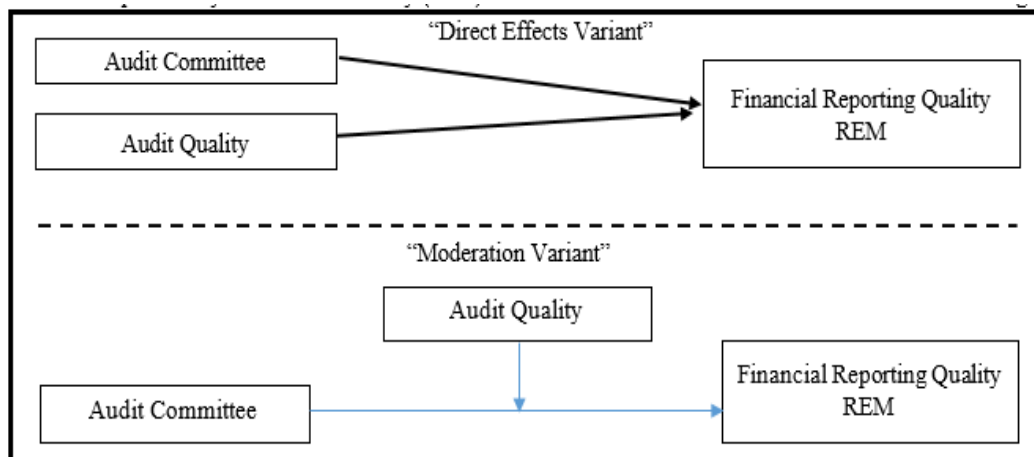


Figure 1. Theoretical research framework of the study

### **The Quality of Financial Reporting (FRQ)**

There are two main primary components of financial reporting quality and the current study places attention upon earnings quality as part of financial reporting quality apart from third-party evaluation or via stakeholder perception survey. The current research widens the assessment of real earnings management just as how previous researches put forward suggestions and enhanced this assessment.

### **Data Collection Procedures**

These are the procedures utilized in gathering data for this study. First and foremost, a collection was made of the comprehensive list of all the trading firms which were constantly quoted on the Bursa Malaysia board during the period of 2013 until 2018. The second step was to pinpoint firms that published their complete financial statements during the same period of 2013 and 2018. The 2012 financial statements were utilized to aggregate the surplus or difference in comparison with the earlier year to calculate earnings management variable. Thirdly,

firms which lacked complete data regarding variables necessary for this research was identified. Once all the required data were accumulated for the variables related to this research including dependent variable, independent variable and moderating variables, a total of 814 firms with complete data for all the corresponding variables needed were found. Lastly, 2,226 observations accumulated for six years from 2013 to 2018 were analysed.

### **Correlation of Audit Committee with Financial Reporting Quality (Earnings Management)**

#### *Audit Committee Independence (ACIND)*

Uzun, Szewczyk and Varma (2004) are in favour of an elusive perspective in situations where smoothing earning of income is seen as an unacceptable deed in reporting earnings. They are of the view that increasing the number of independent directors in the AC will cut down the financial fraud probability via income smoothing of earning. This aspect was reiterated by Ismail and Kamarudin (2017) who found a negative but significant correlation between AC independence and income smoothing of earning that occurred in a listed Malaysian firm. Fuad (2016) investigated the impact of AC characteristic upon real EM in an Indonesian listed firm and his finding showed that AC independence positively and significantly affected correlation with real EM. Elsewhere, another study by Setiany et al (2017) examined AC characteristics and voluntary monetary disclosure in Indonesia. Their findings too showed that independent AC has a positive and significant effect upon such voluntary financial disclosure. Also in 2017, in Kenya, Jerubet et al investigated the AC traits and FRQ of a listed company. They reported a negative but significant correlation between AC independence and FRQ. Thus, Hypothesis 1 (H1) that can be derived from these data is that there is a negative correlation between real earnings management (REM) and ACIND in the firms listed in Malaysia.

#### *Audit Committee Financial Accounting Expert (ACFEX)*

According to the resource dependence theory, AC function is to produce resources which include knowhow and experience that will enable a company to gain competitive edge, in particular on the FRQ. AC expertise is a crucial aspect of governance devices that serves as a catalyst to facilitate the progress of a company in reaching its strategic goals (Cohen et al, 2007; Pfeffer, 1972). Adequate monitoring is anticipated to reduce agency problem stemming from opportunistic management behaviour.

One vital part of professionalism which is much needed in an AC is the presence of a monetary accounting professional. Previous studies on AC financial accounting experts has proven that the more financial experts are present on the AC, the better the monitoring which can be carried out on managers' discretionary activities and thereby FRQ of firms can be enhanced. As an example, Agarwal and Chadha (2005) stated that the presence of financial accounting professionals on the AC minimize the tendency of earnings restatement. Meanwhile, Badolato et al (2014), Baxter and Cotter and Ittonen et al (2016) have suggested that the minimum size of accounting experts present on the AC has an impact on the EM levels of firms and thereby enhance the FRQ of the firms. Dhaliwal et al (2010) also contended that financial expertise present on the AC enhanced the FRQ. From the abovementioned information Hypothesis 2 (H2) that is derived is that there is a positive correlation between financial expertise of the audit committee (ACFEX) and real earnings management (REM) in the firms listed in Malaysia.

#### *Audit Committee Meetings (ACMEET)*

According to Katmon and Farooque (2015), AC meetings show a positively significant correlation with EM and this shows the more frequently AC hold meetings, the higher the EM would be. Ika and Ghazali (2012) examined ACE and the timeliness factor in financial reporting in Indonesia. Their findings revealed that ACE which encompasses frequency of AC meetings reduces the lead time in audit reporting. Elsewhere, Shankaraiah and Amiri (2017) investigated AC quality as well as FRQ in India and their study showed that AC meetings have a significantly negative influence upon FRQ proxy DA. This fact is confirmed by Kolai and Grassa (2017) in their investigations about whether governance mechanism had an impact on the EM of Islamic banks. Their findings showed that AC meetings do exude a fundamental effect, although it is negative, on discretionary loan loss provision. Based on this information Hypothesis 3 (H3) is that there exists a positive correlation between ACMEET and real earnings management (REM) in the firms listed in Malaysia.

### *Audit Committee Size (ACSIZE)*

Under ACSIZE, it is anticipated that the bigger the AC, the more resourceful it is in checking and controlling earnings manipulations and enhancing a firm's FRQ. Current studies have held up this contention and they have obtained evidence that there exists a negative significant correlation between ACSIZE and DA, in particular as reported by Azzoz and Khamees (2016) and Misha and Malhotra (2016). This proves the findings obtained by Liu and Sun (2010) who examined director tenure function upon the efficacy of independent AC. Their findings reveals that ACSIZE impacts correlation with EM in a negative significant way. This suggests that an AC of substantial size efficiently reduces EM. Al-Shaer, Salama and Toms (2017) also reported that ACSIZE impacts disclosure quality in the United Kingdom by portraying a significant negative relationship. In addition, Setany et al (2017) investigated the attributes of AC and voluntary monetary disclosure in Indonesia and their findings showed that ACSIZE does have a positively significant impact on voluntary monetary disclosure of firms. The abovementioned information has led to Hypothesis 4 (H4) that there is a negative correlation between ACSIZE and real earnings management (REM) in Malaysian listed firms.

## **The Correlation of Audit Quality on Audit Committee and Financial Reporting Quality**

### *Audit Quality Big 4*

#### *The Impact of Audit Quality Big 4 on Audit Committee Independence (ACIND) as well as Financial Reporting Quality (FRQ)*

Several researches portray the type of auditor as an explanatory aspect in financial instrument disclosure. According to Jensen and Mackling (1976), the role of an audit firm is an effective corporate governance mechanism to cut down agency costs and also to offer oversight by checking and controlling managers' opportunistic behaviour. Furthermore, they state that bigger and more well-renowned international auditing companies encourage companies to reveal more information concerning financial instrument risk in order to uphold the reputation of such auditing firms and also to circumvent additional or unnecessary reputation charges. (Chalmers & Godfrey, 2004). In connection with this, agency theory states that auditing firms and their clients gain advantages from such disclosure. Furthermore, the selection of an external auditor plays a role to upgrade company prestige. The selection is a clear signal to investors that they will be receiving annual reports of sterling quality. In turn, audit firms will take advantage of this greater disclosure to show outsiders that their auditing is of better quality than other auditing firms. (DeAngelo, 1981) Financial instrument disclosure differs according to the industry even though both banking and insurance sectors come under the financial sub-sector. Thus Hypothesis 5 (H5) is that Audit Quality Big 4 exudes a positive impact on Audit Committee Independence and Financial Reporting Quality (FRQ) Proxy Real Earning Management (REM)

#### *The Impact Audit Quality Big 4 on Audit Committee Financial Accounting Expert (ACFEX) and Financial Reporting Quality (FRQ)*

This has validated the finding of Chen and Zhou (2007) who revealed that proportion of financial expertise in audit committee increases the chance of selecting Big 4 auditors. In another development, it has been argued that legal experts serve as monitors rather than mere signal to financial reporting quality. This is because, Baxter and Cotter (2009) have affirmed that legal expertise on the company's audit committee significantly reduce the practice of earnings management and thus enhance audit quality. Therefore, their legal knowledge allows them to be more familiar with litigation threats relating to financial reporting issue. As a result, Hypothesis 6 (H6) is that there Audit Quality Big 4 has a positive impact on Audit Committee Financial Accounting Expert (ACFEX) and Financial Reporting Quality (FRQ) Proxy Real Earning Management (REM).

#### *The Impact of Audit Quality Big 4 upon Audit Committee Meeting (ACMEET) and Financial Reporting Quality (FRQ)*

This correlation is in line with the assumption that an Audit Committee that holds frequent meetings have a more probable likelihood of procuring high audit quality in their quest for greater assurance In contrast, Sharma et al. (2009) found an inverse relationship between audit committee meetings and Big 4 auditors. Their finding supports the substitution hypothesis of audit quality, which suggests that effective governance devices can serve as substitutes to external monitoring provided. Based on the aforesaid contention, Hypothesis 7 (H7) is that

Audit Quality Big 4 positively impacts Audit Committee Meeting (ACMEET) and Financial Reporting Quality (FRQ) Proxy Real Earning Management (REM)

*The Impact of Audit Quality Big on the size of the Audit Committee (ACSIZE) and Financial Reporting Quality (FRQ)*

According to Jerry, M & Saidu A.S. (2015) the role of FRQ is vital in the decision making process, in particular to investor groups who fully depend on the expertise of an external auditor in auditing their financial statements. Their findings of this research revealed that ACSIZE plays a pivotal role in reaching high FRQ as investigations show that a substantial number of companies under review utilized the services of Big 4 audit firms in carrying out audit of their financial statement compared with non Big 4 firms and this has shown a positive impact on the FRQ. In line with the abovementioned argument, Hypothesis 8 (H8) is that Audit Quality Big 4 positively impacts Audit Committee size (ACSIZE) and Financial Reporting Quality (FRQ) Proxy Real Earning Management (REM)

**Results and Discussion**

Conversely, in terms of Financial Reporting Quality proxy REM, this research recommends that companies that comprise dedicated investors cut down the imbalance of information, reduce agency expenses and enhance the quality of information while transient investors are more concerned about making short-term profits and this motivates managers to tamper with earnings. Using the regression analysis, this study discovered both positive and negative correlation between Audit Quality on Audit Committee and Financial Reporting Quality proxy REM.

**t Statistic and (p-value) Testing**

Table 1 depicts regression outcomes related to the association between audit committee (AC) and financial reporting quality (FRQ) by utilizing a method called the panel data fixed effect approach through SPSS and it provides the answers to the first four Hypotheses (H1, H2, H3 and H4)

Equation:

$$REM = \beta_0 + \beta_1 ACIND + \beta_2 ACFEX + \beta_3 ACMEET + \beta_4 ACSIZE + \beta_5 LEV + \beta_6 FSIZE + e$$

Table 1. Testing of t statistic

Hypothesis	Model	Standardized Coefficients		Sig.	Decision
		Beta	t		
	(Constant)		1.044	.296	
H1	ACIN	.020	.705	.481	Rejected
H2	ACFX	-.070	-3.317	.001	Accepted
H3	ACMEETG	-.077	-3.592	.000	Accepted
H4	ACSIZ	-.013	-.445	.657	Rejected
	LEV	.177	8.386	.000	
	FSIZE	.006	.276	.782	

ACIND1, t	=	Independent AC company i members' ratio in year t
ACFEX 1, t	=	Total proportion of AC members who possess financial/accounting expertise
ACMEET 1, t	=	The proportion of company i annual AC meetings in year t
ACSIZE 1, t	=	Total AC membership in company i in year t
FSIZE 1, t	=	Total assets natural log i in year t
FRMLEV 1, t	=	Proportion of long term debt divided by total assets of the company in year t
ε	=	Error

This study falls back upon earlier researches which formulated proxies for Real Earnings Management (REM). In accordance with the researches by Roychowdhury (2006), Cohen et al (2008) as well as Cohen and Zaeowin (2010) REM intensity related proxies are carried out by focusing on three techniques of manipulating real activities. The three techniques are the abnormal levels of operating cash flow, discretionary expenditure which is unusual and also production costs which are out of the norm. In order to obtain these abnormal rates of the

real activities, a cross-sectional regression was carried out separately by focusing on the type of industry and the year

$$CFO_t / TA_{t-1} = \alpha_0 + \alpha_1 (1/TA_{t-1}) + \alpha_2 (Sales_t / TA_{t-1}) + \alpha_3 (\Delta Sales_t / TA_{t-1}) + \epsilon_t \quad (1)$$

$$DISEXP_t / TA_{t-1} = \alpha_0 + \alpha_1 (1/TA_{t-1}) + \alpha_2 (Sales_{t-1} / TA_{t-1}) + \epsilon_t \quad (2)$$

$$PRODt_t / TA_{t-1} = \alpha_0 + \alpha_1 (1/TA_{t-1}) + \alpha_2 (Sales_t / TA_{t-1}) + \alpha_3 (\Delta Sales_t / TA_{t-1}) + \alpha_4 (\Delta Sales_{t-1} / TA_{t-1}) + \epsilon_t \quad (3)$$

Where,

CFO<sub>t</sub> = Present expenditure flow from operation

DISEXP<sub>t</sub> = Expenditure which are discretionary (Sales, General & Administrating & Research & Development

PRODt = Cost of Production (Cost of Sold Goods & Inventory Change)

St = Present sales proportion

ΔSt = Present sales changes

St-1 = Slow sales

ΔSt-1 = Change in slow sales

TA<sub>t-1</sub> = Total proportion of slow sales

Therefore REM = A combination of ACFO(-1) and ADISEXP (-1) and APROD  
(4)

Table 2. Summary of testing decisions

Hypothesis	Predicted Sign	Standardized Coefficients		t	Sig.	Decision
		Beta				
LEV	+	.186		7.075	.000	
FSIZE	+	.009		.447	.655	
AQBIG4	-	-.381		-1.369	.171	
ACIN	-	-.109		-2.218	.027	
ACFX	-	-.122		-4.072	.000	
ACMEETG	-	-.215		-6.880	.000	
ACSIZE	+	.152		2.968	.003	
AQBIG*4LEV	-	-.012		-.363	.716	
AQBIG*FSIZE	-	-.013		-.491	.623	
H5 AQBIG*ACIND	+	.142		2.917	.004	Accepted
H6 AQBIG*ACFEX	+	.073		2.231	.026	Accepted
H7 AQBIG*ACMEET	+	.200		6.009	.000	Accepted
H8 AQBIG*ACSIZE	-	-.198		-3.743	.000	Accepted
F Value				7.711		
Sig				0.000		
R Square				.084		
N				2226		

Table 1 depicts the negative direction of audit committee independent (ACIND) significance (.481). This is an indication that audit committee independence (ACIND) negatively affects real earnings management (REM). Audit Committee Financial Expertise (ACFEX) also has a positive significant value which is (.001) and this shows that ACFEX exudes positive influence on real earnings management (REM). Similarly, audit committee meeting (ACMEET) also carries a positive significant value of .000, thereby showing that the number of meetings held by the audit committee adversely affects real earnings management (REM). In accordance with a priori expectation, audit committee size (ACSIZE) carries a negative significant value of .657 thereby showing that it has a negative impact on real earnings management (REM). In Table 2, the findings of the research hypothesis for testing decision is portrayed.

### Hypothesis Testing Results

*Audit Committee (AC) and Financial Reporting Quality (FRQ)*

Table 1 indicates a .705 result of t-value and a  $0.481 > 0.05$  value for significance. Earlier researches such as studies by Habbash (2010) Saliman & Raga (2014) have corroborated this finding and it can be beneficial to restrain earnings management (EM) practices. However, these results are not in accordance with other earlier studies which reported that earnings management (EM) has a negative correlation with real earnings management (REM). Another study by Abdul-Manaf et al (2018) indicated that audit committee independence (ACIND) has a negative correlation with real earnings management (REM). Different types of earnings management (EM) can be impacted with this finding. In Table 1, t value has a value of -3.317 while  $0.001 < 0.05$  is the significance value. This result is in accordance with earlier researches such as by Nelson and Devi (2013) who found that the audit committee's financial expertise (ACFEX) is a viable component that can prevent or reduce earnings management (EM) practices. On the contrary this finding is in contradiction with the researches of Habbash et al (2013) as well as Rahman and Ali (2006) as in their researches there were no indications of a negative audit committee financial expertise (ACFEX) and earning management (EM) In Table 1 -3.592 is the t value while  $0.000 < 0.05$  is the significance value which means there is a positive correlation. So, there is a probability that the number of audit committee financial expertise (ACFEX) substantially cut down earnings management (EM)

In accordance with Hypothesis 4 (H4), there is a t value of -0.445 and significance value of  $0.657 > 0.05$ . This result resembles that of Sharms & Kuang's (2014) research. Various related researches revealed that the bigger proportion of the audit committee does not substantially cut down earnings management (EM) but as there is an absence of any statistically significant correlation, negative directional sign has been taken by the coefficient. This finding is the same as a large number of studies for example in studies undertaken by Habbash (2010), Alkadi et al (2012) and Habbash et al (2013) where no significant impact was found in the audit committee size (ACSIZE). Abdul Manaf et al (2018) has also found that the size of the audit committee (ACSIZE) negatively correlates with real earnings management (REM). This research also revealed that a large audit committee size does not have a substantial reduction effect on earnings management (EM).

#### *Impact of Audit Quality Big 4 on Audit Committee and Financial Reporting Quality proxy REM*

In accordance with H5 (Hypothesis 5), among Malaysian listed firms, there exists a positive and significant effect on Financial Reporting Quality (FRQ) which is exerted by Audit Quality Big 4 as a Moderator upon Audit committee independence (ACIND) as well as Financial Reporting Quality (FRQ) proxy real earning management (REM). In relation to this finding, Table 2 supports and accepts this hypothesis at 0.05 (alpha level). This shows that the effect upon audit committee independence (ACIND) and financial reporting quality (FRQ) has been moderated by Audit Quality Big 4.

In accordance with H6 (Hypothesis 6) Financial Reporting Quality (FRQ) proxy REM receives positive significant effect from Audit Quality Big 4 as a moderator on audit committee independence (ACIND) and Financial Reporting Quality proxy REM in Malaysian listed firms. Therefore, Table 2 shows the accepted and supported hypothesis at an alpha level of 0.05. This indicates the moderation effect of Audit Quality Big 4 on audit committee financial accounting expert (ACFEX) and financial reporting quality (FRQ). This implies that through the engagement of a higher number of professionals who are experts in accounting to sit on audit committees, greater initiative will be exercised to enhance external monitoring. This corroborates with the results found by Chen and Zhou (2007) whereby they stated that the proportion of audit committee members who are financially knowledgeable greatly increases the likelihood of selecting auditors from Big 4 companies.

Where Hypothesis 7 (H7) is concerned, Audit Quality Big 4 shows a positive significant effect as a moderator between audit committee meeting (ACMEET) and financial reporting quality (FRQ) in Malaysian listed firms. The results in Table 2 also support and accepts the hypothesis at an alpha level of 0.05. This result implies that Audit Quality Big 4 has moderated the effect on audit committee meeting (ACMEET) and financial reporting quality (FRQ). This shows that hiring an external auditor who is financially knowledgeable and qualified to monitor the firm's financial statement will positively impact audit committee meetings (ACMEET). This is in line with earlier researches such as Lee & Mande's (2005) research where results have shown that frequent and regular audit committee meetings (ACMEET) had a positive impact on audit quality

In accordance with Hypothesis 8 (H8) Audit Quality Big 4 shows a negative significant effect as a moderator between audit committee size (ACSIZE) and financial reporting quality (FRQ) proxy REM in Malaysian listed firms. Therefore, the results in Table 2 supports and accepts the hypothesis at alpha level 0.05. This indicates Audit Quality Big 4 moderated the effect on audit committee size (ACSIZE) as well as on financial reporting quality (FRQ). A likely justification for this is that an audit committee which has a sizeable proportion would



maintain continuous monitoring of the firms, its internal auditors as well as the running of its business although external auditors may not be of high quality. According to KPMG (2013:3), the size of the audit committee (AC) will vary subject to the needs of the firm and firm culture as well as the level of task delegation to audit committee by the board of commissioners.

## **Conclusion**

It is compulsory for every company to set up an audit committee to portray its adherence to good corporate governance policies. If the audit committee is of reputable standard, the process of audit monitoring would also be of higher quality and this in turn will yield a superior audit quality. In line with the monitoring mechanism comes agency theory, which aims to set up an audit committee to supervise the corporate governance aspect and keep track of public accountants so that their performance can be constantly monitored and they in turn will be able to sustain their performance. Agency theory has also brought to light the fact that one of the factors that triggers agency problems stems from mechanisms put down by institutions. It is the task of public accountants to carry out audit to bring advantages to the shareholders but public accountants are hired and paid by the management of the institutions. As the audit procedure is supervised by audit committees of companies, public accountants are deemed to be able to maintain their independence while they carry out their audit task. In accordance with this, a study carried out by Anafiahet et al (2017) and Soliman and Elsalam (2012) showed that audit committees exerted positive influence on audit quality. Hasan et., al (2020) showed that the relationship between audit committee financial accounting expert and real earning management is influenced by the level of the audit big 4 and change. The attributes possessed by the audit committee aids them to upgrade the audit quality of their company. Based on the findings and discussion about the testing between variables and their effects, these conclusions can be made

- H1 Audit Committee Independence had a positive effect on financial reporting quality (FRQ) Real Earning Management (REM)
- H2 Audit Committee Financial Accounting Expert had a significant negative effect on financial reporting quality (FRQ) Real Earning Management (REM)
- H3 Audit Committee Meeting had a significant negative effect on financial reporting quality (FRQ) Real Earning Management (REM)
- H4 Audit Committee Size had a negative effect on financial reporting quality (FRQ) Real Earning Management (REM)
- H5 The Audit Quality Big 4 proved to have a significant effect to moderate the effect on Audit Committee Independence and Financial Reporting Quality (FRQ) Proxy Real Earning Management (REM)
- H6 The Audit Quality Big 4 is proven to moderate the effect on Audit Committee Financial Accounting Expert and Financial Reporting Quality (FRQ) Proxy Real Earning Management (REM)
- H7 The Audit Quality Big 4 proved to have a significant effect to moderate the effect on Audit Committee Meeting and Financial Reporting Quality (FRQ) Proxy Real Earning Management (REM)
- H8 The Audit Quality Big 4 proved to have a significant effect to moderate the effect on Audit Committee Size and Financial Reporting Quality (FRQ) Proxy Real Earning Management (REM)

## **Recommendations**

From the findings of this study is the Malaysian regulators in that the findings will help them to develop new regulations and recommendations related to corporate governance to enhance Earning Management. It will also help them understand the capacity of the current management to manage earnings among Malaysian companies and to know the corporate governance practices of these companies. Creditors might get benefit from the findings in this study because it provides a better understanding of the effects of Audit Quality on Audit Committee which in turn mirrors Earning Management. Based on the results of this study, the creditors should be aware of the Audit Quality, Audit Committee and Real Earning Management and might demand more information to make appropriate decisions.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPSS journal belongs to the authors.

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# **Interactive Multimedia Application to Improve Students' Understanding of Forces**

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**Abstract:** This research to identify the effect of cognitive tools of interactive multimedia application to improve students' understanding the topic of Forces. Test design (pre-post test) uses twice measurement. A sample of 29 students involving are students Kolej Matrikulasi Pulau Pinang were randomly selected. The learning variable for this research are the achievement of the pre- post test while the independent variables is blended learning among multimedia interactive cognitive tools is PhET and video simulation application by Apps powtoon as a cognitive tool well as treatments with the guidance of lecturers. Research instrument was used design Pre-Post Test sets question the topic of Forces. The data analyse method are descriptive and statistics the pre-post test. The result of research by analyze SPSS the mean of post test (13.41) higher than the mean value of pre test (10.83), which is an increase of 2.59. In addition repeated t-test of measurement have shown that the results of research are significant ( $t = -4.807$ ,  $df = 28$ ,  $p = .00(p < .01)$ ). The nul hypotesis was rejected and there was a difference in pre test and post test on the achievement of students study by multimedia interactive cognitive tools. Hence using PhET simulation application and video built by Apps Powtoon as engagement tool in teaching of Forces and Movement can enhance the performance of the Physics students.

**Keyword:** Cognitive tool, Multimedia applications, PhET simulation Application, Apps Powtoon.

## **1.0 Introduction**

Passive learning of Physics makes students less interested in learning it. This problem is also contributed by non-interactive teaching methods during teaching and learning process. The theory of cognitive load states that mentally students cannot structure information effectively when there is a conflict of knowledge. Finally students do not understand Physics concepts well and expose students to misunderstanding concepts.

Force and Movement is one of the topics in the Physics subject of Form 4 in Malaysia and the 4th topic for learning in Semester 1 (SP015) at the Matriculation College of the Ministry of Education Malaysia. This topic is one of the topics that is often considered difficult and requires a high level of understanding to understand and master it. To master this topic, students must have a good level of conceptual understanding. To ensure that the current teaching and learning process is in line with the development of 21<sup>st</sup> Century Learning (PAK-21), then here is the role of digital technology integration in learning in the era of Industry 4.0(IR4.0) The teaching and learning process for design and strategy integrated into PhET simulation and Apps Powtoon digital video as a cognitive tool can not only attract students' interest but it is also one of the teaching and learning process, activities centered on students and lecturers as guides. The interactive multimedia application in the 21<sup>st</sup> Century Learning process also helps students focus more in addition to understanding the teaching content more easily.

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- Selection and peer-review under responsibility of the Organizing Committee of the Conference

The topic of Force and Motion contributes to 6% of the overall score of the Semester 1 Matriculation Program Semester Exam (PSPM) and this topic is also linked with the topic after it, which is the topic of Work, Energy and Power which contributes to 10% of the overall score of PSPM semester 1. Topic of Forces and Movement is not well mastered, it will have an impact on the next topic. Therefore, to understand how the use of interactive multimedia can help in learning the topic of Force and Movement.

This study was conducted to identify the problems faced by students in mastering the topic Forces and Movement from the aspect of improving achievement with the cognitive tools of interactive multimedia applications, namely PhET simulation applications and videos built by Apps Powtoon as a cognitive tool well as treatment is cognitive tool with the guidance of lecturers. Considering the challenges of learning during the pandemic, researchers need to think about teaching and learning strategies using more effective approach techniques according to the needs of changes over time for the subject of integrated Physics through the Google Classroom platform to evaluate the success and understanding of students on the topic of Force and Motion.

### **1.1 Problem Statement**

According to the Candidate Work Report (LKC) of the Examination of Matriculation Program (PSPM) Semester 1 Session 2020/2021 only some students (27%) from Penang Matriculation College (KMPP) successfully answered topic questions of Forces correctly and accurately. The rest, students lose marks due to several factors. Students are still not able to draw a free body diagram, Free Body Diagram (FBD) very well, and also the students cannot determine the friction force and tension force that exist in the next question and cannot calculate the friction force. In addition, some of these students are also unable to resolve the forces according to the correct components of x-components and y-components and also still confused the use of sine and cosine function.

Besides from that, according to the Test Determinant Table (JPU), topic of Forces contribute to 6% of the total PSPM score in Semester 1 and this topic are also related to the topic after it, which is the topic Work, Energy and Power which contribute to 10% of the total marks for PSPM score in Semester 1. Topic of Forces is not mastered well, it will affect the next topic. Therefore, to understand how the use of interactive multimedia application can help in learning the topic of Forces, then this research will highlight more about interactive multimedia application by using PhET simulations and apps Powtoon as a cognitive tool and how it used as well and their potential to help student in various topic in syllabus Semester 1 among them which will involves concept resolving vectors:

Chapter 1: Scalar & Vector

Chapter 2: Projectile Motion

Chapter 3: Impulse & Conservation of Linear Momentum

Chapter 4: Forces

Chapter 5: Work, Energy & Power

### **1.2 Purpose**

This study was conducted to identify the problems faced by students in mastering the topic of Forces from the aspect of students' achievement with the cognitive tools of interactive multimedia applications which are PhET simulation applications and videos built by Apps Powtoon as a cognitive tool and the treatment with lecturer guidance. Since learning challenges when teaching during pandemic of Covid19, researchers need to think about teaching and learning strategies using more effective approach techniques. According to the needs of changes of time, Physics subjects are integrated through the Google Classroom platform to evaluate the achievement and understanding of students in topic of Forces.

### **1.3 Objective**

To identify the effect of cognitive tools by using interactive multimedia applications are PhET simulation applications and videos built by Apps Powtoon as a cognitive tool to improve students' understanding of Forces.

#### **1.4 Research Question**

Are there any effects of using interactive multimedia applications are PhET simulation applications and videos built by Apps Powtoon as a cognitive tool to improve students' understanding of Forces?

#### **1.5 Research Hypothesis**

##### **Hypothesis:**

$H_0$  : There is no statistically difference in mean score of post test between pre test in learning of Forces using interactive multimedia application are are PhET simulation applications and videos built by Apps Powtoon as a cognitive tool.

$H_a$ : There is statistically difference in mean score of post test between pre test in learning of Forces using interactive multimedia application are are PhET simulation applications and videos built by Apps Powtoon as a cognitive tool.

#### **1.6 Scope and Research Limitation**

This study is to investigate the effectiveness of the engagement tool (PhET simulation applications and videos built by Apps Powtoon). The independent variable will be the engagement tool and the dependent variable will be the test score of the students treatment with PhET simulation applications and videos built by Apps Powtoon as a cognitive tool. Hence the study will look on the significant difference in mean score between the pre test and post test. Our research limitation is time constraint. As our programme is only less than one year and students' learning time for Forces was so limited, we can only give two weeks time for the students to answer the post-test after we have done the intervention.

## **2.0 Literature Review**

Educators are always looking for new methods and approaches that are more effective to improve the quality teaching and learning process and one of them is the role of digital technology integration in learning in the era of Industry 4.0 (IR4.0) as stated by Susilahudin and Uswatun (2018).

According to Noor Izyan and Fatin, 2012 Free-Body Diagram (FBD) is a representative diagram that helps students solve problems about Force. Difficulty for students to determine the direction of the force acting on the object in various situations causes difficulty for students to resolve the forces according to force components. Because of that, students need to master the teaching of Free-Body Diagram (FBD) well. This is a basic concept that students need to master.

Apart from that, according to Shukor (2018) students face problems in the aspect of determining the direction of forces that act on stationary objects that are above the horizontal plane and the inclined plane, then resolve the forces that act according to the force components and solve questions related resolve vector of Forces. In order to master and solve questions related to resolving vector in forces, students need to have basic level knowledge. Otherwise, they will have difficulty learning this topic and beyond because physics concepts are interconnected with each other. Therefore, understanding of this topic will not be achieved if students fail to understand the basic concept.

Therefore, to strengthen students' knowledge related to the basic concept of force balance and attract students' interest in mastering the topic of Force which was difficult to understand before, interactive multimedia applications are said to be improvements to the teaching and learning process.

The development of technology in the current era of Industry 4.0 (IR 4.0) has brought changes and affected various aspects of human life, including in the field of education. This interactive multimedia application in the

21<sup>st</sup> Century learning process helps students to focus more in addition to understanding the teaching content more easily as stated by Fatin et al., 2021. Cognitive tools by using videos built by Apps. Powtoon as a cognitive tool well as treatment with This lecturer's guidance will be more interesting and motivate students to learn better. As agreed by Sukmanasa et al., 2020).

In addition, the PhET (Physics Education Technology) simulation application, which is a project at the University of Colorado, develops a network of Physics simulations by leveraging the sophistication of computers to deal with problems that cannot be solved by other tools. PhET simulations are interactive moving pictures (animations) and they give students the opportunity to try and learn through them as agreed by Rusnita (2019).

In addition, in 2015, the construction of a diagnostic test to identify power balance learning problems was conducted by researchers Nursaila and Faridah. This diagnostic test evaluates the level of students' thinking skills in the topic of forces. These thinking skills are divided into two, namely low-level thinking skills and high-level thinking skills. Low level thinking skills occurs when students solve problems where the solution of the problem uses algorithms and familiar situations. High level thinking skills (HOTS) on the other hand, does not use algorithms and can have many ways of solving problems. The cognitive level for Low level thinking skills is remembering, understanding and applying while the cognitive level for HOTS is analyzing, evaluating and creating. The results of the previous study found that the weak mastery of the concept of force among students caused students to face difficulties in answering correctly. So, to improve student understanding and also interest students in the topic of forces, it is suggested that educational digital games can be developed to help teachers diversify teaching and learning techniques.

I FORCE innovation introduced by Shukor (2018) to help students master the basic skills of the concept of forces. I FORCE is divided into two main parts, namely the Force Direction Determination Tool (I FORCE) and the Solution of Force Balance Questions Using the Color Method (I FORCE TABLE). This I FORCE innovation has a positive impact on the teaching and learning process because students do not feel bored while following the teaching and learning session because this teaching aid is based on the concept of Hands on Activity and 21<sup>st</sup> Century Learning which is student-centered. As a result of the findings of previous studies, the innovation of Vector Resolution has actually been designed into a cognitive tool using videos built by Apps Powtoon (an interactive multimedia application). In general, as a result of the video cognitive tool built by Apps Powtoon, learning the concept of vector resolution turns out to be interesting and increase students' understanding in mastering the concept of vector resolution and subsequently it helps students improve the basic mastery of the concept of Forces.

In the field of education, efforts to improve the effectiveness of digital technology integration in teaching and learning process should continue to be carried out in order to produce professional human capital through a quality education system that is always aware of current technological developments. The basic principle in the use of digital technology in Physics is not to be used as a substitute for the use of conceptual understanding but instead technology plays a role in improving students' conceptual understanding of the basic idea and developing high-level thinking skills (HOTS) in the students themselves. The combination of ICT is very effective in the blended learning method becoming the latest trend. Many researchers think that the integration of digital technology in the teaching and learning process has great potential and is able to provide great benefits to be applied into the culture of teaching and learning, especially in the Science subject.

## **2.1 Model of Research**

The interactive multimedia application which are PhET simulation applications and video built by apps Powtoon as a cognitive tool well the treatment with the guidance of lecturers meet the components of the TPACK model emphasizing the integration of technology in teaching and learning. The construction of cognitive tools in this study has basically used the TPACK Framework (Technological Pedagogical Content Knowledge) that was mentioned by Mishra & Koehler (2006). This framework has developed the ideas of Shulman (1987) who introduced the phrase Pedagogical Content Knowledge (PCK), which is a combination of pedagogical knowledge and content knowledge (PCK), which is important for teaching which effective TPACK already combine element technology to PCK.



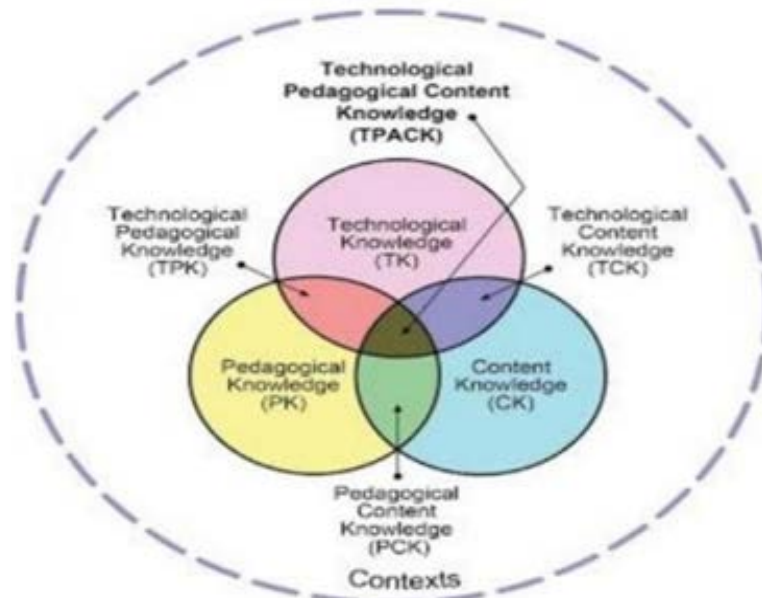


Diagram 1 . Framework TPACK

This framework suggests that the quality teaching should be able to master all three component. This framework does not merely emphasize technology integration in teaching, but also emphasizes the importance of pedagogy and of course the content of lessons. In other words, the TPACK framework suggests a guide as to 'what which to be taught', 'how to teach', and 'what kind technology' which suitable used when teach. Many studies have been done using the TPACK framework to evaluate the role and effectiveness of teachers to apply technology in teaching activity. However in this study, the researcher have used this framework to explain the role of the teacher on the importance of the understanding potential interactive multimedia PhET simulation and videos built by Apps Powtoon as a cognitive tool and the treatment guidance by the lecturer, which gives clear impact and accurate understanding to master resolving vectors in 2D (x-component and y-component) and combine in mastering the concept of the Forces by applying all three components technology, and the content and their relationship.

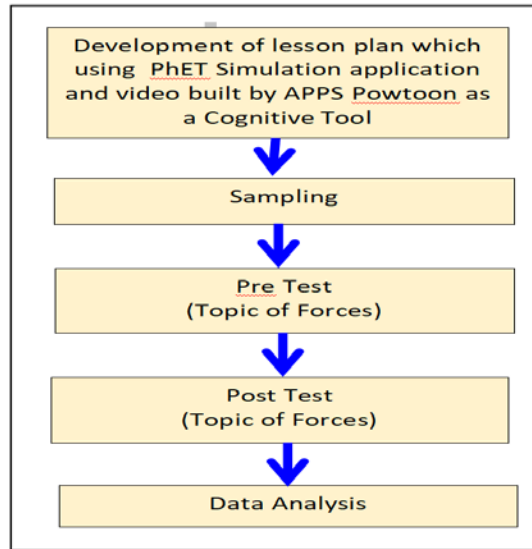
## 2.2 Summary of Literature Review

In the field of education, efforts to improve the effectiveness of digital technology integration in teaching and learning process should be made continues to produce professional human capital through a quality and continuous education system aware of current technological developments. The basic principle in the use of digital technology in Physics is not used as a substitute for the use of conceptual understanding but instead technology plays a role to improve students' conceptual understanding of the basic idea and develop high-level thinking skills (HOTS) on the student himself. The combination of ICT is very effective in the *blended learning method* as the latest trend. Many researchers think that the integration of digital technology in the teaching and learning process has high potential and able to provide great benefits to be applied into teaching and learning process especially in Science subject.

## 3.0 Methodology

This research is about the effectiveness of cognitive tool, interactive multimedia PhET simulation and videos built by apps Powtoon that have been using in teaching Forces and Movement. This research will explain the research design and research sample, intervention, research instrument, research procedure and data analysis that have been done.

### 3.1 Development of Theoretical Framework



### 3.2 Research Design

The objective of this study is to examine the effectiveness of multimedia interactive cognitive tools, namely PhET simulation and video applications built by Apps Powtoon as a cognitive tool well as treatment with the guidance of blended learning lecturers (Synchronous and Asynchronous) and integrated through the Google Classroom platform to assess the effectiveness and understanding of students mastering the topic of Forces and Movement. The research design used is in the form of Pre and Post Test. Test design (Pre-Post) using 2 times of measurement. (Table 1).

Table 1 . Pre-Post Test Design

O1	X1	O2
(Pre Test)	(Treatment)	(Post Test)

Guidance:

O1 = Pre-Test.

X1 = Treatment (Lecturer guidance, Interactive simulation and video applications built by Apps Powtoon).

O2 = Post Test.

A Pre-Test was carried out on students to find out the level of mastery of the Power topic and the basis of their existing knowledge before conducting the treatment. After that, the lecturer's guidance for the topic of Forces:

1. Forces and conditions of existence.
2. FBD (Free Body Diagram)
3. The video was built by Powtoon as a cognitive tool is reference for 2D vector resolution techniques and determining the position of sin and cosine.
4. Concept of Newton's 1<sup>st</sup> Law, Newton's 2<sup>nd</sup> Law and Newton's 3<sup>rd</sup> Law.

Then, students will undergo a Post-Test using the same instruments as those found in the Pre-Test that was conducted at the beginning of the study.

### 3.3 Research Sampling

Based on the research question, the research method used is the Pre and Post Test design. The Pre-test and Post-Test design used 2 measurements. Student performance is measured by comparing the scores of 30 question in Pre- and Post-Test related to the topic of Forces. The results are then compared using t-test analysis for repeated measurements (Paired Sample t-test). A total of 29 KMPP students were involved in this study. The study sample was randomly selected from 3 classes, namely classes F5T1A, F5T1B and F5T3B.

### **3.4 Intervention**

This test was administered using an experimental group of 29 people. This group underwent a Pre-Test where this experimental group had to answer basic questions related to the topic of Forces before interactive multimedia cognitive tools, namely PhET simulation applications and videos built by Apps Powtoon as a cognitive tool well as treatment with the guidance of lecturers. The intervention was conducted on an experimental group where cognitive tools were used through the Google Classroom platform. A post-test was then conducted for the experimental group. Pre-Test and Post-Test are compared to see the students' achievement after using cognitive tools.

### **3.5 Research Instrument**

The instrument used in this study is a set of Pre and Post Tests containing 30 objectives questions on the topic of Forces. These questions are based on the Test Setting Table (JPU) and have different levels of Bloom's Taxonomy. The content of the question consists of the level of knowledge, understanding and analysis to assess the student's achievement on the topic of Force and Motion.

### **3.6 Research Procedures**

This study is an experimental study using a Pre-Post Test design. The Pre-Post Test design uses twice measurements. The selection of this design aims to measure whether the intervention used has an effect on the dependent variable.

### **3.7 Pilot Test**

Pilot test has been done to assess the validity and consistency of the research instrument. 30 students have been chosen for the pilot test. The data have been collected and Kuder-Richardson test has been use to test the reliability and consistency of the research instrument. As the question are in different level of Bloom's taxonomy, we decide to use KR 20 to measure the reliability and consistency. From the test, the value of KR 20 is .70 which is considered as high reliability and consistency of the research instrument.

### **3.8 Research Analysis**

Data analysis for this study uses SPSS software. The test used is the t-test analysis for repeated measurements (Paired Sample t-test). The total sample is 29 people from 3 classes F5T1A, F5T1B and F5T3B. Analysis based on the normality test found that the data is normally distributed. The p value of the Pre-Test and Post-Test exceeds 0.01 significant value ( $p > 0.01$ ). Paired t-test assumptions are met.

Table 2 . Test of Normality for Pre-Test and Post-Test

Shapiro-Wilk		
Statistic	df	Sig.

PRE test	.920	29	.031
POST test	.914	29	.021

a. Lilliefors Significance Correction

Table 3. Paired Samples Correlations for Pre-Test and Post-Test

Paired Samples Correlations			
	N	Correlation	Sig.
Pair 1	PRE test & POST test	.789	.000

The results of paired samples correlations showed positive significance between the Pre and Post Test after the intervention ( $r = .789$ ,  $p = .000$  ( $p < .01$ )).

The study proves that the application of interactive multimedia cognitive tools, namely the PhET simulation application and video built by Apps. Powtoon as a cognitive tool, can increase the motivation to learn, open up more space for learning and further have a positive and multiple effect on learning outcomes.

#### 4.0 Finding and Discussion

This chapter will be discussing the research findings on the effectiveness of interactive multimedia cognitive tools, namely the PhET simulation application and video built by Apps Powtoon in teaching Forces for matriculation students.

#### 4.1 Differences in Achievement Score Between the Use of Multimedia Cognitive Tool (PhET simulation application and video built by Apps Powtoon) and conventional Method.

Table 4 . Paired Samples Statistics for Test Pre and Test Post

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRE test	10.8276	29	4.58311	.85106
	POST test	13.4138	29	4.30546	.79950

Table 4 shows the group statistics table obtained from the results of the t-test conducted. The table above shows that from  $n=29$  samples involved and the mean value of the Post-Test (13.42) is higher compared to the mean value of the Pre-Test (10.83), which is an increase of 2.59 .

Table 5 . Paired Samples Test for Pre-Test and Post-Test

Paired Samples Test

Paired Differences						
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference	t	Sig. (2-tailed)
					df	

				Mean	Lower	Upper			
Pair	PRE test –	-2.58621	2.89726	.53801	-3.68826	-1.48415	-4.807	28	.000
1	POST test								

Based on Table 5 which shows the t-test analysis, it was found that the value of  $t = -4.807$ ,  $df = 28$ ,  $p = 0.000$  ( $p < .01$ ). Paired t-test (Paired samples Test) mean value,  $p = -2.59$  shows an increase between Pre-Test and Post-Test. Based on the results of the study it is significant ( $t = -4.807$ ,  $df = 28$ ,  $p = 0.00$  ( $p < 0.01$ ). The null hypothesis was rejected and the researcher decided that there is a difference between the Pre-Test and the Post-Test on student achievement in mastering the topic of Forces. This means blended learning between interactive multimedia which is a simulation application PhET and videos built by Apps Powtoon as a cognitive tool well as treatment with lecturer guidance that have been combined can significantly increase student achievement in topic of Forces.

#### **4.2 Conclusion**

This study proved that the application of interactive multimedia cognitive tools, namely the PhET simulation application and video developed by Apps Powtoon as a cognitive tool, can increase the motivation to learn, open up more space for learning and subsequently have a positive and multiple effect on learning outcomes. This research is supported by Elena (2019), interactive multimedia is an online instruction that combines multimedia formats such as text, video, audio, images with activities that help the learner apply and receive feedback on their understanding. This finding also positively shows that when the intervention enhances their performance towards Forces, it can also increase the students' motivation in learning the topic.

#### **5.0 Conclusion and Discussion**

This study is a quantitative study to measure the effectiveness of the use of multimedia interactive cognitive tools which are PhET simulation applications and videos built by Apps Powtoon as a cognitive tool well as treatment with the guidance of lecturers to master the topic of Forces. The data for this study was obtained. A summary has been made from the results of the research that has been analyzed.

According to the statistical table, it was found that the mean test achievement of the treatment group that used multimedia interactive cognitive tools, namely the PhET simulation application and videos built by Apps Powtoon as a cognitive tool, as well as treatment with lecturer guidance, which was after the Post-Test was 3.34 higher than the Pre-Test which was 2.27. Found a value of  $t = -4.573$ ,  $p = 0.00$  ( $p < .01$ ). So, the null hypothesis was successfully rejected. This means that the null hypothesis ( $H_0$ ) which states that there is no significant difference in the mean achievement of students who use multimedia interactive cognitive tools which are PhET simulation applications and videos built by apps Powtoon as a cognitive tool well as treatment with lecturer guidance compared to traditional methods for the topic of Forces is rejected. Therefore, the alternative hypothesis ( $H_a$ ) which states that there is a significant difference in the mean achievement of students who use multimedia interactive cognitive tools which are PhET simulation applications and videos built by apps Powtoon as a cognitive tool well as treatment with lecturer guidance compared to conventional methods for the topic of Forces is accepted. With this, we can conclude that the use of multimedia interactive cognitive tools, namely PhET simulation applications and videos built by apps Powtoon as well as treatment with lecturer guidance, are more effective than traditional methods in achieving student mastery the topic of Forces.

The learning intervention of the interactive multimedia application approach, which is the cognitive tool of the PhET simulation application and the video built by apps Powtoon as a cognitive tool leaves a great impact and it attracts interest in learning about the topic of Forces. The objective of the study focuses on identifying the effect of the cognitive tool of the interactive multimedia application on increasing student understanding the topic of

Forces and can help facilitate teaching sessions. Teaching Physics becomes interesting and interactive. This research can be continued by adding learning elements in various interesting digital forms in order to increase collaboration and the involvement of students to collaborate in an innovative way. It can also transform teaching and learning methods to build communication skills, critical thinking, creativity and collaborative skills among students. In line with 21st century learning which is fun to test and strengthen students' level of mastery the topic of Forces.

From the findings of the study, the researcher found that the general objective of the study has been achieved, students being able to answer all forces questions in various forms of conditions and positions can improve student achievement the topic of Forces. The video cognitive tool built by apps Powtoon as a cognitive tool leaves a great impression and impact where students are also able to quickly and easily remember vector solutions and determine the position of sin and cosine in addition to Force topics such as Scalar & Vector, Projectile Motion, Impulse & Conservation of Linear Momentum, Forces and Work, Energy & Power.

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# **Enhancement of Teaching Methodology of the Course Zoology of Invertebrates Based on the Digitalization of Education in Pedagogical Higher Educational Institutions of the Republic of Uzbekistan (on the Example of Using Quiz Bot)**

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**Abstract:** In the modern period of the entry of New Uzbekistan into the era of the Third Renaissance, the government and the head of our state pay great attention to the development of science and education, the improvement of the educational sphere, especially the comprehensive support of representatives of science and education, the education of comprehensively and harmoniously developed youth. For modern youth, the digitalization is an integral part of their lives. The digitalization of education is an integral part of the modern educational system, since the life of modern youth is inextricably linked with computers, smartphones, gadgets, and laptops. Digital technologies surround us everywhere: at home, schools, universities, hospitals and from year to year are developing at a great speed. In the context of the foregoing, this article discusses the methodology for improving the teaching of the course "Invertebrate Zoology" based on the digitalization of education using the example of Quiz Bot. The article describes an example of using tests in Quiz Bot as a training simulator, presents the results of the experiment, as well as a student survey conducted to assess students' attitudes towards this method

**Keywords:** Digitalization of Education, Technology, Quiz Bot, Digital Technologies, Tests, Testing, Smartphones, Invertebrate Zoology

## **Introduction**

According to the life principle of President of Uzbekistan Sh.M. Mirziyoyev - "The greatest wealth in the world is the knowledge and profession acquired in his youth." In this regard, great responsibility rests with the teacher, who is a source of knowledge for modern schoolchildren, and the preparation of competent, comprehensively developed teachers is the main task of higher pedagogical universities. Modern science and education cannot be imagined without modern computer technologies, therefore the development of modern science provides for its digitalization. Great attention in the Republic of Uzbekistan is paid to the development of higher education in the digital economy, and the main requirement that increases the level of modern education is its digitalization. On October 5, 2020, the Decree of the President "On approval of the Strategy "Digital Uzbekistan-2030" and measures for its effective implementation" were issued. In his annual message to the Oliy Majlis on January 24, 2020, the President of the Republic of Uzbekistan Sh.M. Mirziyoyev declared 2020 as the "Year of Development of Science, Education and the Digital Economy".

## **Literature Review**

Digitalization is a widespread process of dissemination and implementation of digital technologies in various spheres of society: Economy, culture, education, etc. (Gordeeva, 2021). Recently, digitalization has been widely spread in the field of education.

According to some Russian researchers, the digitalization of education as the most important global trend in replacing analog technologies with digital ones has a significant impact on modern education. The digitalization of education is based on the use of neural network technologies, cloud, cognitive technologies and artificial intelligence technologies, which allow automating a large number of functions and creating specialized educational environments for full-fledged learning (Prokhorova et al., 2020).

Given the specifics of the younger generation, universities are increasingly using digital channels in brand communications. This allows you to create a single, complete image, close and understandable to modern students. They are not interested in the educational process aimed at the transmission and memorization of

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knowledge, since they live in conditions of free access to a huge amount of information. Digital technologies clearly affect the brand of the university. The study notes that students do not directly associate digital technologies with the university brand, but expect them to implement the mandatory functional elements of the university brand: ease of learning, up-to-date knowledge, satisfaction with the learning process due to time savings and the possibility of learning 24/7 anywhere in the world, learn easier, with interest and continuously, learn from the world's leading practitioners and experts. (Popova, 2019)

After Uzbekistan gained independence, great changes took place in the education system. Much attention was paid to the fundamental reform of the education system. (Khamdamova, 2020) Today, the use of Quiz Bot is relevant area of modern education. Using a chat bot to create surveys and tests allows you to use electronic testing as a formative control tool, receive regular information about the progress of the educational process and provide feedback to students.

With the correct use of test tools, the learning process, both in full-time and remote form or in the form of controlled independent work, becomes focused on the student and such interaction greatly increases the involvement and motivation of the student. Today, almost every person has one or another in his phone, and as a rule, more than one messenger for exchanging information, for example, Viber, WhatsApp. Messenger is a free system for exchanging text messages, images, video, audio and electronic documents, which is installed on mobile phones and other platforms. One of the most popular messengers is Telegram. Today, Telegram offers its users such a feature as creating a test using the Quiz Bot chat bot. A bot is a special multifunctional program written for the Telegram platform and designed to perform a variety of tasks: from receiving news to searching for information. There are a large number of bots on this platform. The main function of the bot is the automatic response to the command entered by the user. With the help of a bot, you can search for information, learn, translate, test, play or use other services. The bot makes it possible to solve tasks set by the user using instant commands, chat bots do not require special installation, are available and free of charge and do not take up a separate place in the smartphone's memory (Boda, 2021).

## **Methodology**

Quiz Bot, has such advantages as free, accessibility, ease of use and no need for registration. Another advantage of this bot is that immediately after the test, you can get the test result of all test participants simultaneously in descending order. The simplicity and accessibility of this program make it possible to conduct both control tests and tests aimed at consolidating knowledge. When conducting control tests, it is possible to test and evaluate the knowledge of a large group of participants at once. Consolidation of knowledge is achieved by repeated repetition of tests on a particular topic. As a result of this, not only the number of correct answers increases, but also the time it takes to solve tests decreases. In addition, the use of these tests does not require the test participants and the compiler of the tests to have special equipment and techniques. These tests can be carried out on a smartphone with the appropriate software. And smartphones are now available to virtually everyone. All this contributes to the further motivation of the student in achieving better results.

In the course of invertebrate zoology, a huge number of terms are used that characterize the features of the structure and development of invertebrates. In the process of teaching invertebrate zoology, I came across the fact that students do not remember these terms well because of their huge number. In order to motivate students to memorize these terms, it was decided to use practice tests and to implement this idea, use the Quiz Bot program on the Telegram social network.

First, we ourselves compiled tests in this program and provided them for students to solve. The tests were regularly repeated in Quiz Bot, and with each repetition there was an improvement in the results of the students. In addition, a positive psychological result of this experiment was observed: the tests brought students closer together, since during the testing they exchanged their thoughts and emotions in a chat and their motivation to study the material increased. Then the students were asked to compose their own tests and present them to their classmates for solving. The individualization of the educational process has increased, which, in turn, has affected the quality of students' education by increasing their independent activities.

## **Results and Discussion**

Experiments with tests using the Quiz Bot program were carried out in groups 100 R and 101, direction of Biology, Faculty of Natural Sciences, Tashkent State Pedagogical University named after Nizami. Tests were compiled for sections Protozoa, Coelenterates, Flatworms, Annelids, Mollusks and Arthropods of the course Invertebrate Zoology. Below are pictures showing the application of this technique in the Quiz Bot program. (Figure 1,2.)

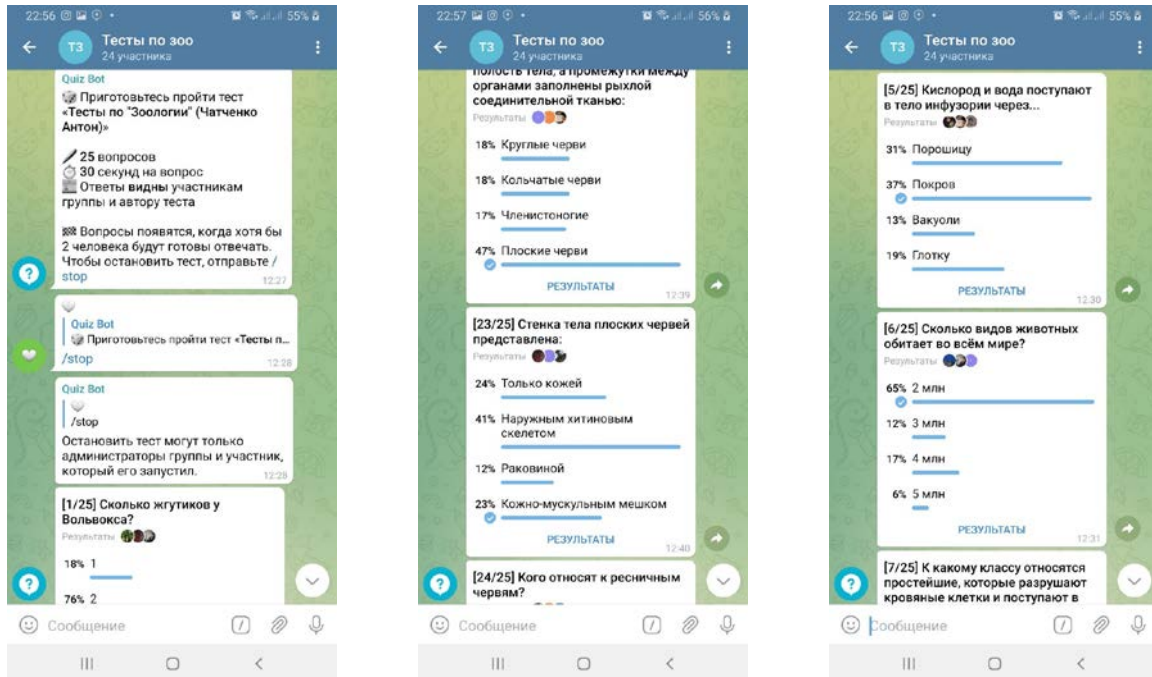


Figure 1. Beginning of testing and results obtained after the first test

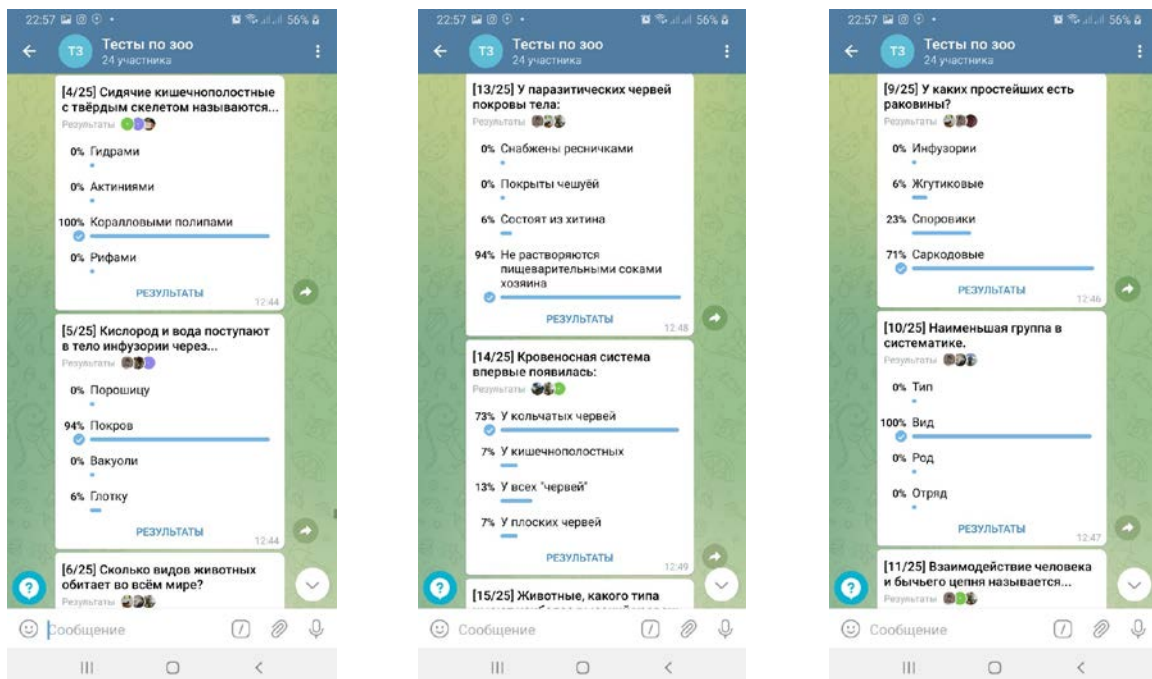


Figure 2. Results of retests

In the figures from the chat bot, it can already be seen that after several repetitions of tests in the bot and independent individual work of students on themselves, the test results have improved significantly. This indicates the effectiveness of this form of testing and the positive result of the experiment. The table below shows the results of students who presented the bot at the end of testing at the beginning of the experiment and at the end of the experiment.

Table 1. Test results showing the number of correct answers and the time it took to solve the tests

Student results at the beginning of the experiment	Student results at the end of the experiment
<p>🚩 The test "Tests on "Zoology" (Anton Chatchenko)" is over!</p> <p>You answered 25 questions</p> <ol style="list-style-type: none"> <li>1. Parvina - 21 (4 min 42 sec)</li> <li>2. @Muhlisa_Maxamatjonova - 18 (2 min 55 sec)</li> <li>3. @shariffovna - 18 (6 min 21 sec)</li> <li>4. Tukhtarova 100R-bio - 17 (5 min 45 sec)</li> <li>5. Farangiz - 16 (4 min 42 sec)</li> <li>6. °•Akbarova Nargiza° - 15 (5 min 20 sec)</li> <li>7. @muborak0202 - 15 (6 min 53 sec)</li> <li>8. @K_Gulsevar - 15 (7 min 17 sec)</li> <li>9. @hujabekovna_18 - 14 (4 min 11 sec)</li> <li>10. @aikodaniel - 14 (5 min 46 sec)</li> <li>11. @Chatchenko_Anton - 13 (3 min 30 sec)</li> <li>12. @rayhona_i - 13 (7 min 17 sec)</li> <li>13. Humor - 11 (2 min 31 sec)</li> <li>14. @sobirkhodjaeva1 - 11 (5 min 20 sec)</li> <li>15. <b>Sevinch</b> - 11 (5 min 35 sec)</li> <li>16. @nurjanovna_r - 9 (5 min 54 sec)</li> <li>17. @s_me17 - 8 (5 min 49 sec)</li> </ol> <p>🏆 Congratulations to the winners!</p>	<p>🚩 The test "Tests on "Zoology" (Anton Chatchenko)" is over!</p> <p>You answered 25 questions</p> <ol style="list-style-type: none"> <li>1. @rayhona_i - 25 (3 min 36 sec)</li> <li>2. @shariffovna - 24 (2 min 3 sec)</li> <li>3. Parvina - 24 (2 min 8 sec)</li> <li>4. @sobirkhodjaeva1 - 24 (3 min 20 sec)</li> <li>5. @Chatchenko_Anton - 24 (3 min 36 sec)</li> <li>6. @nurjanovna_r - 23 (1 min 40 sec)</li> <li>7. Farangiz - 23 (2 min 2 sec)</li> <li>8. @Muhlisa_Maxamatjonova - 23 (2 min 11 sec)</li> <li>9. Tukhtarova 100R-bio - 23 (2 min 46 sec)</li> <li>10. @s_me17 - 22 (2 min 48 sec)</li> <li>11. °•Akbarova Nargiza° - 22 (3 min 32 sec)</li> <li>12. @aikodaniel - 22 (5 min 13 sec)</li> <li>13. @muborak0202 - 21 (4 min 29 sec)</li> <li>14. <b>Sevinch</b> - 19 (4 min 14 sec)</li> <li>15. @hujabekovna_18 - 18 (3 min 34 sec)</li> <li>16. @K_Gulsevar - 16 (3 min 45 sec)</li> <li>17. Humor - 16 (4 min 6 sec)</li> </ol> <p>🏆 Congratulations to the winners!</p>

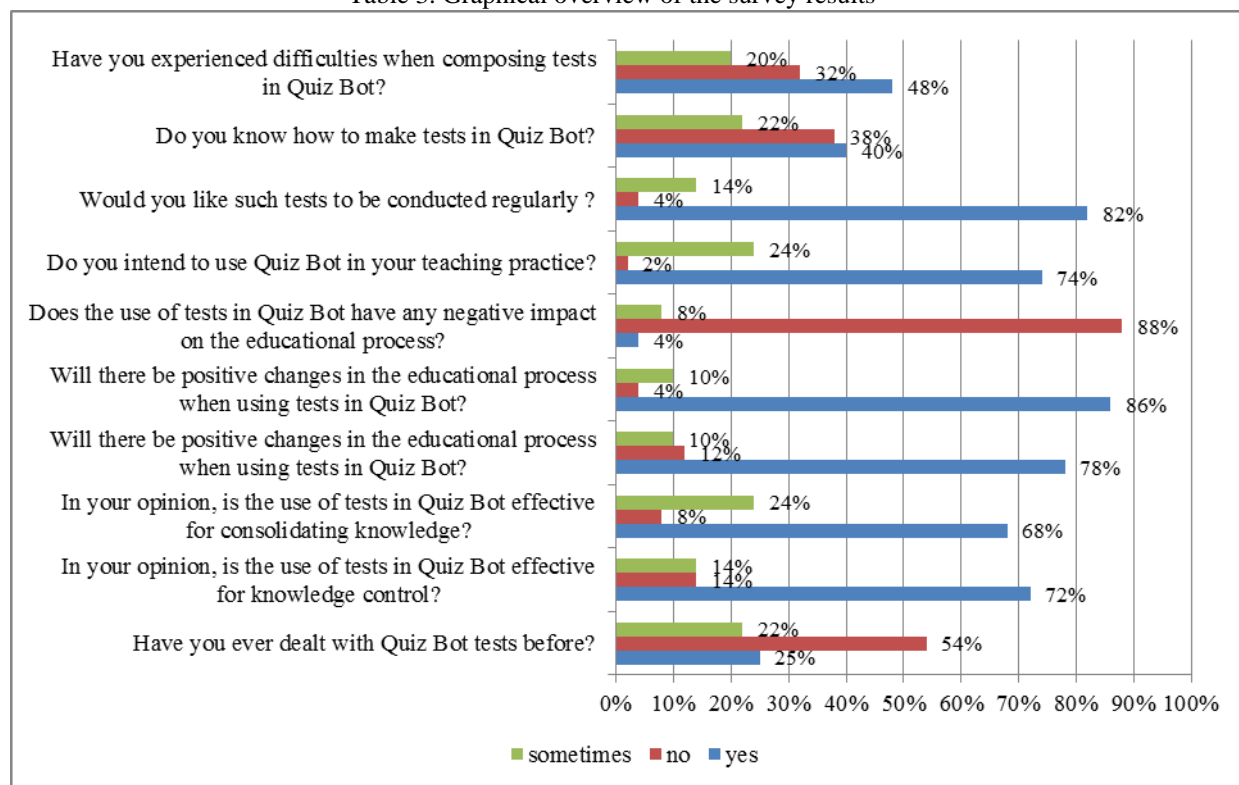
The results displayed in the table show that not only the number of correct answers has improved, but also the time it took to solve the tests has decreased. Based on this, we can conclude that along with the increase in the level of knowledge of students, they began to answer questions more confidently. And this indicates that as a result of the experiment, a positive psychological effect was also obtained.

To study the opinion of the students themselves regarding testing in Quiz Bot, a survey was organized in the form of questionnaires, which consists of 10 questions. Questioning was conducted among the students of the groups in which the experiments were carried out.

Table 2. Questions and results of the survey

Questions	yes	no	sometimes
Have you ever dealt with Quiz Bot tests before?	25%	54%	22%
In your opinion, is the use of tests in Quiz Bot effective for knowledge control?	72%	14%	14%
In your opinion, is the use of tests in Quiz Bot effective for consolidating knowledge?	68%	8%	24%
Will there be positive changes in the educational process when using tests in Quiz Bot?	78%	12%	10%
Will there be positive changes in the educational process when using tests in Quiz Bot?	86%	4%	10%
Does the use of tests in Quiz Bot have any negative impact on the educational process?	4%	88%	8%
Do you intend to use Quiz Bot in your teaching practice?	74%	2%	24%
Would you like such tests to be conducted regularly?	82%	4%	14%
Do you know how to make tests in Quiz Bot?	40%	38%	22%
Have you experienced difficulties when composing tests in Quiz Bot?	48%	32%	20%

Table 3. Graphical overview of the survey results



The test results give a positive trend and show that there is an improvement in the results and an increase in the level of knowledge of students, as well as a reduction in the time it takes students to think about a question. This, in turn, indicates the effectiveness of such tests.

According to the results of the survey, more than 60% of students liked this form of control and they indicate an increase in the level of their knowledge, the possibility of using such tests both to control and to consolidate students' knowledge. More than 70% of the survey participants indicated. What do they intend to use Quiz - tests in their future teaching activities. Educational quizzes are effective for testing knowledge, brushing up on the basics of the material covered, or reinforcing a new topic.

The part of the students who participated in the preparation of tests indicated that this contributed to their independent activity, which in turn led to an increase in the level of self-education.

Based on the foregoing, the following conclusions can be drawn:

- The use of tests of the bot Quiz Bot contributes to the improvement of the teaching of the subject;
- Quiz-tests contribute to the organization of independent activities of students;
- Quiz-tests can be used as training simulators to consolidate knowledge;
- Quiz-tests are effective for controlling students' knowledge;
- Quiz Bot is available in the application, does not require additional technical means, since it is possible to enter from smartphones;
- Using the Quiz Bot bot, you can conduct a survey of a large audience and immediately get the results;
- You can easily change questions and enter new questions;
- Quiz Bot boosts help to increase students' motivation to improve their knowledge.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPSS journal belongs to the authors.

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# **From Perceived Job Insecurity Climate to Entrepreneurial Commitment Behavior: Investigating the Mediating Roles OF Opportunity Recognition, Entrepreneurial Intention, Commitment Behavior, and The Moderating Role of Social Network Intensity Among Young Academic Researchers**

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**Abstract:** The current shock that emanates from the novel COVID 19 pandemic has been highlighted as having the potential to eliminate more than 50 million jobs worldwide which may further manifest in an economic environment being characterized by job insecurity. Apparently, as climates that are characterized by a high level of job insecurity makes job prospects more indefinable and unpredictable both for the employed and those that are gearing up to enter the labor market, then it goes home to opine that the perception of this uncertain and indefinable job prospect (job insecurity climate) would also be a major source of worries among students of universities, research institutions, and innovative technology skills acquisition institutes who are eagerly waiting for favorable and profitable school-labor market transition. Though, from an empirical perspective, macro-economic research has identified that economic situations characterized by job and employment insecurity have deleterious effects on consumer spending behavior, individual major life decisions, and the drive for various social psychological problems. Nevertheless, as the effects of this situation have not been examined in the context of a spin-off within academic institutions, this study proposes that such a situation may equally act as a driver through which a profitable entrepreneurial outcome may be achieved by the students in technological and research institutes via the successful commercialization of their research findings after graduation. Thus, it proposes that the possession of a robust level of diverse social network intensity will interact with the perception of job insecurity climate to result in the willingness of students/scientists to engage in the process of entrepreneurial opportunity recognition, leading to entrepreneurial intention, and entrepreneurial commitment behavior after graduation.

**Keywords:** Academic Spin-off, Perceived Job Insecurity Climate, Entrepreneurial Commitment, Opportunity Recognition, Entrepreneurial Intention, Social Capital Intensity.

## **Introduction**

In response to the current wave of changes eclipsing the nature of work, the global economy and world-wide demographics, issues such as global competition, introduction of smart technologies, market flexibility and survival strategies have become a major topic in the strategic literature of organizations (Yeves, Bargsted, Cortes, Merino & Cavada, 2019). In addition to these is the need for organizations to achieve efficiency through a reduction in labor cost: privatization, outsourcing, mergers, acquisition, downsizing and the replacement of long term job contract with low contract arrangement (Kim, Muntaner, Shahidi, Vives, Vanroeleni, Benach, 2012; Lam, Liang, Ashford, & Lee, 2015). All of which have limited the ability for securing sustainable paid employment in addition to the perception for the achievement of this feat (Wisskirchen, Biacabe, Bormann, Muntz, Niehaus, Soler & Brauchitsch, 2017). In particular, it has been revealed that the unemployment trend in Europe has been on increase with full unemployment and temporality reaching 10.6 percent and 13.7 percent, respectively in 2012 alone (Eurostat, 2013) while in the Organization for Economic Co-operation and Development (OECD) countries, unemployment figure rose from 6 percent to 7.9 percent of the labor force in 2014 with considerable variation between countries (Green, 2015).

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In China, “permanent employment is no longer guaranteed and more and more temporary or fixed-term employment contracts have been adopted by organizations (Cheng, 2013). Predictably, the former president of the United States, Barack Obama noted that millions of job would be lost to automation in the nearest future (Miller, 2017). Thus, with the introduction of new technologies, the job tasks of many middle class job holders, and those being occupied by skilled and unskilled workers are being automated thereby resulting in a situation of increasingly job loss vulnerability (Colvin, 2015; Miller, 2017). In consistent with this view, Chui, Manyika , and Miremadi (2017) pointed that the present days technologies have the capability to automate about 45 percent of the job tasks, traditionally carried out by human personnel, and 30 percent of the job positions occupied by them. Furthermore, in addition to this is the novel covid-19 pandemic, with the inherent capability of eliminating over 50 million jobs worldwide (ILO, 2020) and have been identified as a driver for an economic environment being characterized by job and employment insecurity (Sora, De Cuyper, Caballer, Peiró, & De-Witte, 2013; Shin, Hur, & Moon, 2019).

Apparently, as climates that are characterized by high level of job insecurity makes job prospects more indefinable and unpredictable both for the employed and those that are gearing up to enter the labor market (Savickas, 2012), then it goes home to point out that the perception of this uncertain and indefinable job prospect (job insecurity climate) would also be a source of concern among students of universities, research institutions, and innovative technology skills acquisition institutes who are eagerly waiting for favorable and profitable school-labor market transition, most especially in Nigeria, where a second wave of economic recession in three year period has been projected imminently (Economic Confidential, March 2, 2020). While studies have been extensively used to prove that the perception of job insecurity climate results in numerous negative outcomes: job burnout (Aybas et al., 2015) decreased wellbeing (Yeves et al, 2019) intrinsic motivation, job performance, organizational citizenship behavior (Shin, Hur, Moon, & Lee, 2019). Mental, physical, and work-related wellbeing; job attitudes; performance, creativity, and adaptability (De-Witte, Pienaar, & De Cuyper, 2016; Niessen & Jimmieson, 2016; Shoss, 2018). Consumer spending behavior (Lozza, Castiglioni & Bonanomi, 2017); individual major life decisions such as getting married and having children (Lozza et al, 2013).

Of great interest is the fact that this climate of job insecurity has not been examined by viewing it as a potential motivator that could spur spin-off initiatives by students in technical and scientific institutes in which they take on entrepreneurial role to provide economic benefits such as creation of new wealth and employment and the development and renewal of local economy through learned skills and expertise that are applicable in the high-tech sectors (Parente & Feola, 2014). This is even more so as it has been declared that negative factors such as dissatisfaction with a current job, life or one’s current state, the difficulty of finding employment, the uncertainty of employment or difficult economic conditions serve as motivators for an individual to migrate into self-employment from unemployment, employment uncertainty, and unfavorable paid employment (see; the push-pull-mooring theory, Bansal et al. 2005; Moon, 2011). In sum, all these means that the perception of this type of climate may turn out to be a blessing in disguise most especially in times of difficult economic situations.

For instance, since there has been a continued expansion of enrollment in universities and technology skill acquisition institutes, it follows that the progressive increase of graduates every year, and the downward trend of economic growth globally has added increasing pressure on these graduates in their search for real time paid employment (Wang, Tang, Liu, Zheng, Liu, & Liu, 2019). Thus, by implication, entrepreneurship has emerged as a viable alternative for these graduates in the face of fierce competition for the available and limited insecure job positions (Duonga, Nguyenb, Ngoa, Nguyena & Nguyen, 2019).

Academic spin-off has been defined as a new venture that was created by current students or faculty members to exploit research outcomes (Soetanto & Jack, 2016). In the view of Dorner, Fryges and Schopen (2017), it is a commercialized business entity that is created out of outputs emanating from research activities, and usually develop within high tech industries, such as biotechnology, medical technologies, information technologies, and their main activities are related to the transfer of technology and knowledge from University to industry (Bigliardi, Galati, & Verbanò, 2013). According to Soetanto and Jack (2016) its significant benefits includes facilitation of economic prosperity, job creation and stimulating industry competition. Additionally, it has been identified as an important mechanism for regional economic development (Breznitz & Feldman, 2012). With a manifestation of its contribution being clearly shown in such industrial cluster growth areas such as the Silicon Valley in California (Saxenian, 1996), Route 128 in Massachusetts (Saxenian, 1996), and the Research Triangle area in North Carolina (Link & Scott, 2003).

Indeed, it has been shown by the Association of University Technology Managers that American university spin-offs created \$33,500,000,000 from 1980 to 1999 meaning that on average, each spin-off created an

economic value of \$10,000,000 (Rui, 2016). Concerning the indirect economic impact that is being created, each have hired 83 people on average with a cumulative total of 280,000 jobs created by hiring high tech personnel and thus avoiding the loss of talents while also contributing \$5,000,000,000 in tax for the federal government (Yumiko, 2009). In the opinion of Yumiko (2009) an entrepreneurial bulletin published by Massachusetts Institute of Technology in 2009 clearly showed that a total of 25,800 existing companies have been established by its alumni with 3,300,000 people being employed while also creating \$2 trillion each year which is an equivalent of the world's eleventh largest economy as at that time. Also, there were 700 university spin-offs in Canada in the year 2000 generating \$1,400,000,000 in annual sales revenue and 11,000 jobs (Zhang, 2009), while the establishment of spin-off has become the engine of economic growth and a tool to encourage innovation in continental European countries, such as German, France, Sweden, and Norway (Rui, 2016), and other countries such as China, Japan, South Korea, Mexico and Brazil (Jung & Kim, 2017).

Given its enormous strategic and economic importance in creating jobs and rendering economic impact, scholars of entrepreneurship are paying more attention to academic spin-offs as one of the key elements of innovation at national level (Feola et al. 2017a) it has become imperative to have clear knowledge of the drivers that may encourage the successful conceptualization and commercialization of scientific and technological problem solving technique among students and scientists who are potentials for academic spin off in Universities since this question is still largely unanswered (Fini et al. 2017). Accordingly, since entrepreneurial commitment behavior focuses on the successful commercialization of scientific findings, and Parente and Feola (2010) have stated that this kind of behavior does not occur in a vacuum but must work in tandem with other ingredients (opportunity recognition and entrepreneurial intention) as failure to also focus on these ingredients may impede the formation of this type of commitment or at least lead to a weak entrepreneurial commitment for the would be entrepreneur, or may delineate the boundary between the spin-off that die prematurely and those who continue on their development path (Sorrentino 2008; Sanchez, 2008); this study respond to the call by Feola et al. (2017a) and Feola et al (2017b) for researchers to develop a model for examining venture creation by subjects in the academic field based on their academic research by introducing a model that incorporates the perception of job insecurity climate, opportunity recognition, and entrepreneurial intention and proposes that these constructs work together to act as predictor for successful new venture creation based on the results of academic research among scientists in Nigerian and South African Universities and technical institutes thereby providing a succor for the limitation that have characterized most previous researches that have only focused on the performance of spin-over companies (see; Barbara et al, 2013; Corsi & Prencipe, 2015).

Though, studies (e.g; Tan, 2017; Samo & Huda, 2019; Miranda; Chamorro-Mera; Rubio, 2017; Vega-Gomez, Miranda, Mera & Mayo, 2018; Feola et al, 2018) also examined the factors motivating academic entrepreneurship by focusing on the role of government, industry, academia, personal economic and research benefit, it can be vividly observed in their study that the only outcome variable considered was academic entrepreneurial intention and no particular attention was devoted to other processes involved in successful venture creation such as opportunity recognition and entrepreneurial commitment. Thus, as these three construct work together to facilitate an effective, efficient and sustainable entrepreneurial outcome (Sanchez, 2008) an attempt have been made to incorporate them in this study to provide answer to the call by (Samo & Huda, 2019) that future research should include other variables that can influence the entrepreneurial intention of potential academic spin-offs.

Furthermore, by leaning on the social network theory (Burt, 2002; Burt & Burzynska, 2017), it also incorporates social network intensity as a moderating variable in the research model thereby answering the call by Jung and Kim (2018) on the need to incorporate social capital when studying academic spin-off. This is because scientists who are victims of perceived job insecurity climate are more likely to identify entrepreneurial opportunities, develop intention, and engage in entrepreneurial commitment behavior if they belong to diverse professional networks that span across a wide geographical region (Song, 2015).

In sum, our research seeks to make contributions to the literature on academic spin-off in several ways. First, our research makes an impactful theoretical contribution since most previous studies on entrepreneurial intentions make use of the attitude, intentions, and behavior model of behavior by Fishbein and Arjen (1980), and Shapero's Entrepreneurial Event theory (see; Shapiro & Shokol, 1982) in examining the main drivers of entrepreneurial intention. Thus, up till date, there is scarcity of literature on an entrepreneurial intention model that have made use of the push-pull-mooring theory in the explanation of the force behind the engagement of nascent entrepreneurs in entrepreneurial activities. Though, Ojiaku, Nkamnebe and Nwaizugbo (2018) also made use of the push-pull-mooring theory by Bansal et al. (2005) to examine the determinant of entrepreneurial intention, their research was however limited to the intention of undergraduate university students and not those who are involved in high level scientific investigation whose outcome can translate into radical innovation for marketplace disruption thereby pointing to the fact that there is still much that desires to be known in this area.



Contextually, following the recommendations (e.g; Ojiaku et al, 2018; Feola et al, 2018; Samo & Huda, 2019) that future research should also focus on cultural diversity when examining the motivating factor of entrepreneurial intention, this study will add to knowledge by picking students scientist from universities and technological institutions in both Nigeria and South-Africa with the view of achieving cross-cultural comparison. Methodologically, this study also adds to knowledge by answering the call by Vega-Gomez et al, (2018) on the need to overcome the limitations imposed by the cross-sectional nature of previous research on academic spin-off (see; Wang, Lu, & Siu, 2014) by introducing a three wave longitudinal survey as a method of data collection.

Lastly, compared to previous studies in which entrepreneurial intention was used as a basis of predicting behavior, it will also add to knowledge by introducing a follow up survey to measure entrepreneurial commitment with the view of determining if significant relationship actually exists between intention and commitment behavior as many empirical evidence have shown that intention does not necessarily lead individuals to entrepreneurial action (Vega-Gomez et al, 2018; Wang et al, 2019; Botha, Carruthers, & Venter, 2019). Thus on overall, the significance of the study practically is that it will assist stakeholders (government, universities, and research institutes) in designing an intervention program for stimulating an optimal level of sustainable spin-offs most especially in Europe, Asia, Australia and Africa where transfer performance of knowledge still lags behind that of universities in the United States (Audretsch & Göktepe-Hultén, 2015).

## **2. 1 Theoretical Background and Hypotheses Development**

Three key success factors to successful entrepreneurial endeavors are entrepreneurial commitment, entrepreneurial intention and opportunity recognition (Parente & Feola, 2010). While the former refer to the amount of energy that a person invest in creating a new venture, which could be in form of the complex decisions and actions that binds the person to the future exploitation of an opportunity (Parente & Feola, 2010), entrepreneurial intention refers to the “the conscious state of mind that precedes action and directs attention toward entrepreneurial behaviors such as starting a new business and becoming an entrepreneur” (Moriano et al, 2012 pp.21) or the intention of a person to start up a new own venture at some time in the future (Duong, et al, 2019). On the other hand, opportunity recognition has been identified as the ability to filter and refine information effectively and quickly in order to be able to respond to favorable circumstances that could result in a profitable outcome (Wihler et al. 2017) or the perceived means of generating economic value (i.e. profit) that have not been exploited, and are not currently being exploited by others (Baron, 2006).

Going by these definitions, entrepreneurial commitment behavior is described in this study as all the actions and efforts channeled towards the successful commercialization of research findings, while entrepreneurial intention encompasses the willingness of potential academic spin-off to capitalize on discovered market opportunities, and devote time to scientific research to create new venture based on the results from these researches. In addition, opportunity recognition here refers to the ability of the potential academic spin-off to optimize on prior knowledge on customer problems, ways to serve the market, technology, cognitive and creative capabilities, and information search abilities to identify profitable market opportunities. For social network intensity, it is defined as the degree of association between individuals or groups and refers to the networks, reciprocal norms, and resulting trust that people get from their positions in the social structure (Zhou, Liu & Wang, 2020). It is defined as conduits or channels that provide access to people who possess certain resources that may be of interest to the entrepreneur (Newbert & Tornikoski, 2012). Accordingly, Pons, Calvet, Tura and Llescas (2004) stated that it is the nodes which may be in form of individuals, groups, organizations that are tied on a single or many types of interdependence; being made up of people who are brought together as a result of a common interest, shared value or aspirations with a view to foster information sharing or other mutual benefits (Adekiya & Aboysir, 2019); and can be viewed as the cumulative value of strong and weak ties that have been accumulated by an individual over a period of time. According to Lin (2017) it is related to different types of relationships encompassing interpersonal relationships and organizational networks.

By drawing inspiration from the push-pull-mooring theory (see; Bansal et al. 2005; Moon, 2011) which identified negative factors such as dissatisfaction with a current job, life or one’s current state, the difficulty of finding employment, or difficult economic conditions as motivator for individual to migrate into self employment from unemployment or unfavorable paid employment (Segal et al. 2005). It is contended in this study that perceived of job insecurity climate are necessity-driven push factors, opportunity recognition are opportunity driven pull factors, while the intention to translate these opportunities into commercialized product, the actions and efforts channeled towards its successful commercialization and the social, economic, cultural,

personality and political factors that influences this intentions and actions are classified as mooring factors. According to the Push-Pull-Mooring theory, the driving force that exert influence on migrants decision to move from one geographical location to another could be described in terms of a push, pull and mooring factors (Bansal et al. 2005; Fu 2011). In their opinion, Push factors represent a triggering factor at the origin that provides a reason for such migration. It could be in form of poverty, unemployment, low social status, political witch-hunting, rapid population growth, lack of marriage prospect or opportunity for personal development or life threatening natural disasters (King 2012; Bansal et al. 2005; Ojiaku, Nkamnebe & Nwaizugbo, 2018). On the other hand, the pull factors represent those factors which serve as a motive for attraction to targeted destination and therefore serve as a driving force for an individual to leave (Fu, 2011). According to King (2012), Ojiaku, Nkamnebe and Nwaizugbo, 2018); these encompasses better income, job prospect, better education, welfare system, good environment, living conditions and, political freedom. Moreso, the mooring factors may be in form of personality, social, political, life stage and cultural factors that either facilitate or inhibit the decision to leave (Fu, 2011); and accounts for the complexity of migration decisions capable of holding potential migrants back or facilitating their movement to their desired destination (Moon 1995).

Thus in the context of this study, researchers in technological institutes, medical and business schools are expected to become uncomfortable with the current global economic situation emanating from Covid 19 in addition to other structural and technological factors. Since this should result into a perceived negative prospect of finding suitable paid employment opportunities after graduation (push factor); this should compel them to devote more energy to environmental scanning activities which aims to identify business opportunities and ideal markets that are most suitable for the problem solving solutions that emanates from their research activities while in school, or imbibe them with the motivation to invest more resources in the development of these problem solving solutions. As per the mooring variables, these could be classified as those factors that exert influence on the intention of those researchers to translate these plans, projects, and contingencies into workable actions. It encompasses both the intentions, efforts and actions that are channeled into the successful commercialization of these problems solving solutions, and the political, economic, cultural, and social factors which exerts influence on these intentions, efforts and actions, which may be acquired from individuals, groups, and organizational membership (social network intensity) through information sharing or other mutual benefits (Adekiya & Aboysir, 2019).

According to the social network theory (Burt, 2002; Burt & Burzynska, 2017), social interactions are necessary for knowledge and information sharing in that 'most people we associate with also have other peoples who are significant others, and indirectly connected to us. From the constant interaction with the significant others who are directly or indirectly social related to the network, the entrepreneur attains the resources, influence and sponsorships that are needed to launch a new venture (De Carolis et al., 2009; Santarelli & Tran, 2012). Based on the networks approach to entrepreneurship, while entrepreneurs may possess some ideas and skills that are necessary for business start-up, the ability to have access to those tangible and intangible resources, which are scarce and out of their immediate environment may go a long way to be determined by the level of intensity to which are part of, and relates to the members of various social network. Thus, studies have lend a credence to this line of reasoning by providing evidences to support the fact that networks are important because they provide entrepreneurs with plenty of diverse information and access to many resources, business opportunities, and markets (Abou-Moghli & Al-Kasasbeh, 2012; Hoda, Gupta, Ahmad & Gupta, 2021).

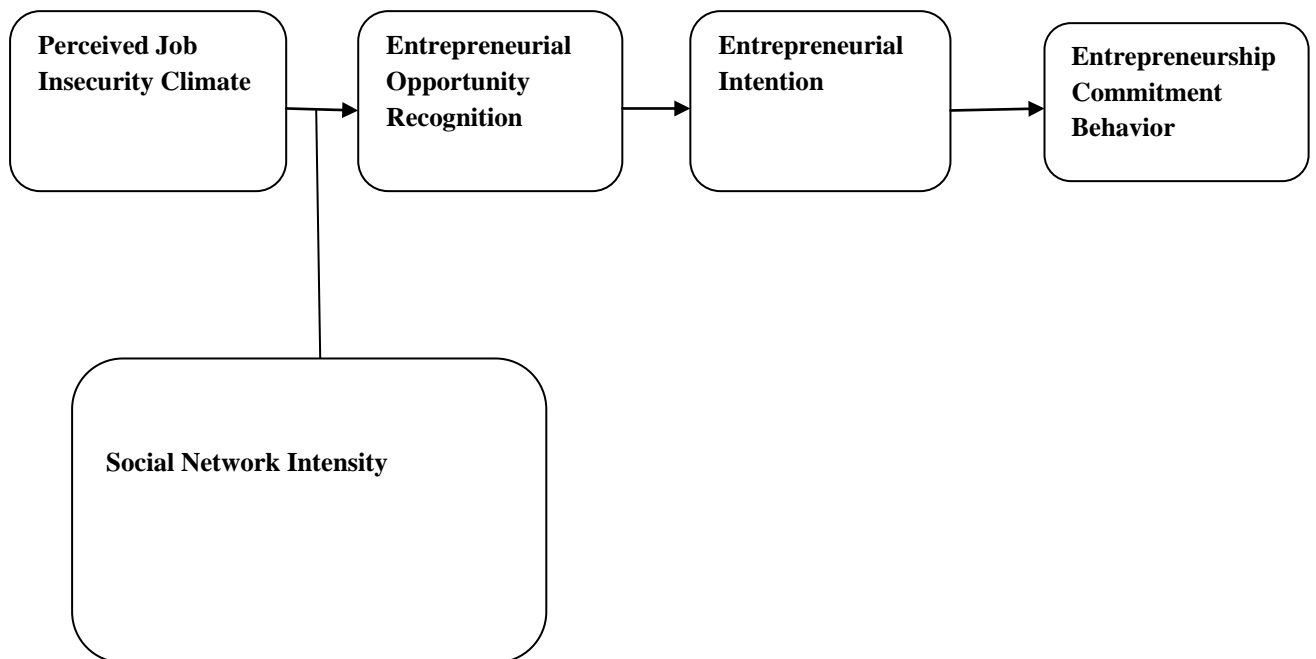
In sum, since it is well known phenomenon that with the recognition of an economically viable business opportunity, nascent entrepreneurs would need to pool necessary resources together to achieve the objective of what could be termed as value creation. Thus, as these resources which could be in form of financial, human, material and intellectual properties may become more accessible to these entrepreneur based on the degree of equal access to broader and efficient social network, it is expected in this study that those young scientists who are acting under the driving force of job insecurity climate to engage in environmental scanning for market opportunities and economic exchanges are more likely to develop the intention to bring these exchanges into reality (Entrepreneurial intention) and also engage in the actual process of bringing them into reality (entrepreneurial commitment behavior) under the condition that they have unhindered access to an efficient and broad based social network platform. In conclusion, since an empirical outcome of a study that focuses on the research model proposed above will assist stakeholders (government, universities, and research institutes) in designing an intervention program for stimulating an optimal level of sustainable spin-offs in research technological institutions most especially within Europe, Asia, Australia and Africa where the performance of knowledge transfer still lags behind that of universities in the United States (Audretsch & Göktepe-Hultén, 2015), it is recommended that the model should be tested in an empirical settings. Thus, on the basis of these, the following hypotheses are brought forward.

### 2.1.1 Research Hypotheses

- I. There is a significant relationship between perceived job insecurity climate and entrepreneurial intention.
- II. There is a significant relationship between perceived job insecurity climate and entrepreneurial opportunity recognition
- III. The relationship if any between perceived job insecurity climate and entrepreneurial intention is mediated by entrepreneurial opportunity recognition?
- IV. there any significant relationship between entrepreneurial intention and entrepreneurship commitment behavior
- V. Social network intensity would moderate the mediated relationship between perceived job insecurity climate and entrepreneurial intention leading to entrepreneurial commitment behavior such that the positive relationship between perceived job insecurity climate and entrepreneurial intention through opportunity recognition will be weaker (vs. stronger) at low (vs. high) levels of social network intensity

### 2.1.2 Conceptual Framework

Based on the literature review and the hypotheses presented above, the conceptual framework below is presented



**Figure 1:** Conceptual Framework of the Proposed Relationship between Perceived Job Insecurity Climate and Entrepreneurship Intention through Opportunity Recognition, Leading to Entrepreneurial Commitment Behavior with the Moderating Influence of Social Network Intensity

## Conclusion

Taking into account the importance of profitable spin-off from higher institution of learning and related research institutes, the significant potential role that is likely to be played by perceived job insecurity climate in motivating this spin-off, the significance of opportunity recognition, entrepreneurial intention as underlying factors through which this effect is exerted, and the moderating role of social network intensity in the relationship, it is clear that an empirical examination of a research model proposed in this study is timely, of great importance and therefore recommended in that such endeavor would aid in advancing an understanding of how to build a framework in promoting opportunity recognition and entrepreneurial intention among young researchers in universities, most especially in times of job insecurity climate. In addition, it would lend an insight into the most desirable level of social network intensity that may be promoted with the view of strengthening this relationship.

## 3 Proposed Methodology

### **3.1 Proposed Research Population/Sample**

Students, who are engaged in active and advanced research such as Doctoral studies (in their final year) in the field of high tech industries, such as biotechnology, medical technologies, information technologies, will be drawn from universities and technological institutes in Nigeria. Thus by employing the proportionate stratified sampling technique, the sample size from each of these institutions would be determined from the sampling frame that would be acquired from the management of the institutions. Concerning ethical issues, permissions would be sought from the management of the academic institution under consideration to conduct the research while the consent of students would be sought by giving them forms that explain the purpose of the study and the rights of the participants to withdraw from the study anytime as at when deemed.

### **3.2 Proposed Research Design**

A four-wave longitudinally designed survey would be employed in eliciting data. During the first wave (time 1) questionnaires would be distributed to sample elements from European and Nigerian institutions. Based on the number of those that returned the questionnaires, another round of questionnaires would be distributed 4 months after in a second round of surveys after matching (time 2). In the third round of surveys (time 3) the total number of students that return questionnaire would make up the sample while another follow up survey (time 4) measuring entrepreneurial commitment behavior would be carried out 6 months later after the graduation of students to find out if entrepreneurial intention indeed predicts commitment behaviors.

### **3.3 Proposed Data Collection Instruments**

Perceived job insecurity climate would be measured by 6 item instrument adopted from Ojiaku et al (2018). Some of the questions are “I perceived that employment opportunities are limited in this country”, “unfair employment practices are high in this country”. Opportunity recognition would be measured by Wang et al 5 item instrument; entrepreneurial intention would be measured by 6 item instrument from Linen and Chen (2009), social network intensity would be measured by 4 item instrument from Wang et al (2019). In measuring entrepreneurial commitment behavior, a 10 item scale adopted from Adam and Alain (2015), measuring continuance commitment, affective commitment and normative commitment would be utilized.

### **3.4 Proposed Method of Data Analysis**

A multiple mediation moderation analysis would be conducted by employing the “PROCESS” macro script (Hayes, 2017) to test all hypotheses. In particular, the mediating influence of opportunity recognition on entrepreneurial intention, and entrepreneurial commitment at different times would be tested by using bootstrap estimates and constructing a bias-corrected confidence interval (95%) (cf. Hayes, 2012).

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# **The Wheel of Exploitation in the Digital-Based Transportation Industry in Indonesia**

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**Abstract:** The digital era has become a momentum where the form of work has changed. This is evidenced by the emergence of the Gig Economy. Gig Economy is a form of work in the economy that is no longer fixated on hours of work. So, has capitalism lost its relevance in today's digital era or has capitalism actually benefited greatly from the changing production process? This article will discuss the relevance of Karl Marx's thinking in explaining technological developments in the digital-based transportation industry. Furthermore, the phenomenon is explained by using the theory of surplus value. This theory can also explain the exploitation process experienced by Gojek drivers.

**Keywords:** The theory of surplus value, exploitation, digital-based industry

## **Introduction**

In his short article, Anwar (2018) states that more than 150 years ago Marx had predicted the emergence of the Gig Economy. Gig Economy is a form of work in the economy that is no longer fixated on hours and hours of work. According to Anwar, working for 8 hours per day will reach saturation point and change. The digital era has become a momentum where the form of work has changed. If so, has capitalism lost its relevance in this digital age or has capitalism actually benefited greatly from the changing production process?

The thesis developed on production always sees that capitalism will continue to change in order to meet the limitations so that capital production continues. By taking the latest case of digital-based transportation, the author analyses the advantages of the Gojek company. In addition, because the process of capital accumulation also directly affects the fate of workers, the next question that must be answered in this paper is how workers experience exploitation.

As mentioned in the first paragraph, the digital aspect is nothing new and unpredictable by Marx. On the other hand, Marx thinks that continuous technological restructuring is very important for capital expansion and capital accumulation (Anwar, 08/08/2018). This is because the capitalist can turn the machine of production that brings profit. In its simplest form, Gojek is a manifestation of that restructuring of capitalism. However, once again, this novelty aspect does not change the basis of labor and capitalist relations in the production of surplus value. The technological dimension in Marx's era is completely different from the phenomenon in today's digital era. However, what is the focus of this discussion is how the current work patterns of drivers work. The models and attributes of their work may be different, but the orientation of capital accumulation continues. Therefore, this paper will focus on proving the accumulation of capital and exploitation of labor hidden in the phenomenon of digital-based transportation.

The dimension of work in its most recent form, such as what is happening in Go Ride, can be explained by the capital accumulation approach. By referring back to the concept of capital accumulation formulated by Marx, we are able to understand the basic logic of the complex process implemented by the Gojek company. This is an important capital in looking at the latest cases of capitalism that have developed so far.

By referring to the theoretical framework of capital accumulation, we can understand that the emergence of Go Ride not to create jobs. On the other hand, Go Ride was born with a certain production logic that is no different from other companies operating in other fields. Their orientation is profit or profit as much as possible. Through this point, we can explain further how companies work in generating profits. Marx not only succeeded in explaining how political economy is in the production of capitalism, but also the historical aspect that allows

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adaptation to more recent cases. Thus, Marx's analysis is still very relevant to discuss the phenomenon of work in the Go Ride case today.

## **Discussion and Analysis**

Under capitalism, the orientation of production is not on the creation of use values, but on exchange values that can bring profit. Meanwhile, to create profit, a certain production process is needed. This is the nature of the production of capitalism. Mulyanto (2012: 108) takes the general formula of the mode of production of capitalism, namely M-C-M'. In capitalism, capital (M) is a value that can enlarge itself. This can be exemplified as follows:

One billion money stored in a barrel is not capital. On the other hand, a million dollars can become capital if it is organized to make a profit. Capital is the money used to buy the means of production and pay the wages of workers so as to produce new commodities (C) that produce surplus value. Marx (in Gerard and Duncan, 2015: 14) defines capital as a "value" that is involved in a dynamic process of self-expansion. A capitalist spends money to pay workers' wages and buy the means of production, then sells the resulting output to cover the initial expenses incurred and earn a profit. Marx defined the means of production as constant capital (c), while labor power was defined as variable capital (v).

As mentioned above, money can be said to be capital if it is organized to make a profit. In capitalism's mode of production, money is the first form of value to emerge in this process. Furthermore, the process of capital production continues as the value of the inputs of production (labor, raw materials, machines and buildings), then, as the value of the commodities produced; and lastly as value for money again after the commodity produced has been sold (Gerard and Duncan 2015: 14). The value of money obtained in the last process is what changes in value. This is in Marx's view formulated as profit (M'). The increase in the value of money that is poured by the capitalists above, according to Marx, is obtained from the exploitation of workers. This labor exploitation process can be exemplified as follows:

A worker who works in a factory should only work for 2 hours to make ends meet in one day. However, in reality a worker is required to work 8 hours per day. The difference in working time of 6 hours is then exploited by capitalists. By purchasing their labor-power, workers are organized to produce commodities which will later be thrown into the market. According to Marx (Gerard and Duncan, 2015: 16) who followed Adam Smith, commodities have a dual character, namely as: (1) objects of use or equivalent to use value and (2) exchange value or value.

In the capitalist mode of production, the labor power possessed by the worker is also a commodity, use value, and value. The use value of labor is labor itself. In this case, the capitalist buys labor to get the right to use labor. The value of labor is the value equivalent of the purchasing power of wages for commodities that workers can buy (Gerard and Duncan, 2015: 20). Labor has properties that other commodities do not have. Meanwhile, the buying and selling of a manufactured commodity can only distribute value between buyers and sellers (Gerard and Duncan, 2015: 21). Before proceeding to another part of commodities, namely the means of production, we should first understand how labor becomes a commodity in capitalism's mode of production. This is because labor as a commodity in the mode of production of capitalism has a fairly complex part. One of these complexities is reflected in the processes and aspects that occur in labor as a commodity in the production mode of capitalism. In the previous paragraph, it has been explained how the workers themselves have a commodity called labor. The labor contained in the workers has a relationship with the capitalist, namely the capitalist. The capitalist pays labor a wage that reflects the working time required for the production of the worker's consumption basket. According to Marx (1954) wages are the price of a particular commodity; labor. Marx explained that workers exchange their commodities and labor for capitalist goods and money where the exchange of values is carried out in certain proportions. A sum of money to pay for the use of labor for a long time (1954: 3). Furthermore, wages will rise or fall according to the supply and demand relationship and in accordance with changes that occur in the competition between buyers of labor (capitalists) and sellers of labour (re: workers) (Marx, 1954: 12). Under the wage system, a capitalist has paid a worker an agreed wage. Furthermore, the product of labor and its value belongs to the capitalist (Gerard and Duncan, 2015: 21).

Historically, the actual appearance of the labor force available for work depended on two preconditions. First, workers must be legally free to sell their labor. This explains the historical hostility to capitalism. Second, workers should not have access to their own means of production, such as feudal common land, so they will have no choice but to sell their labor to the owners of the means of production. This historical appearance of

work is the impact of capitalism's mode of production which exploits labor power. This can be seen in the second point of the explanation above. Say workers work four hours a day, but the average worker can work longer hours to eight hours a day. In this case, the capitalist takes surplus labor for four hours (Gerard and Duncan, 2015: 21). Furthermore, this section will be explained in detail after we describe the second "means of production" after "labor".

In Marx's view (Gerard and Duncan, 2015: 23) relative surplus-value is the origin of most of the important developments in the historical transformation of the organization of work and technology by capitalism. Large-scale industry took a further step to impose a detailed division of labor on the production process. Not only that, the large-scale industry is also transforming the relationship between workers and the production process through the technology and organization involved in this transformation.

In capitalism, commodities have not only value, but also a price. Both are the basis for the exchange of commodities. The legal basis for commodity value is the quantity of human labor needed socially to produce it (Mulyanto, 2012: 85). The exchange price is shown in terms of money. However, going back to the initial statement that the money in question here is not money that is kept under the mattress. Rather, it is money that must revolve in the mode of production of capitalism (M'). Under capitalism, what is classified as productive work is work that produces surplus-value. Meanwhile, unproductive work is work that does not produce surplus-value although of course, many of them are useful in everyday life (Mulyanto, 2012: 124).

Furthermore, Mulyanto explained that this surplus-value is partly used to finance the capitalist and parasitic lifestyles. Some are operated back into the next production process. The process towards surplus-value requires a well-organized process. Throughout its history, capitalists have created institutions for organizing capital according to the level of technological progress and total capital accumulation (Mulyanto, 2012: 119). The goal of capitalism's mode of production is profit (M'). In order to make a profit, every capitalist is always looking for ways to increase the mass and rate of profit. The rate of profit is an index of the profitability of a capitalist enterprise. The rate of profit applies to a company or a branch of production or an area of the economy. The average level of profit in a production branch is a kind of marker of accumulation in that branch (Mulyanto, 2012: 114). To achieve the ultimate goal of production in the form of high profits, the capitalist must be careful in calculating the sector, branch, or economic area that can provide the most profit. This is one of the roots of the instability of the capitalist system that continues to haunt the livelihoods and lives of the working class (Mulyanto, 2012: 116).

Capitalists do not only have to get factories or offices, raw materials, machines and tools, as well as labor. The thing that is no less important is to make these elements sustainable. Therefore, Mulyanto (2012) states that basically capitalism is an anarchic economy. This is closely related to the absence of regulation and planning of activities in total production and reproduction. In it there are many production activities with various goods and services produced, all moving independently. Furthermore, in order for total production and reproduction activities to run smoothly, various businesses that produce production facilities and raw materials must be able to supply the commodities needed both by businesses that produce production facilities and raw materials, as well as businesses that produce means of living.

There are two important things why ride-hailing companies like Gojek are quickly accepted by the public. First, there is an assumption that developed in the community when Gojek and similar companies emerged in Indonesia that this company became a new hope for the community. This digital-based transportation is not well known by the Indonesian people. However, the assumption that the presence of the new company will accommodate a large number of workers is widespread. Here, social media and mass media play a role in sharing news of the success of several drivers in Jakarta with fantastic incomes.

Gojek's offer with flexible working hours, lucrative income, and an unfettered workspace was welcomed by people who have been working under pressure. Gojek is considered to be a new, more humane form of work because it does not restrain drivers. The decision to work is determined by their own abilities. No less important is the requirement to become a Go Ride does not require special skills other than the ability to drive.

Second, the fact that conventional motorcycle taxis that exist so far still have many obstacles. Indiscriminate pricing and no guarantee of safety for passengers are often a complaint for passengers. Gojek fulfils all the ideal transportation needs that urban people want. Gojek comes with affordable pricing for passengers and high and scalable security.

The two reasons above appear to be an initial response to the success of a company that is able to answer the transportation needs of the urban community. However, the political economy motives of the company cannot

be explained logically to this day. Although this is very important because of the emergence of economic inequality between company owners and drivers themselves. However, this inequality is increasingly difficult to explain because drivers are positioned not as workers but as partners.

a. Labor Exploitation

Does this fantastic income occur constantly in all situations? How to understand the fantastic income of drivers with fares that are far from the size of conventional motorcycle taxi fares? How can companies take advantage of this seemingly contradictory situation?

In the previous paragraph, it has been explained how the position of labor as a commodity in the hands of the capitalist has turned into a value-creating variable capital, in this case a service. The role of labor is very important in the process of creating service commodities. Without the presence of drivers, it is impossible for Gojek to run. The wave of public interest in becoming a Go Ride driver is the labor extraction process where Gojek does need workers to support the production system. Similarly, a shoe company needs workers to make shoes in a company.

Ride-hailing companies are a new branch of production in the world capitalist system where the main things are [1] the capital is rotated and [2] the workers who work for them. A new branch of production in any industry requires these two conditions in order to be realized. In other words, the status of drivers here is not as partners but as laborers because there has been a transaction in which they exchange their merchandise (labor) for capitalist goods (money) in a certain working mechanism.

Labor exploitation has occurred since the beginning of this system, namely through complex terms and working methods.

1) Tarif price.

A fare has been determined for drivers with a certain mileage measure. The percentage of profit sharing between the company and the drivers has also been determined through the distribution of 75% (for drivers) and 25% (for companies). The price for drivers on Go Ride is already known by anyone through the application, in contrast to random conventional motorcycle taxis. Drivers do not have the authority to change fares. Standardization of tariffs unilaterally by companies is a form of rationalization so that their services are accepted by the public in the midst of high conventional motorcycle taxi prices. Also, in this context, drivers cannot protest against the company so that the profit sharing is according to their provisions, for example, 80% (for drivers) and 20% (for companies). Here there is a form of exploitation for Go Ride drivers that is not visible. When someone decides to become a Go Ride driver, they enter a certain space with predetermined work and rates and it seems like it just happens.

2) Volume drivers.

By continuing to develop its business sector, Gojek opens up opportunities for anyone who wants to become a Go Ride driver. Companies continue to turn labor into a mass bubble to serve digital orders through available programs. The greater the number of drivers, the greater the competition between them. But the larger the number of drivers is an asset for the company because they have cheap labor and will compete with each other. This mass bubble will be beneficial for the company because even though they do not set working hours for workers – which has the potential to hamper the production chain – they create competition among drivers so that the company's minimum income has been met.

The flexibility of working hours does not mean reducing the workforce which is accompanied by prosperity for drivers. Because in practice drivers will continue to work in more or less the same portion of time or even more because they are driven by the need to earn a large income on the one hand and increasingly fierce competition on the other. This means that the working hours are arbitrary, not erratic. Here we see that there is a determining value which is no longer working hours but the number of orders. With an easy-to-understand explanation: not working means not earning, working more will earn more. Here the mode of production becomes clear along with the blurring of the size of the working hours.

3) Capital.

If in the twentieth century capitalism style was fully issued by the company, then in the context of capital circulation, the ride-hailing company's capital was also borne by the drivers; buy jackets and helmets at the company, motorcycle units, smartphones + internet network, capital for top-up (credit wallets).

Capital for top-up must continue to be provided by drivers as long as they want to work. The capital for this top-up is a measure where the driver will be adjusted before picking up passengers. If the top-up funds in the credit wallet are large, it will be a priority for the company. This means that they will get more passengers with longer distances. On the other hand, if the top-up funds in the credit wallet are small, Gojek will not provide much access.

4) Algorithms.

Conceptually the algorithm played by the company through the application is to operate the work system. However, sociologically it has a function to control and punish drivers. It has been mentioned above that people assume that the working hours of drivers are completely determined by their own needs. However, what not many drivers know, the algorithm works to detect which drivers are rarely active and which have high flying hours. For drivers who rarely work the algorithm will penalize a deduction of profits which is often without the driver's knowledge.



Figure 1 Example of a profit discount

b. Capital Accumulation

The accumulation of capital is the ultimate goal of the capitalist's machine of production. This paper does not discuss in detail how the accumulation process was created. Of course, because of limited time and place to discuss here. However, we will outline some important points regarding the profits of these capitalists.

Corporate profits can be obtained from two directions. First, from the percentage they charge drivers (25%) to finance operations. Various other services such as Go Food, tickets, hotels also provide benefits for Gojek. The balance top-up paid by the driver to Gojek before work is also a distinct advantage because the collected funds can be managed as a deposit.

Second, cooperation. Let's take a look at some of the advantages and potentials of the Gojek company from the collaboration. [1] Cooperation with internet network providers, [2] Automotive companies, [3] Smartphone companies, [4] FinTech companies, [5] Cooperation with shopping centers (malls) and [6] Information data assets both drivers or users. Some indirect advantages can also be added here; Gojek does not need to pay insurance for drivers, motorbike maintenance fees are charged to drivers.

[See image below].

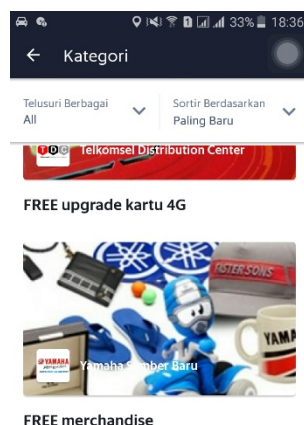


Figure 2 Cooperation with automotive companies

If we look at it critically, this form of cooperation does not make sense because it is the driver who spends the capital to buy a motorcycle unit. Likewise with the example of an internet provider used by drivers but the benefits of the cooperation flow to Gojek. Drivers do not feel the forms of cooperation between various companies. In other words, drivers are being blackmailed into buying their own production equipment but the fruits of cooperation between companies are enjoyed by Gojek.

## Conclusion

From the explanation above, it can be seen that the Go Ride system is very profitable for the Gojek company. On the one hand, the existence of drivers is recognized as very important for the company. However, they actually experience exploitation through a complicated system. The gap between the two is unavoidable in the digital-based transportation capital production process.

## Recommendations

Based on the description above, the state needs to establish regulations that strictly regulate the rules for digital-based transportation in Indonesia. This regulation is a reference that can be used by all companies and related institutions in solving problems related to digital-based transportation.

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# **Education Disparity in Aspects of Digital Transformation and Gender in the Covid-19 Pandemic**

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**Abstract:** The COVID-19 pandemic has had various impacts, especially in the education sector. The picture of educational inequality is increasingly visible between the rich and the poor in ownership of digital commodities to support teaching methods during the pandemic. Inequality in education also occurs in the gender aspect, in community groups who believe that education and child care are the responsibility of a mother or a woman. This article uses a literature study to discuss educational inequality in aspects of digital transformation and gender aspects. The conclusion in this article is the importance of equal access for all groups of people. In the digital aspect, it can be seen that there are differences in ownership of commodities which are considered as learning support tools. Many things arise from this inequality. The COVID-19 pandemic has put women of all ages who are confined in a patriarchal culture to an additional burden, the decline in productivity coincides with the blurring of public and private spaces when the trend of work shifts to work from home.

**Keywords:** Pandemic, Education, Disparity, Digital, Gender.

## **Introduction**

The younger generation as the successor of a nation will determine the progress of a nation in the present and in the future. A quality education system produces a quality young generation as well. It is impossible if the acceleration of the nation's progress can be realized in the future without being supported by progress in education. Education is an investment and long-term asset that is very valuable and very valuable for the younger generation who will determine the progress of a nation.

Increased competitiveness and competitive advantage in all sectors, including in education, is the impact of globalization which is the biggest challenge for the Indonesian nation today due to limited time and cost in providing education, requiring an innovative learning system based on information and digital technology. In this case, the media as a means of presenting ideas, ideas, and educational materials. Basically, education is a process of communication and information from educators to students, and vice versa.

The process of communication and information contains educational information, which has elements of educators in it (Oetomo and Priyogutomo, 2004). Education is the most important and noble investment for every society, especially for a nation that is developing and building its country. The development in question can be carried out by humans who prepare it through education, and aims to achieve the essence of education itself. However, over time, inequality in education often occurs, especially during the Covid-19 pandemic. The inequality that occurs is in the form of inequality in communication and media (Izzatin, 2016). The COVID-19 pandemic has made new teaching methods a distance learning that requires good communication between students, parents, and schools. This is due to the long distance and the virus that does not allow students, teachers, and parents to meet face-to-face directly and continuously. Zoom, google meet, and whatsapp are the most widely used media in distance learning during the pandemic. On the other hand, between parents and schools, there are more consultations, discussions about student learning progress during distance learning or even planning for the continuation of student education after graduation.

## **Method**

The analysis in this article is to use a literature study which is a series of activities related to data collection methods through reading and recording, and managing research materials (Prabawati et al., 2018). Literature study was conducted by searching books, articles, national and international journals. The library sources used in this article are adjusted to the title of the study on Education Inequality in aspects of Digital Transformation and gender during the Covid-19 Pandemic Period.

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## **Discussion and Results**

### **Analysis Results Education Inequality in Digital Transformation**

Provision in educational facilities is determined by the level of government spending. The higher the government budget in the field of education will improve facilities, access, and produce quality education so that it will improve the quality of a nation's education. The Indonesian government budgets 20 percent of the State Budget (APBN) for education costs (Todaro and Smith, 2011). In 2012 the Literacy Rate (AMH) for a population of 15 years in Indonesia describes the conditions that occur in society in the form of people's ability to read and write Latin letters and other letters (BPS, 2012). While the BPS data from 2008-2017 AMH the Indonesian population has always increased, this is important for education in Indonesia, because the increase in AMH illustrates the public's awareness of the importance of education getting better because of the people's increasing reading and writing skills. In addition, research conducted by Rondong (2009) shows that AMH has a significant effect in increasing school participation at the junior secondary level.

The world of education is currently getting a very valuable experience, the educational process is usually centered in a building called a school, with the Covid-19 social distancing, the learning process has finally moved to being in students' homes based on internet connections. This is a very rare event caused by the Covid-19 outbreak. The process of student learning activities will at least be fully accompanied by parents, most of whom are also carrying out the work from home method in their work. In this event, a momentum emerges, where parents will meet with their basic obligations again as the main educator as well as the person in charge of the educational process of their children. Previously, many parents who had various work matters gave full authority and trust to the school as a foothold in the educational process for their children. In this case, there is also a double burden for women who are working mothers but also have to be faced with the responsibilities of education and child care which are also carried out from home. The role of science and technological innovation for economic progress, welfare of life, and human civilization has made thinkers, educators, and economists begin to realize that economic development does not only rely on the strength of capital and labor as the main factors but also essentially depend on the development of science and technological innovation. As a driving factor for economic and industrial progress, capital remains important but the development of technology-based science that can give birth to new ideas and products is also a determining factor for human welfare and civilization (Leadbeater, 2000: 233). Therefore, the importance of the role of science and technological innovation, the need for the development of a technology-based science also needs to be carried out in a democratic, open, full of spirit of curiosity, and courage to face the challenges of the needs and expectations of the global community.

Stiglitz (2013) says that the impact of advances in science and technology on change and development has given rise to a number of fundamental questions about social injustice. This can be seen from the fact that there is a large gap in terms of welfare that occurs, not only between rich and poor countries, but also between groups of people in the same region and country. Therefore, Stiglitz encourages national and global leaders to continue to make better policy formations at the national, regional and international levels to respond to the various impacts of changes and progress that are currently happening.

Giddens describes globalization as a process that has changed the world. Meanwhile, Ritzer sees globalization as a process of spreading the void. In addition, Ritzer sees the phenomenon of globalization as a phenomenon that not only brings changes in the economic field, in the form of global capital, but also socially and culturally (Azkia, 2019).

As an example of this digital inequality, it can be explained in the author's personal experience through the change in learning media which from the beginning used paper, switched to using media such as documents on a computer (paperless). In the beginning, this was not an easy thing, due to the constraints in the ownership of the commodity that encouraged such access. This is also felt by most people. Moreover, the term "technological stuttering" appears which is a stigma for those who do not master technology. It is no secret that there are still many Indonesians who live below the poverty line. It takes a large amount of money to be able to enjoy a good quality education. Therefore, this is one of the triggers for the globalization of education that has not been met by all circles of society. For example, when sitting in high school, during Informatics and Computer Engineering lessons, students at school are instructed to bring their own laptops. As a result, it can only be done by those who have it. In addition, what often happens is that class seminars are offered outside the school which are held to attract the sympathy of students to join. These classes are usually language training tutoring



classes, or other courses that tend to be expensive. In other words, those who are advancing are advancing, and those who are marginalized will be increasingly eroded and drowned in the increasingly swift currents of globalization that can drag them into the gaps and abyss of poverty. The upper class people send their children to luxury schools at a time when the economically weak people have to struggle even to send their children to ordinary schools. This inequality can trigger jealousy which has the potential to become social conflict. Improving the quality of education that has been achieved will also be in vain if social turmoil in society due to disparities due to poverty and injustice is not suppressed early on.

### **Educational Inequality in Gender Aspect**

The basic problem that has occurred so far in the development of women's empowerment is the low participation of women in development, in addition to the existence of various forms of discriminatory practices against women. The low quality of life of women occurs in various lines of life, including socio-cultural, environmental, educational, health, economic, and political. Disparities in gender still often occur in all aspects of people's lives, there are still gaps in the benefits of development outcomes for women against men related to basic human needs to obtain work, education, and health. This is a fact, despite considerable progress in gender equality today. The nature and level of discrimination vary widely in various regions or provinces in Indonesia (Agnes, 2019).

In addition to the gap in technology, in education there is also a gender gap that causes discrimination. In general, gender discrimination in the employment sector is motivated by the existence of erroneous gender beliefs in society. The gender role as a form of social provision is believed to be a nature that causes social inequality and this is very detrimental to the position of women in various social communities in education, work, socio-cultural, political and also economic. According to early history, the division of labor, both biological and gendered, between men and women was considered to have equal value and balance (Khotimah, 2009). Equitable opportunities in the education and employment sectors for each gender have a positive impact on the competitiveness of a country or region in increasing economic growth. Women's productivity can also be increased with ease of access to technology. In addition, the effect of measurement values also has an impact on gender disparities. There are many types of women's work that are not included in the System of National Accounts (SNA). As a result, the alternative of household labor (invisible) to the labor market (visible) still does not increase productivity capacity. The results of this measurement have regulatory implications (measured or not) and economic output does not change (Agnes, 2019).

### **A. Conclusions**

Thus, this article summarizes educational inequality in two aspects, namely digital transformation and gender aspects. In the digital aspect, it can be seen that there are differences in ownership of commodities which are considered as learning support tools. Or other than that access to foreign language skills which is currently required by the labor market. Many things arise from this inequality. As stated at the beginning of the article that seeing the importance of the role of science and technological innovation, the need for the development of technology-based science needs to continue to be carried out in a democratic, open, full of spirit of curiosity, and courage to face the challenges of the needs and expectations of the global community. Meanwhile, in terms of gender, women tend to be disadvantaged more than men. The COVID-19 pandemic has put women of all ages who are confined in a patriarchal culture to an additional burden, the decline in productivity coincides with the blurring of public and private spaces when the trend of work shifts to work from home. gender perspective as an integral part of national development has an important meaning in an effort to realize a balanced partnership between men and women or to realize gender equality and equivalence in various sectors of life and development. In the higher education sector, female teachers are vulnerable. The decline in productivity occurs as the private space and public space are blurred when the work mode shifts to work from home.

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# **Intellectual Potential of the Future as a Result of the Present Work of University Teacher**

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**Abstract:** The article deals with the role of a university teacher as the creator of the future of his students. At the beginning of the article, there is a short description of the world in the twenties of the 21st century. It describes the main issues of this period – pandemic situation, war disasters, and absurd state of the environment. Then the article continues with the vision of the future, the role of human beings in it, and especially the role of a teacher as the person who may influence the big majority of future mankind. Special emphasis is given to his well-being which comes from his own conscience and convictions and is always associated with rational activity. The teacher helps his students to understand who they are and who they can be. A good teacher has a strong influence on the development and future activities of his students. In the confrontation with the energy of youth, the teacher across the various education systems is the source of the search for strength and dignity of man. Human freedom is linked with human responsibility. In this understanding of the union of freedom and responsibility, the place of the teacher is irreplaceable. Today and in the future.

**Keywords:** University teacher, students, future, understanding and responsibility

## **Introduction**

As a person began to realize himself, the extent of his individual responsibility, he naturally began to protect the most vulnerable and weakest – especially his children – in the context of belonging to the environment. This need for protection has resulted in an enormous care for the offspring, manifested in an effort to pass on to the young generation the wide potential of their own experiences so as to enable them to avoid the inconveniences, failures and painful losses of the older generations. The love of parents and the need to protect the young generation in the continuous passing of time gradually acquired an institutionalized form – across the whole world and across different civilizations, educational institutions began to emerge, the main potential of which consisted in the adequate and desirable preparation of the young generation for the future. Educational institutions passed on the best and most meaningful of contemporary knowledge to young people so that everything bad and everything that can harm a person is minimized, or it didn't happen again.

Does this premise still apply today? Is school as an institutionalized tool a factor in creating a meaningful future for the young generation? Or have schools become just a pragmatically necessary way for an individual to function through positive economic consequences? Is and can today's school be a suitable and meaningful compass, a solid point for creating the future of the young generation?

## **Really knowledge society?**

What must the school be like, or what should a school be today, so that compared to the information and communication world of social networks, with millions or billions of users, will it still be the "pillar of the quality" of the future? Is the present we live in a confirmation that education is primarily intended to help man in the fight against any form of human evil, violence and absurd failure witnessed by previous generations? Are there educational institutions or are the teachers who address and concretely fulfil the mission of the educational institution, sufficiently and well prepared to be a balanced stimulus of social media, whose basic characteristics are anonymous indifference, amateurism, ignorance of traditions and, above all, significant economic profit? Are current teachers sufficiently prepared to motivate young people not only to excellent professionalism, but also to civic responsibility, to the inevitable, long lost harmony with nature, to respect for goodness as a pillar of human existence, and last but not least, to human humility?

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We are comparing the students' mathematical literacy, reading literacy, science literacy, etc. in the global success rankings. Can we measure "human literacy" in schools? But the most importantly – do we want to measure it? Are we ready to talk about it? Do we want to find answers to the questions why the world works in such absurd superstructures as we witness in our everyday reality?

At the threshold of the new millennium, we developed the idea of a "knowledge society" with knowledge being the most precious commodity. Is it not just our feeble attempt to cover up the real value system represented by money and mammon, a system from which human belonging and mutual respect or responsibility have almost completely disappeared? Does the terminus technicus knowledge society also apply to young educated people who do not know the historical background of their nation or country at all?

Because precisely ignorance of the historical context will allow everything bad that previous generations went through to return again. Evil never enters the life of an individual or society directly, it is modified into the most diverse, often very tempting, forms. Only timely detection of evil and its identification based on the past experience of previous generations makes it possible to protect the upcoming, young generation. The young generation can only protect itself from what it knows. The ossified, mutilated, stolen memory of the young generation, their faded or distorted image of the past, enthusiasm for the present with a complete absence of interest in the past resulting in indifference to traditions suits all those who desire to control and manipulate.

A real knowledge society can only be built by teachers who create the required system of knowledge and abilities in their students, but who also create and patiently build respect for wisdom and demanding intellectual activity in students. By respecting the wisdom of the students, the teacher leads the students to an understanding of authentic human freedom, to the understanding that true freedom consists above all in mutual respect and understanding of mutual dependence. At the same time, the authentic freedom is the way to the realization that the pillars of a knowledge-based society cannot be measured by economic or financial parameters. The knowledge society is only open to those who are determined to think. The knowledge society is first of all the search for harmony – the harmony of man with nature, harmony with himself, but also the search for harmony in the absurdly unbalanced areas of this Earth.

Only then can we truly claim to be a knowledge society, when our efforts will move in this direction, when we will consciously begin to erase the vast differences in the quality of life on this Earth. When solidarity stops being a journalistic cliché, but becomes an integral part of each of us as a human struggle for a better world. Solidarity with the hungry, thirsty, hypothermic, solidarity with those dying in senseless war conflicts, solidarity with the sick and last but not least, solidarity with those who were not allowed to get an education. Solidarity makes it possible to minimize national, religious, geographical and other differences in perception, but it maximizes the desirable attitude towards human pain, towards human humiliation or suffering, towards losses. Interpreting this message and meaningfully cultivating young people in this direction is perhaps the most important mission of contemporary teachers.

Therefore, teachers at all levels of schools decide on the course of education and its qualitative result – the education. Didactic literature clearly defines the results of education in the form of knowledge, skills or competence. The added value of education can be determined precisely by comparing skills and education. Capabilities allow and enable each individual to do certain things and education does not allow us to do certain things. And especially this conscious distance and self-reflection is the determinant of the strength of every decent society – the dominant place in such a society belongs to educated people, whose behavioral attributes naturally accumulate in themselves not only solidarity, love, peace, truth, etc. but also natural boundaries limiting human actions.

John Dewey already at the beginning of the 20th century, in his theoretical reflections on pragmatism in education, identified education with philosophy. According to him, philosophy can be defined as a general theory of education: "If a theory makes no difference in the educational endeavor, it must be artificial. The educational point of view enables one to envisage the philosophic problems where they arise and thrive, where they are at home, and where acceptance or rejection makes a difference in practice. If we are willing to conceive education as the process of forming fundamental dispositions, intellectual and emotional, toward nature and fellow men, philosophy may even be defined the general theory of education". For more than a hundred years we have known that the education consists of cognitive and emotional prerequisites, and the educational process consists of their awakening, formation, and cultivation. This entire process is completed by self-reflection with the expected result of correcting one's own behavior. Teachers are actually (should be) the long-term, persistent compass of this correction. The driving force behind this correction is the constant asking of questions and the search for answers. The answers are sometimes direct and explicitly defined, other times implicitly coded, and there are situations when the answers are not, or they cannot be.

But the process of asking questions is important, which contributes to the cultivation of self-control and self-criticism. According to Socrates, self-control and self-criticism are essential attributes of an educated and virtuous person. Thus, the teacher cultivates the personality of the student through adequate dialogue. For meaningful cultivation, or meaningful feedback, is desirable that students' personalities meet two prerequisites: that they have respect for consistent critical thinking and that they are meaningfully motivated to study. Both one and the other are, unfortunately, rather an exception in today's schools. The more challenging it is for today's teachers, the more important it is to reflect this fact in teacher training, so that the mission of teachers to participate in the meaningful creation of the future of their students can be fulfilled.

## **Conclusion**

*The only certainty is uncertainty* – Michel de Montaigne's idea taken from his Essays perhaps best characterizes the future of students. Teachers are not supposed to give guidelines and set out clear directions or concrete instructions for action during education. Teachers have to ignite a spark of courage in their students in the uncertainty and not knowing the future. Courage that does not only fulfil the ambitions of one's own success and selfish ego, multiplied by intellectual blindness towards the near or far surroundings, towards the contemporary world with all its clearly defined failures and transparent tragedies. It should be courage radiating from an inner worry that calls for change. Courage calling for change bearing the stamp of solidarity and tolerance. Courage to clearly name failures and try to reverse their impact. The courage to make such a change, in which human freedom will be above all a binding and infinite measure of duty.

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# Problem of Simultaneous Regional Head Election Budgeting in Indonesia

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**Abstract:** Simultaneous regional head elections (simultaneous Pilkada) was designed by Indonesian Government as a correction to the previous the direct regional head elections. Simultaneous pilkada aimed to increase efficiency of the pilkada budgeting in 34 provinces, 416 districts, and 98 cities. However, based on the evaluation, the costs of the simultaneous pilkada are higher than the previous pilkada. The study aimed to analyze the factor causing the high cost of simultaneous pilkada and to analyze the differences of simultaneous pilkada budgeting among regions. The study was designed using qualitative methods and supported by secondary data. Data were collected through focus group discussions and in-depth interviews held in 15 provinces and 10 cities. Secondary data collection techniques were obtained from General Commissions Election at the central and regional levels. The study found that there are two main factor causing the high cost of simultaneous pilkada, as follows (1) Lack of election management, namely, the absence of synergy in pilkada implementation, There is no the honorarium standards set up by local government, The limited capacity of local government preparing the logistics procurement and its distribution, and lack of budgeting efficiency on provision of campaign materials by KPU and socialization. (2) Geographical factors, especially in remote region that limited of accessibility. There are disparities in election costs between provinces, between regions within the same province, and between regions in Java and Outside Java.

**Keywords:** Simultaneous regional head election, Budgeting, the Problem .

## Introduction

Local government has the potency to practice democracy because the decentralization process allows more responsiveness, representativeness, and accountability (Hidayat, 2019). Indonesia has applied a democratic system in its regional government, it can be seen in the implementation of direct regional head elections (pemilihan kepala daerah or pilkada). During the New Order Era (before 1999), the pilkada was top down basis, regional heads were chosen by the central government. During the reformation Era (1999-2004), regional heads were elected by the Regional People's Representative Council (DPRD). Since June 2005, direct elections have been held in 34 provinces, 416 districts, and 98 cities. Direct Pilkada is an effort to break the oligarchic chain of political party leadership, increase citizen participation, present regional leadership on a bottom-up basis, eliminate money politics, and create executive legitimacy in local government (Haris, 2017).

In practice, direct local elections have faced problems (Simamora, 2011). In the political perspective, centralized candidacy is one of the main factors causing the very high cost of politic electoral (Aminah et al., 2020). In the local government budgeting perspective The inefficiency is a crucial problem was the high cost of local elections (Fitra, 2010). The causing factors of the high cost of direct elections were unclear campaign finance regulations, weak supervision of candidate assets, and a lack of regional budget understanding (Aziz, 2016).

To create an efficient regional election budget, the government and the House of Representatives (DPR) have designed a simultaneous regional election schedule (Sadikin, 2016). However, the simultaneous Pilkada was considered a failure, because the simultaneous pilkada budget increased significantly. In 2015, the need for a budget for 269 pilkada was Rp. 7.1 Trillion, 2017, for 101 regions was Rp. 4.2 Trillion and in 2018, for 171 pilkada was 17.7 Trillion (Ibrahim et al., 2020).

Table 1 the Simultaneous Pilkada 2015, 2017 and 2018

Year	Budgeting (Trillion)	The Simultaneous Pilkada			Total
		Province	District	City	
2015	7,1	9	224	36	269
2017	4,2	7	76	18	101
2018	17,7	17	155	39	171

Source: Ibrahim *et al*, 2020

Based on the back ground, the study aimed, first, The study aimed to analyze the factor causing the high cost of simultaneous pilkada. Second, to analyze the differences of simultaneous pilkada among regions in Indonesia. Conceptually, the urgency of local elections from a political perspective is in line with the aim of decentralization. The objectives of decentralization for the benefit of the central government include, (1) Political education; (2) Providing leadership training; (3) Creating political stability. Meanwhile, the objectives of decentralization in terms of local government interests include (1) realizing political equality, (2) ensuring local accountability, and (3) creating local responsiveness (Smith, 1985). Decentralization is linked to the purpose of the pilkada as an instrument of democracy building at the regional level. Pilkada provides space for community participation in choosing their leaders (Governor, Regent, and Mayor). According to Diamond, elections as a space for democratic development include strengthening political society, economic society, and strengthening cultural society. Democracy development also includes strengthening civil society (voice, access, and control), creating a neutral, provisional and usable bureaucracy, strengthening the rule of law, as well as economic and political institutionalization (Diamond, 2008).

Regionl head elections (Pilkanda) in Indonesia required a large budget. The Pilkada budget is defined as the costs incurred by the local government to carry out various activities by the organizing agency (Regional General Election Commission-KPUD) and other institutions that carry out the pilkada stages. The election budget, like the health and education budget, comes from the people. Therefore, the principle of efficiency must be the basis for preparing the regional election budget (Zetra, 2015). Efficiency is defined as the principle of organizing elections that emphasizes prudence in making election planning on target (Electoral Management Design: Revised Edition-IDEA, 2014). In addition to being efficient, the implementation of elections must also be designed to be effective. This means, that the implementation of the election stages does not take a long time, it adds to the budget burden. Effective in pilkada means that people have enough time to know the candidate, establish interactive communication, and understand the vision and the program proposed by the candidate.

Previous research on the financing of regional head elections by the National Secretariat Fitra in 14 provinces/regencies/cities in Indonesia analyzed the pilkada budgeting which provides a great opportunity for actors in the regions to carry out the political process. This research found that there was a politicization of the regional budget. For example, the incumbent influenced the Regional Revenue and Expenditure Budget (APBD) for their political purposes. Koeswara et. al., (2014) compare the Pilkada budgeting in Bandung Regency and Solok City, the problem between the two regions is the long budget process. This caused the pilkada stage to be delayed (Koeswara et al., 2014). A A study conducted by the Democracy Institute focused on the dynamics and problems of financing the simultaneous regional elections in 2015 and found that the 2015 regional election budgeting mechanism was inefficient. Mackic (2013) has studied the financing of local elections at the municipal level in Croatia. This study examines the budgeting cycle at the before, running, and after stages. The study found that the incumbent's role was very dominant in the local election budgeting cycle, such as increasing the number of civil servants and reducing personnel expenditure (personnel expenditure) (Mackic, 2014). Research the local election budget in Croatia, Kopríc et al., (2015) found that the local government did not provide the regional election budget at the county level, however, the budgeting from the central government, therefore, regional head elections at the county level in Croatia were often colored by the intervention of the Central Government (Kopríc et al., 2015).

## **Method**

Study was designed in qualitative methods, supporting by secondary (Cresswell, 2013). The data were collected from 15 provinces that held local elections, namely: (1) Papua; (2) West Papua; (3) Maluku; (4) NTB (5) Central Sulawesi; (6) East Java; (7) Central Java; (8) DIY; (9) West Java; (10) DKI Jakarta; (11) South Kalimantan; (12) North Kalimantan; (13) Riau Islands; (14) North Sumatra; and (15) Nangroe Aceh Darussalam (NAD). The research location had considered the characteristics of Java and Outside Java as well as the representation of the big islands in Indonesia. The primary data collection techniques are focus group discussion (FGD) and in-depth interviews. FGD participants including (1) Pilkada organizers in Provinces and Regencies/Cities; (2) Pilkada supervisors in the Province and Regency/City, (3) Regional Governments who knowing the Pilkada budgeting (4) The experts. Secondary data is sourced from reports of government agencies regarding the regional head election budgeting. Processing and analyzing data using descriptive analysis techniques with NVivo 11 software. The steps of qualitative data analysis techniques are as follows: (1) Perform data reduction; (2) Data presentation to see the description of the regional election budgeting problem (3) Conclusion.

## Result and Discussin

### The Factors Causing of High Cost of Simultaneous Pilkada

Based on the data in the research area, there are 5 largest components of simultaneous regional election financing as follows, first, the honorarium (West Java Province and Jogjakarta City); second, logistics procurement and distribution (Bandung City and Cimahi City); third, campaign facilitation (West Java Province, Bandung City, Cimahi City and Batu City); fourth, socialization and technical guidance (West Java Province, Bandung City, Cimahi City and Batu City); and fifth, the formation of ad hoc bodies namely PPK, PPS, PPDP and KPPS (in Batu City and West Java Province), presented in Figure 1. This finding is in line with a survey by Dalilah et al in 2018 which found that the largest cost components in the regional head elections were socialization costs (meetings), operational costs, witness fees and campaign funds (Dalilah et al., 2019).

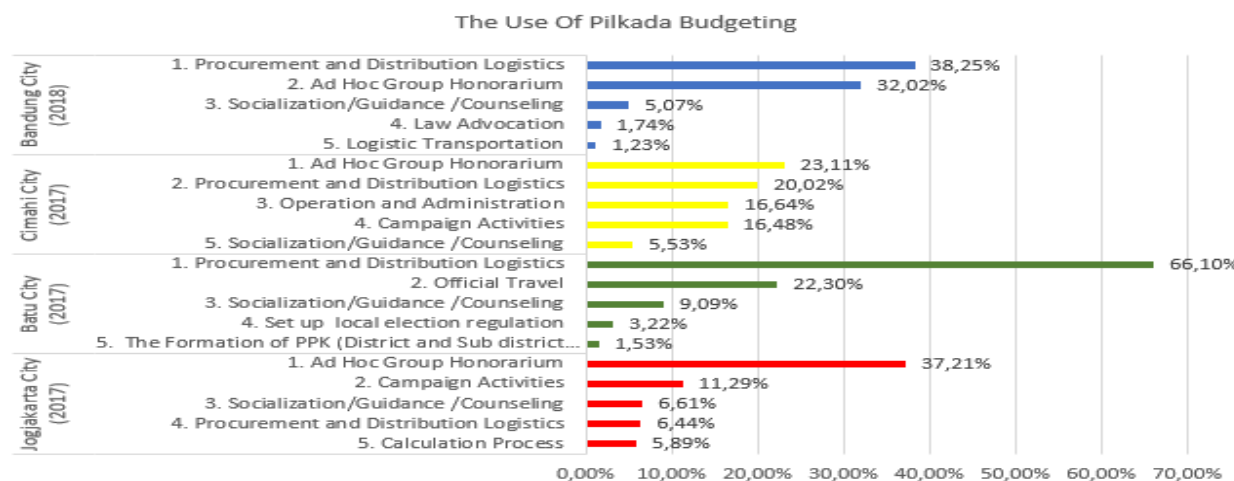


Figure 1 the use of pilkada budgeting

The main factor causing the high cost of regional elections is the lack of synergy between regions. Even though the provinces and cities are in the same area and the regional head elections on the same day, both of them carry out the simultaneous pilkada separately. For example simultaneous pilkada of West Java Province has chosen governors on June 27 2018, on the same day, the City of Bandung has held elections to elect mayors on June 27, 2018. They carried out 20 stages of regional head election activities separately. The implication of the implementation of the pilkada separately caused high costs. Budget efficiency occurs when the simultaneous local elections are carried out in synergy way by the two local governments (West Java and Bandung City) it will save budget for all activities, including the formation of committees and working groups (pokja), socialization, technical guidance, determination of honorarium, and procurement of ballots.

The number of working groups has implications for the honorarium. For example, at the campaign stage. There are ten members of the campaign pokja in Bandung, and 14 members of the West Java Province. Both West Java Province and Bandung City have paid honorariums. Therefore, campaign costs will be efficient if the Province of West Java and the City of Bandung conducted the Pilkada simultaneous on a day and in synergy way.

Table 2. Honorarium of working group of campaign in the Bandung City

Description	Month	Honorarium.	Total
Pokja of Campaign			93,000,000
Director	5	2,000,000	10,000,000
Responsible Person	5	1,800,000	9,000,000
Chairman	5	1,500,000	7,500,000
Secretary	5	1,300,000	6,500,000
Member ( 10 )	50	1,200,000	60,000,000

Table 3. Honorarium of working group of campaign in West Java Province

Uraian	Month	Honorarium.	Total
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Campaign Working Group			136,000,000
Director	5	2,400,000	12,000,000
Responsible Person	5	2,000,000	10,000,000
Chairman	5	1,700,000	8,500,000
Secretary	5	1,500,000	7,500,000
Member ( 14 person )	70	1,400,000	98,000,000

On the other side, there are differences in honorarium standards between regions, even within the same area (West Java Province). There is a difference in the honorarium of Pokja (the working group). For example, a director of working group campaign in the city of Bandung take the monthly fee is Rp. 2,000,000. Meanwhile, directors in West Java Province amounted to Rp. 2,400,000 (Tables 2 and 3). The difference in honorarium standards applies to all the member of the pilkada organizing committee (KPU) (Table 4).

Table 4. Differences of honorarium standards of member the pilkada organizing committee (KPU)

Budgeting Organizers	Bandung City	West Java Provinsi
	Unit Cost	Unit Cost
Budget Authority (Pengguna Anggaran)	1,850,000	
Budget User Authority (Kuasa Pengguna Anggaran)	1,580,000	6,330,000
Commitment Making Officer (Pejabat Pembuat Komitmen)	1,530,000	6,140,000
Verificator (Pejabat Penandatangan)	1,250,000	3,620,000
Treasurer expenditure (Bendahara Pengeluaran)	1,090,000	3,160,000
Treasurer expenditure Assistant (Bendahara Pengeluaran Pembantu)	810,000	2,350,000
Budgeting Administrator (Pengelola Administrasi Keuangan)	640,000	
Supporting Staf	750,000	

Based interview and focus group discussion, the factors causing the high cost of simultaneous Pilkada can identified as follows, first, There is no synergy implementation of simultaneous pilkada between provinces for the election of governors and districts/cities for the election of regent/mayors, even though the local elections are in the same area, also pilkada did not hold on the same day. Second, There are many working groups (Pokja) of pilkada, therefore it has implications for honorariums per person. Third, The high cost pilkada due to there is no same standard of honorarium in same areas, every local government have differences honorarium standard.

Fourth, The limited capacity of local government preparing the logistics procurement and its distribution. Some regencies/cities that held simultaneous pilkada unable met the need of campaign materials such as billboards, banners, flyers, pin and ballot boxes. To overcome the problem, the pilkada organizing committee (KPU) ordered the logistics from the other regions or city. The procurement of pilkada logistics is carried out outside the region so that transportation costs be more expensive than procurement within the region. The distribution pilkada logistics in remote areas are difficult. High costs on the distribution of campaign materials and logistics due to election organizers (KPU) have to pay more for transportation to reach isolated districts. It has implications for the high cost of local transportation. Many regions in East Indonesia are remote and isolated area, such as Papua Province and Kalimantan, pilkada material distributing required expensive costs, for example logistics distribution (ballot boxes, ballots and voter forms) to isolated sub-districts, KPU must use the helicopters, because helicopters are the only mode of transportation to reach these areas.

Fifth, lack of budgeting efficiency on provision of campaign materials by KPU. Previous pilkada (or direct pilkada), campaign materials and tools were prepared by the candidate. Recently, in the simultaneous pilkada, campaign materials was carried out by KPU. However, there are some mismatch between the candidate's needs and the design prepared by the committee. Therefore, the campaign materials and tools were not taken by the candidate. The campaign materials and tools were lying in the KPU office warehouse. Based on interview, the candidate did not use the campaign materials because they have to spent budget for transportation and installation costs.

Sixth, the activities of socialization and technical guidance held in hotel caused the high of cost. Beside that, the organizing committee provides honorarium to participants as a substitute for transportation. Socialization simultaneous pilkada has not optimal due to inappropriate the communication strategies and methods. For the future, communication and socialization method is adapted to local wisdom, customs, and community issues.

Also, the involvement of local leaders and representatives of the people will influence the success of the elections.

Finally, in order to secure the elections, the government has allocated a security budget. In some regions, the security budget has increased (Aceh, West Java, DKI, South Kalimantan, West Papua Provinces).

### The Disparity of Simultaneous Pilkada Budgeting Among Region

Law No. 10 of 2016 states that the election budget is sourced from the Regional Revenue and Expenditure Budget (APBD). In practice, It has led to cost disparities among the region that running simultaneous pilkada at provincial and district/ city. It can be seen from the fact that there are areas with a small population or number of voters but with a larger pilkada budget. On the other hand, there are areas of islands (archipelago) but the election budget is low. Also, There are land areas but the Pilkada budget is higher than in mountainous areas.

The disparity simultaneous pilkada budgeting between provinces can be seen in table 5. This disparity of budgeting in the pilkada budget per number of voters. Table 5 shows that the highest financing per voter is West Papua Province (Rp. 721,000) and the lowest is in South Kalimantan (Rp. 38,000). North Kalimantan palced the second highest IDR 210,000).

Table 5. Disparity of Simultaneous Pilkada Budgeting 2015 and 2017 among Provinces

Province (Pilkada)	Voters	Budgeting (Rp)	Budgeting/Voters (Rp)
West Papua (2017)	701,891	506,384,609,000	721,457.62
North Kalimantan (2015)	437,663	92,000,000,000	210,207.40
DKI Jakarta (2017)	7,108,589	478,374,049,685	67,295.22
Aceh (2017)	3,431,582	179,478,201,600	52,301.88
Riau Islands (2015)	1,213,797	62,500,000,000	51,491.31
Central Sulawesi (2015)	1,935,646	85,071,225,550	43,949.79
South Kalimantan (2015)	2,840,520	110,000,000,000	38,725.30
West Sumatera (2015)	3,517,022	78,000,000,000	22,177.85

Source: General Election Commissions (KPU) (analyzed by author)

Based on Table 5, West Papua and North Kalimantan are the provinces with the highest pilkada budgets. Based on FGD, geographical factors, availability of infrastructure, and accessibility are the determinant factors of the high cost of the pilkada. High costs on the following activities: facilitation and procurement of campaign tools, procurement and distribution of logistics, and socialization of remote and isolated areas.

The disparity in the budgeting of simultaneous regional elections between Java and Outside Java is measured by the highest and lowest values of the budget per voter in regencies and cities within the same province, as shown in Table 5. In the Java region, the Province of the Special Region of Jogjakarta ranks first in the cheapest budget for simultaneous regional elections (Rp. 3,566), followed by West Java (Rp. 23,087), Central Java, and DKI Jakarta at Rp. 30.23 and Rp. 67,295. The East Java Province placed the first of the expensive pilkada in the Java region.

Based on the data, we know that pilkada budgeting in Jawa Island cheaper than outside Jawa. The high cost pilkada in the Java region due to geographically some regencie/cities have large areas and remote area. For example, Gunung Kidul is a remote area in Yogyakarta Province placed the highest cost of pildaka budgeting. Outside Java, the cheapest pilkada costs are in the province of South Kalimantan (Rp. 79,026) and the most expensive in West Papua (Rp. 1,492,000). The second most expensive cost is North Kalimantan Province (Rp. 993,541).

Table 6 Disparities Simultaneous Pilkada Budgeting at Provinces Java and Outside Java

No	Province (Pilkada)	The Highest (Rp/Voters)	The Lowest (Rp/Voters)	The Highest-The Lowest	Jawa-Outside Jawa
1	DY (2015)	30,508 (Gunung Kidul District)	26,941 (Bantul District)	3,566	Jawa
2	West Jawa (2015)	38,123 (Karawang District)	14,316 (Cianjur District)	23,087	Jawa
3	Center Jawa(2015)	49,864 (Magelang District)	19,341 (Demak District)	30,523	Jawa

4	DKI Jakarta	67,295.22	67,295.22	67,295	Jawa-DKI
5	East Jawa(2015)	83,239 (Pasuruan City)	12,555 (Malang District)	70,684	Jawa
6	South Kalimantan(2015)	112,374.12 (Kota Baru City)	33,448.43 (Banjarmasin City)	79,026	Outside Jawa
7	Center Sulawesi (2015)	280,765 (Banggai Islands District)	114,737 (Buol District)	166,028	Outside Jawa
8	Kepulauan Riau (2015)	253,549 (Anambas Island-District)	24,871 (Karimun)	197,339	Outside Jawa – Islands
9	Aceh (2017)	324,969 (Bener Meriah)	61,99 (Pidie)	250,650	Outside Jawa – Special Autonomy
10	Maluku(2017)	400,631 (Maluku West South)	103,511 (Ambon City)	297,120	Outside Jawa-Islands
11	North Sumatera (2015)	301,877(West Pakpak District)	24,941 (Medan City)	301,852	Outside Jawa
12	NTB (2015)	477,656 (Bima District)	32,648 ( Loteng District)	445,000	Outside Jawa – Islands
13	Papua (2017)	1,233,493 (Sarmi District)	281,404 (Jayapura District)	952,089	Outside Jawa-Special Autonomy
14	North Kalimantan (2015)	1,189,190.80 (Tanah Tidung)	195,650.07 (Nunukan District)	993,541	Outside Jawa
15.	West Papua (2017)	1,706,307 (Tambraw District)	214,028 (Sorong City)	1,492,279	Outside Jawa-Special Autonomy

Source: General Election Commissions (KPU) (analyzed by author)

Disparities simultaneous pilkada budgeting among districts/cities in an island area. Even though they are located on an island area or Kalimantan mainland, disparities have occurred among regions. North Kalimantan Province with total voters 437.663 has the highest budgeting per voter, which is Rp. 210,207.40. Meanwhile, South Kalimantan Province with 2,840,520 voters has budget per voter of 38,725.30. Meaning, the cost of pilkada is cheaper in South Kalimantan Province than in North Kalimantan. This data shows a large disparity in costs between regions when allocating budgets for simultaneous pilkada. Although geographically the two provinces are on the same mainland, Kalimantan island.

Table 7 Disparities Simultaneous Pilkada Cost at North Kalimantan and South Kalimantan Provinces

Province/District/City	Voters	Budgeting	Budgeting/Voters
North Kalimantan Province	437,663	92,000,000,000	210,207.40
<b>Tanah Tidung District</b>	<b>17,040</b>	<b>20,263,811,150</b>	<b>1,189,190.80</b>
Bulungan District	85,789	24,000,000,000	279,756.15
Malinau District	51,043	18,927,263,200	370,810.16
Nunukan District	133,418	26,103,241,375	195,650.07
South Kalimantan Province	2,840,520	110,000,000,000	39,002.89
Banjar District	13,338,700,000	392,673	33,968.98
Kotabaru District	25,407,900,000	226,101	112,374.12
Banjarbaru City	13,338,700,000	147,968	90,145.84
<b>Banjarmasin City</b>	<b>16,128,700,000</b>	<b>482,196</b>	<b>33,448.43</b>
Balangan District	9,000,000,000	89,445	100,620.49
Hulu Sungai Tengah District	13,600,000,000	187,067	72,701.22
Tanah Bumbu District	15,000,000,000	216,135	69,401.07

Source: General Election Commissions (KPU) (analyzed by author)

The table shows that Tanah Tidung District in North Kalimantan Province placed the most expensive, Rp. 1,189,190,80 per voter, followed by Malinau (Rp.370,810.16), Bulungan (Rp.279,756.15), and Nunukan (Rp.195,650.07). Meanwhile, Kota Baru District in South Kalimantan Province ranked the highest cost in Kota

Baru district, cost per voter of Rp. 112,374.12, followed Balangan District, cost per voter 100,620.49, and Banjar Baru City. 90,145.84. Meanwhile, the lowest cost is Banjarmasin City, rp. 33,448.43, followed by Banjar District, Rp. 33,968.98

## **Conclusion and Recommendation**

### **Conclusion**

The purpose of the simultaneous pilkada to create budget efficiency has not been as expected, The simultaneous pilkada is still high cost. The Study found that the highest component of pilkada budgeting include, honorarium, logistics procurement and distribution, campaign facilitation, socialization and technical guidance and preparation of regional election regulations. There are two main factor causing the high cost of simultaneous pilkada, namely (1) Lack of election management, namely, the absence of synergy in pilkada implementation, There is no the honorarium standards set up by local government, The limited capacity of local government preparing the logistics procurement and its distribution, and lack of budgeting efficiency on provision of campaign materials by KPU and socialization. (2) Geographical factors, especially in remote region that limited of accessibility. There are disparities in election costs between provinces, between regions within the same province, and between regions in Java and Outside Java.

### **Recommendation**

Based on the factors causing the high cost of the pilkada, we propose the following recommendations: 1. To increase the efficiency of Cost pilkada, the Government holds the provincial and district-city elections on synergy way and on a day, therefore, there is a budget saving on the working group honorarium budget, campaign facilitation, procurement and distribution of logistics, ballots, and socialization and technical guidance. 2. Adjustment and determination of cost standards for each region by considering the following factors: number of permanent voter lists, area size, level of geographical difficulty, and availability of regional facilities and infrastructure. 3. To increase the efficiency of campaign facilitation, we suggest two options. First, campaign facilitation is not carried out by the election organizers (KPU), but by candidates according to their needs. Second, campaign tools and materials are facilitated by the organizers using electronic media. 4. Regulate cooperation and cost-sharing between Provinces and Regencies/Cities For the effectiveness of simultaneous regional elections, taking into account the number of permanent voter lists, area size, level of geographical difficulty, and availability of regional facilities and infrastructure.

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# **A Case Study of School Climate Characteristics and Commitment Teachers at Hulu Perak District, Perak State in Malaysia**

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**Abstract:** School climate characteristics and commitment teachers are among the important elements in determining the success of a school. This study aimed to investigate the effect of the level of teachers' commitment, level of school climate characteristics at Chinese Primary School in Hulu Perak District, Perak state located in Malaysia. Design studies using survey methods and data was collected using questionnaires. The participants of this study involved 90 teachers from 11 primary school in the Hulu Perak District as a sample. The instruments used namely Organizational Health Inventory (OHI) and Organizational Commitment Questionnaire (OCQ) to measure the level of school climate characteristics and commitment teachers. The instruments of OCQ consists 15 questions whereby OHI includes 44 questions and divided into 4 dimensions which is collegiate leadership, behavior of teacher professionalism, emphasis on achievement and institutional immunity. Data were analysed using descriptive and inferential statistics. The results of OHI and OCQ showed that the level of climate characteristics (min= 4.09, SD=.315) and school climate (min= 3.49, SD=.265) are at a high level. Based on the findings of the study, several recommendations have been put forward for maintain and strengthen the school climate and high teacher commitment among primary school teachers in the Hulu Perak District, Perak state in Malaysia.

**Keywords:** School climate characteristics, commitment teachers, Organizational Health Inventory, Organizational Commitment Questionnaire

## **1. Introduction**

Education is a very important agenda for the development of a country. Recognizing this fact, the Ministry of Education Malaysia (MOE) has sought to transform education through various development plans and programs to produce quality human capital in terms of physical, emotional, spiritual, intellectual and social (Ministry of Education Malaysia, 2012). Recognizing the importance of education, schools play a very important role in generating quality students. Thus, it can be said that the success of a school lies in the effectiveness of the whole system, values, beliefs, climate, spirit and culture practiced by school people consisting of students, teachers, support staff and administrators (Singha & Sikdar, 2018). Teachers are the foundation of an education system. Without good teachers, an education system is said to lack a very important resource. One of the important aspects of quality teachers is by looking at the level of commitment to the profession and their students (Kennedy, 2006; Razak, 2009). There is no denying that teachers are the main pulse in implementing all policies and plans that have been planned by the ministry of education in this country. Recognizing the role of teachers as a factor in the success of a school system, the shift in the Malaysian Education Blueprint (2013-2025) has also been developed to transform the teaching profession as a major career choice. It is a strategy to improve the quality of education in the country. With this shift as a general guide, the teachers produced will be of better quality and this will produce excellent students in all fields (Arumugam, Chang & Khalid, 2015; Ministry of Education Malaysia, 2012).

Therefore, recognizing the importance of school climate on teacher commitment, school administrators need to examine the aspects and factors of school climate that can influence teachers' work commitment so that teachers' abilities and talents can be used to the fullest.

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## **2. Problem Statements**

The school climate is the result of interpersonal relationships among students, families, teachers, support staff, and administrators. The results of the findings from previous studies have shown that the organizational climate have a direct and indirect relationship with such organizational elements leadership, job satisfaction, motivation, support, job performance, commitment, productivity, behavior and organizational effectiveness. The effectiveness of the organization is highly dependent on performance and the work commitment of its employees. Wang & Degol (2015) state that schools encounter academic, community, safety, and institutional environmental dimensions that encompass almost every feature of the school environment that influences cognitive, behavioural, and psychological development. This approach shows that the school climate has similarities with aspects School environment. All school environments are different while some schools are friendly, interesting, and supportive. There is also a school environment that lacks the nature of responsibility and also not safe. The feelings and attitudes evoked by the school environment are referred to as school organizational climate.

Meanwhile, studies to look at teacher commitment based on school type in the country are less studied yet have been studied. Thien & Razak (2014) who have made a comparative study between 1154 teachers from three types of schools in Penang, Malaysia. The result found that no significant differences in teacher commitment from the three types of schools. They found this was because teachers were exposed to the same school structure system as well as curriculum in the country.

Thus, with the results of such findings it can be concluded that an education system will not succeed without the dedication and commitment of teachers. Highly committed teachers are able to bring big changes to their organization (Kimani, Kara & Njagi, 2013). Lack of commitment will cause employees to often move to other organizations to enjoy better facilities or income than previous organizations. Thus, administrators as well as managers need to introduce various programs and strategies in order to maintain the commitment of their employees (Kimani, Kara & Njagi, 2013; Singha & Sikdar, 2018; Thien & Razak, 2014).

Thus, the teacher factor is not the cause of the decline in the achievement of a school, in fact, the school climate is one of the factors that influence the commitment of teachers (Arumugam, Chang & Khalid, 2015). Teacher commitment is crucial to the quality of education (Nordin, Darmawan & Keeves, 2010). This is because teachers who have a high level of commitment in school are responsible teachers. Therefore, various factors and aspects related to teachers need to be studied to professionalize the field of teaching so that the community does not point fingers at teachers arbitrarily. Issues that arise related to teacher commitment are poor student achievement, absenteeism and late attendance on duty, misuse of leave permission letters and tend to have negative work behaviors (Shafiq & Rana, 2016; Shapira Lishchinsky & Rosenblatt, 2010; Nordin, 2012). Therefore, this study will examines the level of teacher commitment and school climate in the National Chinese Primary School in Hulu Perak District, Perak, Malaysia.

## **3. Literature Review**

Achieving school effectiveness requires an effective school climate characteristics and commitment teachers. An effective school climate provides changes in the performance of students, teachers and school staff and can be used as a basis in efforts to improve the school climate, climate and school environment will have an important influence on the formation of behavior, aspirations and social interactions for members in it (Abdullah, 2007). An effective school climate is one that is able to create integration and harmony among its students and reduce the gap of differences among them.

### **3.1 School Climate Characteristics**

Organizational climate is an aspect that describes an organization and that distinguishes one organization from another, stays in place over a period of time and influences behavior in the organization. Fisher & Fraser (2011) also stated that improving the quality of the work environment in schools can make schools more effective in providing the best learning process. Students will feel comfortable and at ease in following learning activities when a school has a conducive climate. It is formed from the interaction of individuals in the school, namely teachers, staff, principals and students themselves. There are studies that show that high-achieving schools have a better level of cheerfulness than schools whose environment is less cheerful (Ismail, 2008). This was agreed

by Hoy and Miskel (2001) that there are behaviors in every organization has a function that is not simple because in it there are a number of individual needs and organizational goals to be achieved together. The relationship between the elements in it is very dynamic.

Therefore, school climate characteristics will give great influence in effective school development, one of the hindering factors to school achievement is the culture of school organization (Evonne & Crispina 2018; Hussin, M. S. M. & Rahman, R. A., 2019). School climate characteristics are important in the learning process because it will give impetus to the achievement of quality education until a school reaches an effective level.

### **3.2 Commitment Teachers**

Many studies have been done to examine the level and relationship of commitment with other variables either in the field of education or in the industrial world. Teacher commitment is also one of the variables that are very fond of being studied by researchers in the social sciences. Among the aspects of teacher commitment that have been studied are to see the importance of teacher commitment to school achievement, types of teacher commitment, factors that influence teacher commitment, comparison of commitment between public and private schools, primary and secondary school teacher commitment and commitment between schools high performance, low and regular daily.

Even the findings of a study in the field of non-education conducted by Latchigadu (2016) found that leadership, employee relations, incentives, promotion and performance management are important factors that influence employee commitment. He has added training and development as well as knowledge sharing as influencing employee organizational commitment. Apart from factors such as satisfaction, school culture, self-efficacy, demographics, motivation, stress, leadership style as well as head teacher behavior, teacher commitment can also be seen in terms of school type according to race.

Therefore, school effectiveness is achieved with an effective school climate characteristics and commitment teachers. An effective school has an orderly, controlled, calm and orderly school atmosphere that enables or provides an atmosphere conducive to effective and positive teaching and learning processes. This is evidenced by the findings of the study of Lily & Taat (2020) and Thien & Razak (2014) who stated that a positive school climate, conducive to learning and a pleasant environment will encourage students to behave well and thus will improve their academic achievement. Teachers' commitment will also be able to keep them sensitive to change, especially to meet the challenges of 21st century education with positive school climate. Teachers who have a high level of commitment have the same self-goals as school goals. Therefore, they always strive to ensure that tasks are performed efficiently without much excuse.

## **4. Objective Study**

This study was conducted with the aim to identify the relationship between school climate and teacher commitment in Hulu Perak District, Perak State in Malaysia. The specific objectives of this study are to:

- a) determine the level of teacher commitment.
- b) determine the level of school climate.

## **5. Methodology**

This study is a quantitative study that uses survey method. A survey method was conducted to determine the level of school climate and the level of teacher commitment. Meanwhile, random sampling method used as a sample from the population. This design used because it has the advantage of measuring current attitudes or practices in addition to being able to provide information in a short time (Creswell, 2015). The population used for this study consists teachers from National Chinese Primary School in Hulu Perak District. The population of this study was selected from teachers serving in the Chinese primary school regularly. Based on Table 1, it is found that a total of 120 teachers are served in 11 National Chinese Primary School in Hulu Perak District in the state of Perak, Malaysia. According to Krejcie and Morgan (1970), populations between 110 to 120 need a sample as many as 86 to 92 people. Therefore, 98 teachers will randomly selected in this research.



Table 1. Numbers of National Chinese Primary School Teachers in Hulu Perak District

Type of School	Number of Schools	Number of Teacher
National Chinese Primary School	11	120

Source: Data from District Education Office, Hulu Perak District

Instruments are a way of getting answers to research questions (Creswell, 2015; Kerlinger, 2010). Quantitative data collection in this study using instruments. Quantitative data were collected through questionnaires related to school climate and teacher commitment. Instruments built on a variety of sources such as tools that have been used by other researchers such as operational definitions. Data were obtained from instruments distributed by Google form links to respondents consisting of teachers in Hulu Perak District. The instrument method was chosen to obtain feedback from the respondents because the number of respondents is quite large.

Organizational Health Inventory (OHI) Questionnaire used to measure school climate which has been used by Macneil et.al. (2009), Velasco and Edmonson (2012), Curtis F. Null (2012). In this study, a school climate instrument total 44 OHI items was developed by Hoy & Feldman (1987) with seven detailed dimensions namely: collegiate leadership, behavior of teacher professionalism, emphasis on achievement and institutional immunity. Whereas Organizational Commitment Questionnaire (OCQ) was measured using 15 question items adapted from the teacher commitment questionnaire index of Mowday, Steers and Porter (1979).

Validity tests of OHI and OCQ were performed to ensure the content in the items measured variables. Before the pilot study was conducted, the researcher used the services of experts such as project supervisors and other lecturers to verify the contents of the instrument page. Researchers have referred three validator panels for the purpose of instrument validation. Validity test results stated that all items were appropriate and timely to measure school climate and teacher commitment. A pilot study was conducted and a reliability test using Cronbach's Alpha coefficient was conducted. The dimensions in the study questionnaire have shown high reliability, namely the school climate dimension 0.80 and the teacher commitment dimension 0.750.

## 6. Findings

### 6.1 Organizational Health Inventory (OHI) Questionnaire

In this study, the level of school climate characteristics was measured using 44 items. This instrument is consisting 44 questions and divided into 4 dimensions which is collegiate leadership, behavior of teacher professionalism, emphasis on achievement and institutional immunity. Table 2 shows the distribution of respondents according to mean and standard deviation of teacher commitment.

Table 2. Results of OHI

No	Description	Mean	SD	Level
1	Collegiate Leadership	4.05	.321	High
2	Behavior of Teacher Professionalism	4.07	.314	High
3	Emphasis on Achievement	4.15	.308	High
4	Institutional Immunity	4.09	.317	High
	Overall	4.09	.315	High

Table 2 shows the mean and standard deviation scores for each dimension as well as the overall level of school climate. The achievement emphasis dimension got the highest (mean=4.14, SD=.308) while the collegiate leadership dimension had the lowest (mean=4.05, SD=.321). Meanwhile, behavior of teacher professionalism (mean=4.07, SD=.314) and institutional immunity (mean=4.09, SD=.315) recorded at moderate level. However, all four dimensions are at the level of the school climate is high. This means that, overall, the school climate is at a high level with a mean score of 4.09 (SD = 0.315) and the respondents think that their school climate is more emphasizing school achievement than other dimensions.

### 6.2 Organizational Commitment Questionnaire (OCQ)

In this study, the level of teacher commitment was measured using 15 items. Table 3 shows the distribution of respondents according to mean and standard deviation of teacher commitment. The achievement item 1

(mean=4.17, SD=.552) and item 10 (mean=4.17, SD=.646) got the highest score while the item 3 (mean=3.36, SD=.840) had the lowest score.

Table 3. Results of OCQ

Item	Description	Mean	SD	Level
1	I care about the aim of school.	4.17	.552	High
2	I find the personal values and the values of this school are the same.	3.82	.680	High
3	I often find it difficult to agree with school policy on important matters involving staff.	3.36	.840	High
4	I am willing to work harder than expected to help this school succeed	4.16	.585	High
5	This organization is highly inspiring in highlighting my work performance	4.04	.651	High
6	I am willing to accept all types of tasks to continue working with this school.	3.93	.699	High
7	I think this is the best school for me to work.	3.98	.726	High
8	I feel my loyalty to this school is very low.	3.90	.900	High
9	Very few changes in this school will allow me to move to another school.	3.56	1.171	High
10	I feel proud to tell others that I am a citizen of this school.	4.17	.646	High
11	Deciding to work at this school was an obvious mistake for me.	3.84	1.004	High
12	There is not much I can gain by continuing to be a citizen of this school.	3.78	.841	High
13	I might work at another school as long as the tasks are almost the same.	3.52	1.134	High
14	I feel so happy to have chosen this school as a place to work compared to with other schools when I made the choice to start work.	3.96	.725	High
15	I commend this school as a great school to work for.	4.16	.640	High
	Overall	3.89	.265	High

## 7.0 Discussion

The findings of the study showed that the school climate characteristics in Hulu Perak District, Perak State in Malaysia was high with a mean of 4.06 and standard deviation 0.20. The results of these findings are similar to the results of the study of Arumugam, Chang & Khalid (2015), and Selamat, Nordin & Adnan (2013). They found that the level of teacher commitment in their study schools is high. While the level of teacher commitment in the study of Norazlinda & Surendran (2016), Cammellia (2016) found to be at a moderate level. The findings show that the overall mean for the school climate in Hulu Perak District, Perak State in Malaysia is 4.09 with standard deviation 0.315. Based on the four dimensions, OHI shows that the level of school climate is at high level. The most dominant School Climate dimension was Achievement Emphasis with a mean score of 4.15 with a standard deviation of 0.38. Dimension of institutional immunity (mean=4.09, SD=.317) also get the high level of school climate. However, all four dimensions of school climate are present at a high level. The findings of this study are in line with the findings of a study by Abdul (1995) who has listed student achievement as one of the characteristics in an effective school. This finding is also similar to the findings of Arumugam, Chang & Khalid (2015) who found climate in the excellent schools studied is high. Similarly, the findings of Mohsen et. al. (2014) also found that organizational climate has an impact on academic achievement. Even Najeemah (2012) also supports that a 'happy' school is a school that is highly motivated by earning good performance as well as making the school different from other schools. Only the collegiate leadership dimension showed the lowest score of 3.00 with mean standard deviation 0.52. The findings in this study are in line with the findings of the researcher's previous study others namely Arumugam, Chang & Khalid (2015), Najeemah (2012), Douglas (2010) and Cammellia (2016).

Meanwhile, referring to the descriptive statistic result, the overall mean score for teachers' commitment is high (mean=3.89, SD=.265). The high level of teachers' commitment is believed to be one of the factors that affects the schools' performance. According to Najeemah (2012), committed teachers have strong psychological bond with the school, students and their subjects. Therefore, teachers with high commitment towards school will work

diligently which will result in the increase of students' performance. According to Rathod (2013), committed teachers make a difference in school success and students' learning. Highly committed teachers have been identified as one of the important factors that contributes to the future of schools and education as shown by the teachers in the five excellent schools in the Hulu Perak District, Perak State. The results of the study show that there is a significant positive commitment teacher in organization. The headmaster is the manager in the primary school and is responsible for all the teachers in the school. According to Harrison and Stokes (1993) power culture means a member who manages the organization and is accountable to all members in the organization. In school culture roles are rules, policies, procedures and job descriptions that guide members and organizations. Achievement culture refers to teachers who have the same vision and goals as the school's vision and goals. While a supportive culture is a key characteristic in the sharing of trust between teachers and schools. Teachers who have a high level of commitment have the same self-goals as school goals. Therefore, they always strive to ensure that tasks are performed efficiently without much excuse. The high level of teacher commitment among teachers will indirectly reduce the issues of late attendance, absenteeism and early retirement among teachers. In addition, the commitment of teachers will also be able to make them always sensitive to changes, especially to face the challenges of 21st century education (Jaggil & Taat, 2018). Schools need to adopt a high school culture. The practice of a high school culture creates a comfortable work environment and causes school people to work happily and not be threatened. School culture provides guidance in completing a task and solutions to problems that arise. Thus, the existence of a high level of school culture will increase the level of commitment of teachers in the school.

## **8.0 Conclusion**

The overall findings of this study show that the level of school climate and teacher commitment is high in primary schools in the Hulu Perak District, Perak State in Malaysia. This shows that each school has strived to maintain a good climate to produce high teacher commitment. Furthermore, this study also gives a good sign that government policy, especially the efforts of the Ministry of Education has been successful in producing highly committed educators regardless of the type of school they teach and even efforts to produce administrators who are able to provide a good, positive and open school climate. is not in vain and can be seen through the findings of this study.

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## **Rehabilitation of People Living with HIV in Non-Governmental Organizations: Case of Russia**

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**Abstract:** The paper will present the results of research aimed at studying the specifics of the NGO's activities in the rehabilitation of people living with HIV in Russia. In the process of collecting empirical material, three focus groups were held with clients of one charitable foundation, as well as one focus group with the head and employees of the foundation. The main results are - we distinguished two groups through HIV-infected people: socially adapted and socially un-adapted. Socially adapted clients demonstrate a high degree of acceptance of their diagnosis; comply with the necessary treatment protocols. However, they need in psychological support, which they cannot be offered in urban AIDS prevention and control centers. Socially un-adapted (ex-convicts, drug-users, etc.) need in active medical and social rehabilitation, often urgent services (food assistance, hygiene equipment, restoration of documents, etc.). Equal counseling is more perspective social work technology with this type of clients. Preventive and information work in HIV infection risk groups have to organize with the use of representatives of the target group that are significant to them. The NGOs, working with HIV-positive people, face serious HR risks and are in need of qualified specialists. They are characterized by high staff turnover, unwillingness of specialists to work with this category of clients. Therefore, most of the employees of such organizations without specialized education and need more for hard skills building. Summing up, we emphasize that governmental and non-governmental organizations working with HIV-positive people in the Russia provide comprehensive assistance, complementing each other. State centers for the prevention of HIV infection carry out registration records, prescribe treatment and therapy, and provide primary consulting assistance. In addition, NGOs carry out deeper, targeted work in risk groups, provide urgent, emergency assistance, and act as intermediaries in difficult cases of interaction between HIV positive and government agencies.

**Keywords:** HIV-infected people, NGOS, Rehabilitation, Equal counseling

### **Introduction**

According to the Federal Budget Institution of Science «Central Research Institute for Epidemiology» of the Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing (CRIE, 2022, March), as of December 31, 2021, there were 1,137,596 Russians living in the country with a laboratory-confirmed diagnosis of HIV infection, which is a significant group of citizens among the entire population.

At the same time, it should be noted that over the past 20 years, the age of detection of a positive HIV status has increased significantly. If in the early 2000s the main proportion of newly detected cases were in the age group under 30 years old, in recent years cases of confirmed infection over 40-year-old people have become more frequent. The main route of infection is also shifting from drug use to sexual transmission. Such transformations lead to the heterogeneity of the group of people living with HIV, to the complication of forms and methods of working with them.

Despite the fact that a whole network of AIDS and HIV prevention centers has been created in Russia, which organize information activities, provide their clients with the necessary therapy and consultations, the importance of non-profit organizations that conduct more individual work with people who have received a positive HIV status is also high. Hence, the purpose of this article is to study, using the example of a specific organization, the specifics of the activities of NGOs for the rehabilitation of HIV-infected people from various social groups.

### **Method**

In the process of collecting empirical material, we held three focus groups with clients of the Charitable Foundation "New Life", among which were people who use drugs and released from prisons, as well as one focus group with the head and employees of the Charitable Foundation "New Life" (Yekaterinburg, Russia).

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## **Results and Discussion**

A meaningful analysis of focus groups revealed several trends in working with this category of clients. People living with HIV represent a very heterogeneous group, depending on the route of infection and lifestyle, which determines the characteristics of their rehabilitation in a non-profit organization. Two groups can be distinguished: socially adapted and socially unadapted. The type of group determines their need for social services and the risks they face.

Socially adapted clients show a high degree of acceptance of their diagnosis, adhere to the necessary treatment protocols, but are in dire need of psychosocial services, counseling and support, which they cannot be offered in urban AIDS prevention and control centers. Many of them hush up their diagnosis in the work collective, environment, but at the same time, they feel the need for communication, discussion, and solving problems of a socio-psychological nature.

Socially unadapted clients (prisoners, drug users, etc.) need active medical and social rehabilitation, urgent services (food assistance, restoration of documents, protective equipment, hygiene, etc.). At the same time, they are not ready to change their lifestyle based on their diagnosis. In working with persons who have served their sentences, their resocialization is very important, especially in the formation of their skills to work in the digital environment. Since, having spent a long time in places of deprivation of liberty, they lost or did not have time to form the skills of working at a computer using modern technical means. Without these competencies, they experience serious difficulties in finding a job. According to the fund staff, they tried to organize such classes, but they did not receive the desired response and eventually curtailed this practice, although the clients' need remained. It is obvious that other formats are needed for both the training itself and the motivation from the clients.

This category of clients is closed. They are very distrustful of various organizations offering rehabilitation services, since almost all of them have a negative experience of interacting with "illegal" organizations. The activity of unreliable organizations - fraudsters increases the risk of this group to get into even more difficult life circumstances, as the clients themselves are unable to think logically and reflect in certain states, the consequences of their actions. Taking into account the high level of distrust of persons who have served their sentences and drug users to various organizations, technologies of equal counseling, information work in risk groups for the prevention of HIV infection come to the fore.

Weaknesses in the organization of the system of care for people living with HIV were identified. There is a serious risk of not receiving the necessary therapy when changing place of residence. This is because AIDS centers serve citizens only at the place of registration. When moving to another region, and even a city, before registering at the place of stay, they cannot receive the necessary medicines. Persons with HIV who have released and have not returned to their place of registration also experience serious difficulties in obtaining the necessary therapy. Employees of non-profit organizations provide them with assistance, but without a residence permit, clients still cannot receive the necessary assistance on a permanent basis. Given this situation, of course, it would be advisable if there were a unified registration system for this category of citizens without being tied to a specific type of locality. However, in practice, organizationally, it is still difficult to implement.

Non-profit organizations, working with HIV-positive people, face serious HR risks and are in dire need of qualified specialists. They are characterized by high turnover of staff, unwillingness of specialists to work with this category of clients. Therefore, most of the employees of such organizations without specialized education also have a positive HIV status, experience in drug use, serving a sentence. After rehabilitation in the conditions of the foundation, they firstly became volunteers, and then full-time employees. These specialists, on the one hand, understand the needs of clients, but, on the other hand, they need a lot of time to develop skills for solving complex professional tasks. Such funds for solving HR problems can cooperate with educational institutions to improve the skills of their employees - peer consultants, train them in professional skills and technologies, since candidates who come from outside are very prejudiced to work in such organizations.

At the same time, the fund that the study was conducted does not experience obvious difficulties with financing, unlike other NGOs that work with other categories of clients. They have the opportunity to win large grants, as well as receive subsidies from the Ministry of Health. This kind of "overfunding" (a term used by one of the employees) results in the need to expand without having a sufficient talent pool, which can lead to the risk of undermining the effectiveness of investing in such organizations.

## **Conclusion**

Summing up the analysis, we emphasize that working with such clients as people living with HIV, drug addicts, and convicts has its own specifics. The practice of interaction of NGOs with this category of citizens shows that among the deviant groups there is a high proportion of HIV positive, but at the same time they are characterized by neglect of their own health and the health of loved ones. Hence the high risk of HIV infection. Therefore, prevention in risk groups is important. Prevention by the type of “peer” counseling, since these groups exist in the format of a closed subculture and it is very important that they receive information from significant “friends”, and this can only be realized in the context of NGOs. However, government and non-profit organizations working with people living with HIV provide comprehensive care, complementing each other. State centers for the prevention of HIV infection carry out registration records, prescribe treatment and therapy, and provide primary consulting assistance. And NGOs carry out deeper, targeted work in risk groups, provide urgent, emergency assistance, and act as intermediaries in difficult cases of interaction between HIV positive and government agencies.

## **Acknowledgements or Notes**

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# **Adaptation of Chinese Students in the Russian Higher Education Multicultural Environment in the Period of Distance Learning**

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**Abstract:** The processes of world globalization lead to a constant increase in mobility. The changing society has long ceased to be a closed and limited system of nation-states. The aim of the research is to determine the conditions of social adaptation of students in multicultural environment in the period of distance learning. The problem of finding the concept that provides adaptability and sustainability of the personality, capable of successful development and interaction in the multicultural space of the Russian university is actualized. A series of sociological studies on the problems of interaction between Russian and Chinese students in the educational space of universities was conducted. In 2016, the project "Russian-Chinese dialogue: the way to meet each other" was implemented within the Program of development of student associations' activities supported by the Ministry of Education and Science of the Russian Federation 2016-PSO-94 with our participation. A survey was conducted among Chinese and Russian students of three universities in Yekaterinburg (500 Russian and 500 Chinese students participated in the survey). In 2019-2020 a survey was conducted among Russian universities according to the author's methodology of the matrix of four bases. (500 Chinese students). In 2020, 2 focus groups with Chinese students were conducted. Also were conducted in-depth interviews with Chinese professionals who graduated from Russian higher education (50 Chinese graduates of Russian universities). The geography of the research included the leading universities of Moscow, Yekaterinburg, Ekaterinburg, and Moscow Region. Moscow, Yekaterinburg, Tyumen, Chelyabinsk. The obtained data and coordination of the conclusions with a number of studies provide the need to study the problem of creating a system for training multicultural education teachers in the period of distance learning. The research funding from the Ministry of Science and Higher Education of the Russian Federation (Ural Federal University Program of Development within the Priority-2030 Program) is gratefully acknowledged.

**Keywords:** Adaptation, multicultural environment, russian-chinese interaction, educational process, educational space.

## **Introduction**

The modern era of global globalization is characterized by the growing importance of the intercultural phenomenon. Adaptation to new cultures is a difficult and stressful process (Jae Tsongkapa, 2015). What determines the increased attention of the educational sphere to the issue of internationalization aimed at the development of intercultural and international mobility of university students (Feng Yujun, 2007). The learning and teaching environment should be organized with multicultural education in mind. Universities, which include social programs in the education system that are focused on personal adaptation in a multicultural environment, contribute to students "develop international understanding and intercultural skills that prepare students to actively participate in a much more global world" (Fursova V.V., 2006).

The widespread continuous development of information and communication technologies leads to their penetration into all areas of life of a modern person. An exception was not the sphere of teaching and learning (Smirnova L.N., 2018). The generation of the 21st century is growing in the era of digitalization, the peculiarities of thinking and perception of young people differ significantly from previous generations. Young people receive a large amount of information via the Internet, this forms a new type of personality, so it is impossible to ignore this factor (Khromov S., Zhdanova E., 2015). The researchers point out that the issue of adapting students in a multicultural environment needs to be further developed in the light of technological advances in the globally connected world (Torkunov A.V., 2012) of significant international potential for the exchange of information through social networks; mass open online courses (MOOCs); growth of the number of distance learning models (Tarabaeva V.B., 2009). An increasing number of students are currently choosing to undergo a program not full-time, but distance learning at the university. The question of the need to rethink remote programs was especially updated.

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An exception was not the sphere of teaching and learning (Smirnova L.N., 2018). The generation of the 21st century is growing in the era of digitalization, the peculiarities of thinking and perception of young people differ significantly from previous generations. Young people receive a large amount of information via the Internet, this forms a new type of personality, so it is impossible to ignore this factor (Khromov S., Zhdanova E., 2015). The researchers point out that the issue of adapting students in a multicultural environment needs to be further developed in the light of technological advances in the globally connected world (Torkunov A.V., 2012) of significant international potential for the exchange of information through social networks; mass open online courses (MOOCs); growth of the number of distance learning models (Tarabaeva V., 2009). An increasing number of students are currently choosing to undergo a program not full-time, but distance learning at the university. The question of the need to rethink remote programs was especially updated. An increasing number of students are currently choosing to undergo a program not full-time, but distance learning at the university. The question of the need to rethink distance learning programs during the COVID-19 period was especially updated. In a rapidly globalizing world, the borders between countries are "erased," people from different cultures actively interact, expanding communication opportunities. Like any other field, education also undergoes the process of globalization. Today, students and teachers participate in worldwide educational activities without restrictions. This requires a positive attitude towards the concept of multicultural education, which is defined as respect and tolerance for different cultures (Sukhova A.N., 2013). According to some studies conducted on this topic in a number of countries, multicultural education is not yet fully understood, it is understood as a problem limited by ethnicity (Suvorov S., 1999). Multiculturalism, where cultural and racial diversity is recognized and cultural differences are considered rich, can be seen as an ideal system for each culture and civilization, as it is based on equality and respect (Dobrenkova E.V., 2007). In this concept, each culture is valuable, cultures are not compared, each of them is considered as a separate with its own conditions. Multicultural education is an approach aimed at teaching free-thinking personalities who ask questions that recognize their culture, are self-critical and respect differences in thinking and lifestyle (Smirnova L., 2018). A number of papers present the results of studies indicating a low level of intercultural interaction between students, the authors concluded that acculturation is one of the most serious problems in international education (Scott P., 2000). Multicultural policies in educational institutions reduce the diversity and academic achievement gap between students. Sociocultural adaptation is mainly evaluated based on adaptation to the living environment, interpersonal adaptation, and adaptation of perceived values. Aspects include the consciousness of cultural values, the ability to cope with problems and establish, maintain relations with society (Jae Tsongkapa, 2015).

Adaptation in a cross-cultural environment is a complex process in which various factors affecting acculturation are involved, the patterns of which may differ. Nevertheless, they also distinguish common - demographic characteristics of students, such as gender, age, education, marital status, as well as whether they study abroad or not (Savchenko I.A., 2010). The main advantages of multicultural education are: the potential for developing intercultural competencies and preparing students for professional implementation in a global environment; positive influence on interpersonal relations in the context of the internationalization of modern society (Rusanov D.V., 2009).

Adaptability indicators are combined into two large groups: external or objective, and internal or subjective. External indicators reflect the compliance of human behavior with the regulatory parameters of the social system. The result of adaptation in this case is interpreted as the achievement of external well-being through a given system of behavior. And intrinsic indicators of adaptability reflect a general mental state, a sense of comfort and personal satisfaction. The combination of external and internal indicators, the needs of the personal and social system are the main task of the social adaptation process (Wu Guoguang, 2007). A.R. Alikberova's work describes the lack of researchers' attention to how distance learning programs can help students from around the world in the issue of multicultural diversity and social adaptation, taking into account their unconventional ways of learning. The issue of concerns of teachers about the potential problem of a safe interactive space due to the lack of personal contact with students (Alikberova A.R., 2014) is raised. These prerequisites led to the relevance and need for additional research in order to study the phenomenon of social adaptation of Chinese students in a multicultural environment during distance learning.

## **Method**

The purpose of the study is to study the conditions for the social adaptation of Chinese students in a multicultural environment during the period of distance learning. Based on the goal, the objectives of the study were determined:

1. Assess the level of social adaptation of Chinese students.

2. Develop and practically test a model of social adaptation of a student in a multicultural environment in a distance learning environment.
3. Compare the features of adaptation in Russian and Chinese universities during distance learning.

The object of the study is the process of distance learning at the university, which contributes to the social adaptation of Chinese students in a multicultural environment.

A series of sociological studies was carried out on the problems of interaction between Russian and Chinese students in the educational space of universities.

A survey was conducted among Chinese and Russian students of three universities in Yekaterinburg (500 Russian and 500 Chinese students took part in the survey). In 2019-2020, a survey was conducted on Russian universities on the author's methodology of the four-basis matrix. (500 Chinese students), in 2022 a study was conducted, during which 500 students from the SCO countries were interviewed, 30 in-depth interviews were conducted, 2 focus groups with financial support from the Ministry of Science and Higher Education of the Russian Federation within the framework of the Development Program of the Ural Federal University named after the first President of Russia B.N. Yeltsin in accordance with the strategic academic leadership program "Priority-2030."

The geography of the study included leading universities in Moscow, Yekaterinburg, Tyumen, Chelyabinsk. Using the method of collecting data at the organizational and preparatory stage of the study, several levels of social adaptation of a Chinese university student in a multicultural environment were constructed: high, medium, and low. Students with a high level of social adaptation have a theoretical base, skills in building intercultural interaction with representatives of other cultures, norms of etiquette of communication in various communication and speech multicultural situations, and professional competencies. The average level is characterized by a lack of active position, operation of insufficiently systematized knowledge. Students with low levels of social adaptation have unsustainable skills in building intercultural communications, personal motivation and professional competencies. The average level is characterized by a lack of active position, operation of insufficiently systematized knowledge. Students with low levels of social adaptation have unsustainable skills in building intercultural communications, personal motivation and professional competencies. The obtained and processed results of the questionnaire at the first stage of our study showed the following. The average rate of social adaptation in Chinese students of the experimental group was 4.5, in the control group - 4.9. It can be concluded that the average level of the studied phenomenon at the beginning of the experiment in students of both groups is approximately the same, the differences in indicators are insignificant. It also follows from the results that the level of social adaptation depends on the year of study (course) of the student, age indicators. First-year students performed the lowest. Since the phenomenon of social adaptation is in constant dynamics of development, is also formed in the conditions of life experience, such results can be considered the norm and a logical pattern. Using statistical processing of the obtained survey data, the average indicator of the level of social adaptation of respondents was established. Quantitative and qualitative processing of average indicators made it possible to identify that the predominant majority of students demonstrated an average and low (in the experimental group - 68.4%, in the control group - 66.6%) level of social adaptation in a polycultural environment. The analysis and results of the obtained data led to the next stage of the study, which was aimed at identifying the specifics of the adaptation of Chinese students in a multicultural environment in distance learning.

## **Results and Discussion**

In the context of COVID-19, most students and university teachers faced the need for remote work. It should also be noted that the number of Chinese students entering Russian universities continued to remain stable, noting the increase according to an interview with Elena Emelyanova, director of the department of analytical support for foreign economic activity of the Ministry of Economic Development of Russia. "We continue to work actively" (Call China No. 4-43, September 2021). Thus, 1 year of Chinese students in Russian universities admitted in 2020 immediately found themselves in a situation of forced need to study remotely. The repeated survey revealed the dynamics of the indicators of the studied phenomenon in the conditions of distance learning. Based on the analysis of the obtained results (M- average), we can draw the following conclusions. The average rate of social adaptation of students in the control group after the expiration of the experimental period remained at the average level. The dynamics of the average indicators of the respondents of the experimental group is more significant - the initial results are 4.5, which corresponds to the average level increased to 7.1, which corresponds to a high level.

Such results suggest a higher efficiency in adapting Chinese students to distance learning settings.

The results of our practical research indicate the intensive positive dynamics of the process of social adaptation of Chinese students in a multicultural environment into distance learning conditions. The positive dynamics of average indicators, the increase in the percentage predominance of high and medium over the low level of social adaptation of students of the experimental group after the practical testing of the developed program makes it possible to conclude on the effectiveness and expediency of distance learning technology in a modern educational environment in order to create favorable conditions for social adaptation. Our data are supported by a number of studies that describe the experience of distance learning in an international context (Arasaratnam L. A., 2015). The authors argue that the results obtained during their work, in which 1,141 respondents took part, indicate the effectiveness of the conditions for intercultural adaptation in the context of distance learning. Based on nearly 40 years of studies of internationalization (Alikberova A.R. 2014), a common conclusion is that local students are often more familiar with local context, language and academic approaches, and may also have stronger network structures to support their compatriots (Alikberova A.R.: 2014). The results of the study showed that distance learning becomes more complex when students are at a greater geographical distance compared to the host institution, which is consistent with the findings of other researchers (Luo & Zhang, 2021; Xiong & Zhou, 2018; Yu & Wright, 2016). The opportunity given to participants to study at any time anywhere using a distance learning model determined student satisfaction (92%) with this form of study, which is unequivocally consistent with the results of our study. A number of research papers show that distance learning is more complex when taking into account the factor of finding students at a distant geographical distance from the university. At the same time, the results suggest that students studying at a distance were relatively well adapted academically and socially, to a greater extent than students in full-time education. We also came to similar conclusions as a result of our study (Arasaratnam L. A., 2015). It is also necessary to consider the influence of social networks as a tool for distance learning, a powerful information resource that affects intercultural adaptation. It is impossible not to pay attention to the significance and potential of social networks, which provide a context for intercultural communication, information exchange, interaction regardless of distance. It is necessary that universities provide services to promote cultural exchange between students in order to strengthen friendly relations between different parties, establish intercultural ties in order to expand networks of social support for students, our conclusions are consistent with other studies (Forbush, E., & Foucault-Welles, B. 2016). Factors affecting the social adaptation of students in a multicultural environment are described in a number of works (Smirnova L., 2018). At the same time, older students have more friends, however, first-year students more easily find contact with strangers; women experience both a higher level of well-being and more symptoms of anxiety and depression in the process of social adaptation in the university environment; relations between foreign and local students improve during study, but the interaction between them after graduation almost completely ceases. The results of our study showed that the gender difference factor did not affect the process of social adaptation of students in the multicultural environment of the university. The respondents of the experimental group pointed to the positive functions and possibilities of learning precisely in remote form, highlighting psychological comfort and great prospects for communication with representatives of carriers of other people's cultures. Knowledge of the language is one of the most important conditions associated with better social adaptation and psychological well-being in a multicultural environment (Smirnova L., 2018). At the same time, the national relationships of the country, the international policy of the university predetermines a positive attitude and level of language proficiency. The inability to speak the language of the host party fluently is a serious obstacle to integration into the national culture, to maintain social and psychological well-being in the territory of the host university. Students' English proficiency also correlates positively with their cross-cultural psychological, sociocultural, and academic adaptations in a multicultural environment. The problem of the "language barrier" is listed (68.4% of respondents) as the main one in the process of adapting Chinese students. Answering questionnaire questions, students outlined their vision of adaptation problems in a multicultural environment: "language barrier" (68.4%), psychological barrier (15.9%) and cultural barrier (15.7%). The results of the research work (Alikberova A.R., 2014) show that perceived social support can prevent the physiological negative effects of the disease, increases self-esteem and self-confidence, have a positive impact on the social adaptation of students. The findings of the studies are consistent with the results of our work. One of the factors of successful social adaptation in a multicultural environment is the competence and interest of university teachers in this matter (Alikberova A.R., 2014) The study found that teachers had good knowledge, attitude and stable competencies related to the subject under study, which was also confirmed by us. A number of research papers (Wu, Going, 2007) show that distance learning is more complex, taking into account the factor of finding students at a distant geographical distance from the university. At the same time, the results indicate that students studying at a distance were relatively well adapted academically and socially, to a greater extent than students in full-time education (Wu, Gouging 2007). We also came to similar conclusions as a result of our study.

## **Conclusion**

The globalization of the educational process has led to the fact that students and teachers from all over the world now have an unlimited opportunity to participate in world educational activities, which is dictated by the development of modern information and communication technologies. Global communication predetermines a positive attitude towards the concept of a multicultural phenomenon and adaptation in a intercultural environment. One of the key education priorities of this century is the issue of internationalization, aimed at developing awareness and skills formation and personality adaptation in a multicultural environment. The factor of the development of ICT, the popularization of the form of distance learning determines the need to conduct research on the phenomenon of social adaptation of Chinese students in a multicultural environment in the conditions of distance learning.

The study allows us to conclude that the level of social adaptation in a multicultural environment among Chinese students of the 1st year in distance learning has significantly increased in comparison with those who studied full-time in previous periods. This indicates the effectiveness of the development of comprehensive methodological approaches to the implementation of distance learning aimed at the social adaptation of foreign students in a multicultural environment.

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# **Formation of an Ecological Worldview By Means of Computer and Mobile Gaming Technologies**

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**Abstract.** This scientific work provides a brief theoretical justification and the possibility of using information gaming technologies in the process of forming an ecological worldview at various stages of the general education system. It is determined that ecological thinking and problems of ecological education in the conditions of modern media space is consecrated. A theoretical review of some mobile and computer applications and a practical possibility of their use in accordance with the age and individual characteristics of students are discussed in the framework of the article.

**Key words:** ecological worldview, ecological education, game, media space, information technology, mobile and computer gaming technologies.

## **Introduction**

The relevance of this article mainly corresponds to the requirements of the time. Environmental education is one of the most important factors in the formation of a full-fledged, harmoniously developed personality focused on the preservation and multiplication of the world's natural wealth, rational use of natural resources of the native country and even formation of national and racial tolerance among civil society. Today, the education of an ecological worldview is a leading issue in many educational systems of the developed countries of the world. In our context, environmental education most often has the feature of a separate discipline and in the system of its teaching, various methods, forms of organization of educational activities and methodological techniques are still poorly considered and justified.

One of the problematic areas of the formation of an ecological worldview is the use of information technologies in the process of education, the process of transition from educational and academic to a digital mode. Meanwhile, in modern conditions of constant digital noise and pollution of the media space, the teacher has to fight for the student's attention with various distracting media objects. Mobile and computer games are elevated by most teachers to the rank of the main enemies of the educational process, while they can also be used as a powerful means of educational influence on students in the selection and combination of scientific, theoretical substantiation of game material, pedagogical foundations of education and didactics of the process, together with the brightness and colorfulness of the gameplay. The current scientific work is devoted to the consideration of this problem, the object of which is mobile and computer gaming technologies in the educational process, and the subject is environmental education at different stages of the educational process.

The purpose of this work is to consider the use of mobile and computer gaming technologies in the context of educating an ecological worldview.

## **Literature review**

Today, there are many approaches to the definition of the concept "ecological worldview", for example, modern teachers who were engaged in the field of pedagogical ecology V.V. Lisnichenko and N.B. Lisnichenko, gave the following definition for an ecological worldview: "Ecological worldview is a set of views, assessments, principles that determine person's general vision of his place in the world around him, and at the same time life positions, behavior programs, actions in the social and natural environment that allow not to disturb the natural balance in the system "man - society - nature"" (Lisnichenko V.V.&Lisnichenko N.B. 2015), at the same time academician D.K. Belyaev (Belyaev D.K. 1986) defines the ecological worldview much more succinctly, namely as an insistent conviction, a desire to preserve and understand our influence on nature, and N.G. Vasiliev (Vasiliev N.G. 1985) claims that the concept of ecological worldview includes "a set of scientific and general knowledge about the relationship of society with nature, ethical, aesthetic, value attitudes to this subject, that is,

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specifically subjectified features of ecological consciousness, reflecting the concrete social environment and natural conditions of life of the subject of spiritual and practical development of the nature".

Meanwhile, based on the specifics of the subject of Ecology, the concept of ecological worldview can be deduced by one's own definition as follows: Ecological worldview is the awareness of one's own place and importance in the natural system of the nature. This approach to the definition is the most objective for the simple reason, as often, a person is considered as the highest stage of the evolution of the nature, separated from it by a certain sign. However, it is widely known, man is only a part of the nature and even far from the highest, because, as the famous scientist biologist Charles Darwin defined, the dominant in the environment is not perfect or strongest species, but the most adapted species in this niche (Darwin Ch. 1991). Thus, we are coming to the realization that preservation of the nature and natural diversity is not a necessity for the sake of the nature itself, but for the survival of our species. Reasoning in this direction, we approach the main problem of ecology – its misunderstanding and interpretation associated with the insufficiency of our environmental education.

## **Methodology**

The methodology of the research is the study of psychological, pedagogical, methodological and technical literature, computer educational games by foreign and local authors whose authority and scientific reputation are recognized by the scientific community. To solve the tasks in the paper, the following methods were used: theoretical analysis (comparative, systematic, logical, generalization of experience): the study of psychological, pedagogical, methodological and technical literature, electronic educational resources; observational (direct, indirect, included observation, self-observation) (Verbach K. & Hunter D. 2015), (Zichermann G. & Linder J. 2013).

To date, the main share of environmental education in the general education system is education within the subjects of Natural science and Biology, which include both an intra-curricular form of work and extracurricular (Sukhorukova O.E. 2013). At the same time, despite the wide study of this issue and the availability of a huge amount of literature on this topic, many methods and techniques of educating ecological thinking are rarely used in general education practice and there are quite a lot of factors influencing their use. One of these factors is a lack of necessary conditions for the implementation of extracurricular activities, for example, the absence of a school site for conducting environmental experiments with students, the absence of a zoological and botanical corner, as well as a lack of opportunities to observe the natural environment in the urban structure of the surrounding area.

One of the methods of overcoming this problem may be the use of ICT in the process of educating an ecological worldview. These include, for example, virtual excursions, 3-D models considered in and out of the lesson, the construction of the principles of biological systems, the use of interactive ecological educational presentations and tasks of an ecological nature, as well as many other methods and techniques (Shakhmurova G.A. et al., 2015-2020). In addition to the above-mentioned problem, computer and mobile technologies also solve the issue of providing a variety of teaching methods, especially in the conditions of such a rapidly developing academic discipline as Ecology, as well as mobile and computer technologies are notable for their brightness, visibility and accessibility for many modern students, especially for primary and secondary school children.

One of the special and rarely considered forms of using mobile and computer technologies in the pedagogical sphere is mobile and computer games, which combine advantages of game forms of teaching and educating students in combination with advantages of operational electronic systems themselves. Of course, such a form of presentation of material cannot and should not be used by a teacher as the primary basis of the didactic and educational process, however, it may be used as a consolidating, actualizing factor, a factor of team cohesion around a common task, as a way of presenting additional material in a publicly accessible form or as a means of solving the problem of the absence of an object for research by students.

This kind of game can be divided into two broad groups:

- Context-based learning games;
- Purposefully-educational games.

In this system, context-learning games can be many existing computer and mobile games or applications that do not have a direct context and an obvious environmental orientation, but include elements of environmental context. So, for example, these will be various natural simulators that allow the child to plunge into the natural habitat of an animal. Such games are especially common today among elementary school students and the first stage of secondary school; however, it is necessary to emphasize that before recommending the game as a

complementary or general development game aid, the teacher should carefully approach the issue of studying the game. Many of these games eventually acquire an exclusively playful character and abandon scientifically based mechanism of the game (Sabiryanova, Yu.Yu. 2016). For example, these will include a mouse simulator, where, for the sake of the colorful gameplay and at a certain level of development, the mouse is able to kill a cat, a snake, a badger and many other animals, and a spider is often larger than a mouse. In turn, an excellent example can be, for example, Plague.inc, which can serve as a visual aid both for considering environmental features of the spread of various types of diseases, and as an illustration of the complexity of countering the spread of diseases, where a student can feel as the head of WHO and, perhaps, reconsider his attitude to the recommended sanitary measures. In addition, there are many games that reflect the current ecological state and unequal struggle of environmental scientists with the consequences of man-made environmental pollution.

Meanwhile, as mentioned earlier, games of this type can only be used as a supplement to the educational process and be supported by some kind of didactic task, for example, returning to the example of a disease simulator, you can give students the task of writing an essay on the importance of preserving personal health to ensure the safety of the whole society or on the nature of the rapid spread of certain pathogens in the population due to the poor environmental situation.

A special and most significant group of computer or mobile games and applications are special games or didactic ones. To date, there are very few such games in the public domain and most of them are at the stage of testing and implementation in general pedagogical practice, however, some developers are directly aimed at the pedagogical audience. For example, the Mozaik3D app from the developer company Mozaik Education, which has more than a thousand different 3D game models available, including environmental and biological topics, as well as History, Physics, Chemistry and many other school disciplines, can be counted among them. Games specially designed for individual purposes can also be included in this group, for example, a teacher can unite students of the whole school into a single ecosystem by developing an interactive mobile gaming application. For example, for each "Eco-friendly" case, the student will bring points to his group or class, and the teacher will monitor compliance by analyzing photos and videos of the students' work results sent through the application. At the same time, a distinctive feature of such an application could be an open database system, an electronic library and the availability of various mini-applications for entertaining students in their free time.

## **Conclusion**

Thus, despite the low level of study and insufficient material on computer and mobile gaming methods of educating an ecological worldview in the open access, having delved into the peculiarities of using the Internet. A talented teacher can find enough applications and games, however, contextual learning can also be used for the same purposes, which, meanwhile, as practice indicates, is often even much more effective in terms of education than a special one, because not only do we influence the environment, but to a greater extent – what surrounds us affects us.

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# **Social Enterprise Development in Vietnam: Directions and Challenges**

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**Abstract:** Vietnam is currently one of the most dynamic economy in South East Asia. The “Doimoi” (Renovation) launched by the government in 1986 have spurred economic growth. Social enterprise (SE) are businesses with a social mission, set up to address social challenges. In past decades, interest in SE has grown significantly in Vietnam. In 2014, SE was officially recognised as a distinct type of organisation in Vietnam’s Enterprise Law. This was an important milestone to develop new SE. Objectives: This study aims at mapping the Vietnamese SE landscape and identifying key issues that need to be addressed to create a healthy and sustainable ecosystem for SE to develop. Methodology: The study used Pressure-State-Response (PSR) and SWOT frameworks to analyze the current situation and challenges of SE in Vietnam. Data collection includes (i) surveying 40 SE of different industries and localities (ii) in-depth interviews with stakeholders including management agencies, SE and business associations. Results: We found that SE in Vietnam is diverse, vibrant and growing. There is a new wave of start-up SE in Vietnam. These are profitable businesses and optimistic about future. They take diverse legal forms and work across a range of sectors. They are supporting disadvantaged people and are nurturing spaces for young people to take on leadership roles. Yet, SE do face barriers, and support is crucial to helping them overcome these. The government has developed significant policy steps to support SMEs in general and SE in particular, but more work is needed, particularly on policy implementation. Recommendations: (i) stakeholders can do more to help spread greater awareness and understanding of social enterprise across Vietnam more widely. (ii) the State should continue to issue supportive policies to develop SE, especially preferential policies on taxes, land, finance and infrastructure. (iii) further capacity building for the SE sector.

**Keywords:** Social enterprise, supporting policy, economic growth, social objectives, Vietnam

## **I. INTRODUCTION**

Vietnam is one of the most dynamic countries in South East Asia. The Doimoi ‘Renovation’ reforms, launched by the government in 1986, have spurred economic growth that has transformed Vietnam from one of the world’s poorest nations to one with lower-middle income status. Robust growth has boosted job creation and incomes. In 2018, the country’s gross domestic product (GDP) increased by around seven per cent. This was due largely to expansion in the service sector, which accounts for over 40 per cent of GDP, as a result of buoyant private consumption and record tourist arrivals. Strong industrial and construction growth accounting for 34.28 per cent of GDP is also a major contributor, while strong performance in the export-oriented fishery subsector has led to an increase in agriculture output (General Statistic Office, 2019).

The population of Vietnam reached nearly 95 million in 2018, up from around 60 million in 1986. It is expected to expand further to 120 million by 2050. Currently, 70 per cent of the population is under 35 years of age, with a life expectancy of close to 73 years. However, the population profile is ageing rapidly. There is an emerging middle class, currently accounting for 13 per cent of the population, and this is expected to reach 26 per cent by 2026. The labour force is made up of nearly 50 million people, with a low unemployment rate of only two per cent. As Vietnam works to prepare its workforce for future labour market trends, the World Bank has suggested that future employment in Vietnam will still depend on a mix of traditional and emerging sectors.

While both current and future economic growth in Vietnam are very promising, the benefits do not always extend to all areas of society. Vietnam is an ethnically diverse country with 54 recognised ethnic groups. The majority of the population (85.5 per cent) belongs to the Kinh ethnic group, and the 53 other ethnic groups in Vietnam account for the remainder of the population – around 13.4 million people. Many of these ethnic minority groups are concentrated in geographically remote and mountainous regions of the country. Inequalities between the Kinh ethnic group and ethnic minority groups remain wide and persistent, especially in education

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and training, employment and income, healthcare and reproduction. The gender gap among and within ethnic minority groups also persists.

Social enterprises are businesses with a social mission, set up to address these challenges. In the past decade, interest in social enterprise and social entrepreneurship has grown significantly in Vietnam, not only among budding entrepreneurs, but also among non-governmental organisations, policy makers, funders and academics. In 2014, social enterprise was officially recognised as a distinct type of organisation in Vietnam’s Enterprise Law. This was an important milestone, enabling the ecosystem to further develop with the support of a range of stakeholders. Subsequently, new social enterprises have emerged and other organisations that were already pursuing a social enterprise model have embraced the concept and terminology. More intermediaries and networks have been founded; several universities have started social enterprise incubation programmes; and further new social enterprises have been established.

The purpose of the study is to map the Vietnamese social enterprise landscape and to identify key opportunities and issues that need to be addressed to create a healthy and sustainable ecosystem for social enterprises to thrive.

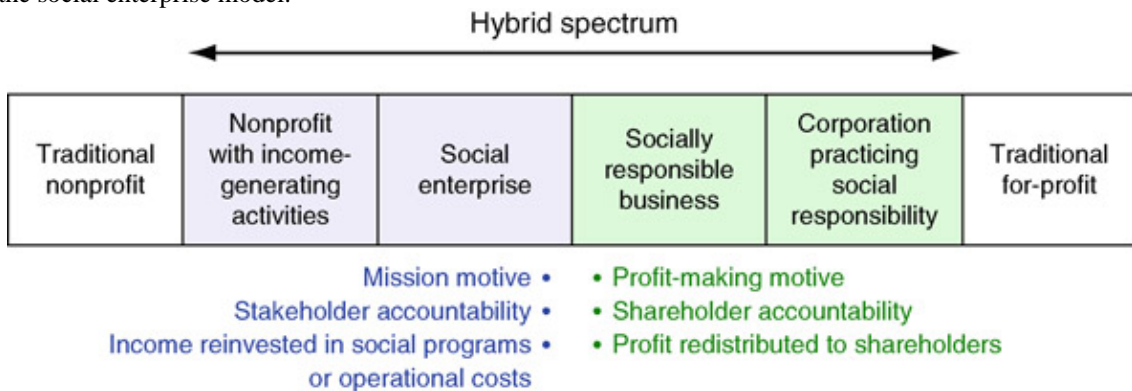
**II. LITERATURE REVIEW**

Social enterprise has a long history around the world, though under different names and with different characteristic. The first description of a social enterprise as a democratically owned and run trading organisation that is financially independent, has social objectives and operates in an environmentally responsible way, was put forward by Freer Spreckley in the UK in 1978 and later written as a publication in 1981.

In the Social Enterprise Development Strategy 2002, the British Government defines: “Social enterprise is a business model established to realize social goals, and uses profits to reinvest for that goal or for community, instead of maximizing profits for shareholders or owners”. The OECD defines: “Social enterprises are organizations operating under different legal forms that apply entrepreneurship to pursue both social and economic goals at the same time. Social enterprises often provide social services and jobs for disadvantaged groups in both urban and rural areas. In addition, social enterprises also provide community services, in the fields of education, culture, and environment.”

Social enterprises have business, environmental and social goals. As a result, their social goals are embedded in their objective, which differentiates them from other organizations and corporations. A social enterprise's main purpose is to promote, encourage, and make social change. Social enterprises are businesses created to further a social purpose in a financially sustainable way. Social enterprises can provide income generation opportunities that meet the basic needs of people who live in poverty. They are sustainable and earned income from sales is reinvested in their mission. They do not depend on philanthropy and can sustain themselves over the long term. Their models can be expanded or replicated to other communities to generate more impact.

Social enterprises are not only a structural element of a non-profit. A large portion of social enterprises are non-profits; however, there are also for-profit social enterprises. Social enterprises are often regarded—erroneously—as nonprofit organisations, although many do take on a nonprofit legal form and are treated in academic literature on the subject as a branch or sub-set of nonprofit activity (especially when contrasted with Social Businesses). Social enterprises in the nonprofit form can earn income for their goods or services; they are typically regarded as non-profits that use business inadequate skills, resources, and capabilities for the adoption of the social enterprise model.



When social enterprise first emerged, much of the scholarly literature focused on defining the key characteristics and definitions of social enterprise. Currently there is more literature and research on the emergence of the social enterprise sector, as well as the internal management of social enterprise organizations. Due to the dual purpose missions of social enterprises, organizations cannot directly employ the typical management strategies of established business models. Recent academic literature has argued against prior positively held views of social enterprises success in striking a balance between the two tensions, and instead arguing that the social mission is being compromised in favor of financial stability. Prioritizing social good over financial stability contradicts rational firm management, which typically prioritizes financial and profit-seeking goals. As a result, different management issues arise that range from stakeholders (and management) agreeing on the firm's goals, but disagreeing on an action plan; to management and stakeholders disagreeing on the firm's goals. Some social enterprises have taken on same-sector and cross-sector partnerships, while others continue to operate independently.



Source:

Currently, scholarly articles also focus on internal factors for SE success. Smith et al. (2012) examine the effects of mission consistency of SEs versus their non-profit parent's donor behavior. Although this does fill the gap in empirical research, the emphasis is on internal factors, not on the external environment. Other authors study the challenges SEs encounter throughout implementation, such as balancing their operating costs with their actual impact, be it financial or social (Foster and Bradach, 2005; Zietlow, 2001). Impact itself is another common theme in SE research, such as what an SE can do to lessen or solve a social problem, which has been explored by Teasdale (2010), Sakata and Prideaux (2013). Here are internal implementation factors and SE characteristics identified in the literature as keys to a successful SE: strong leadership, clear market orientation, positive organizational culture, social-transformation strengths, financial self-sufficiency and innovation (Madill et al., 2010; von der Weppen and Cochrane, 2012). The role of innovation stands out again in Weerawardena and Sullivan Mort (2012), where the authors suggest that it directly affects SEs' social impact. Lasby (2013) also identifies internal factors, such as staff size, as influencing a non-profit's potential to earn income.

### III. ANALYTICAL MODEL AND METHODOLOGY

In this study, the theoretical framework employed to analyze SE situation in Vietnam is PSR model (*Pressure-State-Response*). The PSR framework was firstly developed by Tony Friend for analyzing the interactions between pressures, state of the situation and responses. Since 1970s, Organization for Economic Cooperation and Development (OECD) applied an adaptive version of this model to its works on economic and environmental reports. The usefulness and relevance of PSR model was then re-evaluated during 1990s when OECD initiated environmental indicators for assessing management performance. In that process, OECD

nations agreed that PSR framework was a useful and robust model and should be used in studies on environmental data and indicators by OECD.

PSR framework for SE is based on the idea of causality: social issues put pressures on social governance. Societies respond to these changes through policies and management solutions (response) of which SE is a specific tool. In the model, pressure reflects the exposure of social systems to external factors. State reflects the social and economic impacts to economic systems of the region/nation caused by pressures. Response represents measures taken by societies facing such socio-economic issues such as measures to solve the problems.

Combining the PSR model and SWOT analysis of the SE system from primary and secondary data, the paper uses following analytical framework:

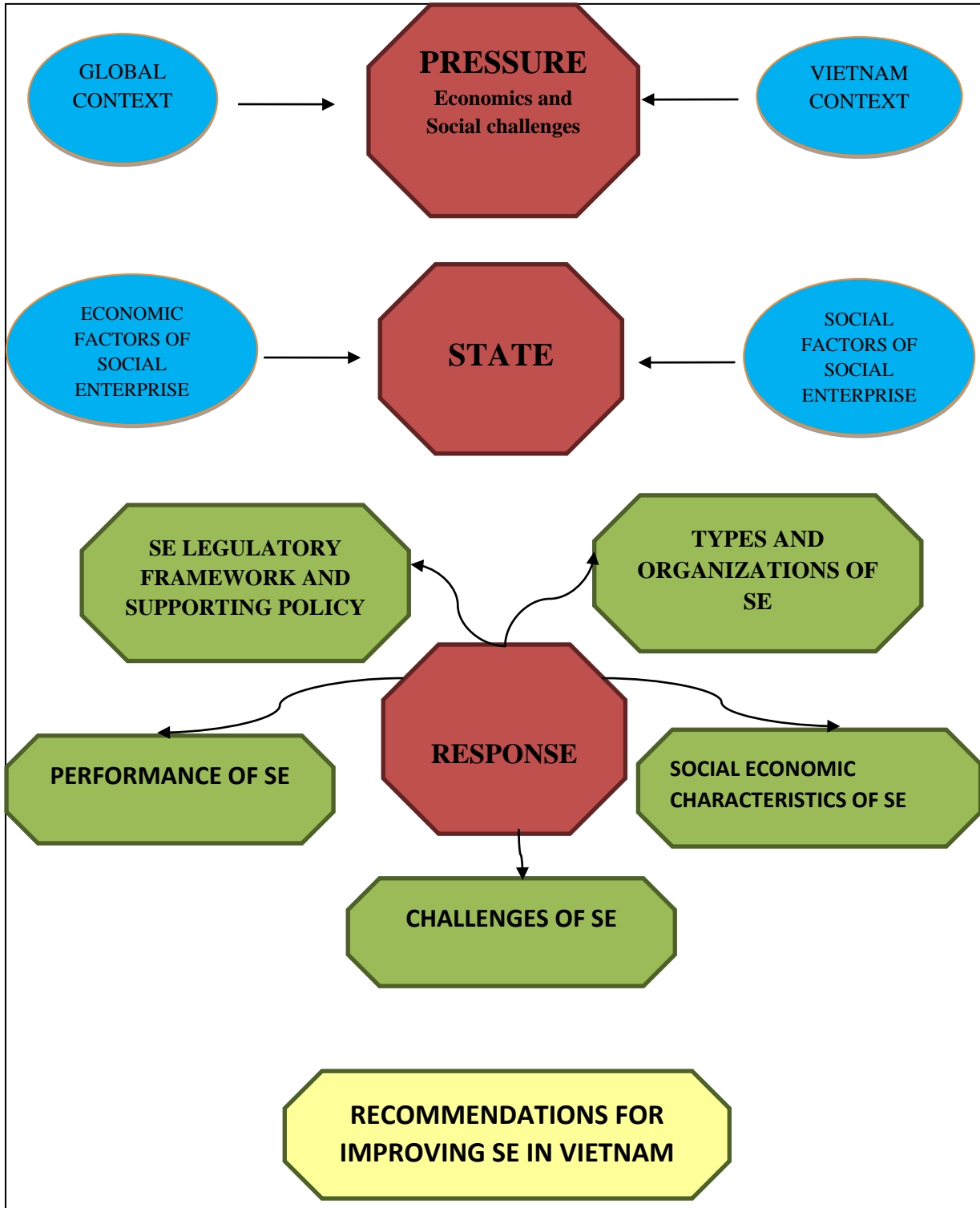


FIGURE 1. Analytical model for SE in Vietnam

Data collection process of this study consists of reviewing existing documents, combined with information collected from in-depth interviews with management officers and SEs.

In the first step, analysis reports and studies from literature on the related issue were studied. These reports come from Web of Science, reports of World Bank (2017), Ministry of Finance (MOF) (2019), Ministry of Planning and Investment (MPI) (2019) and ADB (2020).

Second, the authors conducted 8 in-depth interviews with SE stakeholders including managers from MOF, MPI, VCCI and SEs. The interview contents are related to the actual implementation and management of SE and specific challenges in the development of SE as well as recommendations.

In addition, a survey of 43 SEs in different sectors and regions was also conducted to collect primary information on the characteristics and performance of social enterprises, the challenges and opportunities of the area.

## **IV. RESULTS**

### **4.1. Development process and legal framework of social enterprises in Vietnam**

The development process of social enterprises in Vietnam can be divided into three main stages as follows: (i) before Doi Moi (1986), social enterprises associated with collective ownership, operating in the form of cooperatives to serve the needs of social enterprises. of disadvantaged community groups; (ii) from 1986-2015, social enterprises associated with NGOs and funding sources mainly from foreign organizations; (iii) now, since Vietnam became a low middle income country. Social enterprises operate according to market principles; capital sources shift from external financing to income from business activities.

#### ***Before Doi Moi (1986)***

In a centralized and subsidized bureaucracy, the state is the sole entity responsible for ensuring that social services are distributed to the people. The formation and operation of socio-political organizations such as the Women's Union, the Youth Union, etc., have always been under the leadership of the Party, closely linked to the state management system (state management) and are the only place to stay. through which individuals can participate in community activities. During this period, social organizations independent of the state such as NGOs were not allowed to operate in Vietnam. Besides, only the state economy and the collective economy are recognized as the two main economic components of the country. In that context, a cooperative is the only appropriate form of socio-economic organization established to meet some special needs of its members in the spirit of community: cooperation, sharing share and benefit. A cooperative is considered a community-owned organization as well as an independent economic unit. Therefore, cooperatives can be considered as the earliest social enterprise model in Vietnam. In terms of policies, the state also has many policies to encourage the development of cooperatives right from the early years of building socialism in the North. By 1987, the number of cooperatives across the country reached nearly 74,000, operating in many fields, contributing to meeting the urgent needs of the community.

#### ***The period from 1986 to 2015***

Although social enterprises have appeared in the form of cooperatives for a long time, business activities for social goals with all basic features of the social enterprise model have only started to develop since the Doi Moi policy. was implemented in 1986. This is a milestone marking the recognition of new economic sectors, namely the state capitalist economy, the private capitalist economy and the smallholder individual economy. As a result, the proactive role of individuals and communities in providing and exchanging services that meet people's needs has been recognized and developed. After 25 years of implementing Doi Moi, Vietnam now has about 500,000 private enterprises, 9,500 cooperatives and tens of thousands of cooperative groups operating and contributing to economic growth.

After the US embargo was lifted in 1994, hundreds of international humanitarian and development organizations entered Vietnam, bringing a huge source of humanitarian aid and ODA. In the period 2005-2010 alone, the total amount of ODA committed to Vietnam is 31 billion USD. This is the period when the state has many open policies, creating a legal framework for the development of non-state economic and social organizations. Decree No. 71/1998/ND-CP on grassroots democracy regulation and legal documents issued in 1998 for the first time officially encouraged the participation of social organizations and citizens in the process of formulating, implementing and monitoring the implementation of policies in the community. In order to promote the participation of the people in the process of community building and development, the state has taken active steps to promote cooperation between different organizations, especially through strengthening the health of the community. strong political and social organizations (mass organizations). Decree 35-HDBT (1992) has provided a number of solutions to promote the establishment of science and technology organizations by individuals. Decree 177/1999/ND-CP and later Decree 148/2007/ND-CP provided the basis for

the establishment of social and charity funds. The role of community organizations is particularly emphasized in providing basic services to the community such as water resource management, poverty alleviation, primary health care, universal education, and health insurance. environmental protection.

The State also pays special attention to and encourages cooperation between domestic and foreign NGOs and local authorities. The above policies have helped organizations and businesses to develop the community really flourish. Statistics show that there are more than 1,000 NGOs, 320 associations operating at the national level and 2,150 associations operating on the principle of voluntariness and autonomy at the central and local levels. Almost all of these organizations receive financial support from international NGOs and donors to maintain operations and provide services to the community. In addition, in Vietnam, there are thousands of community-based organizations such as cultural houses, clubs and business activities belonging to mass socio-political organizations (for example, the Women's Union), veterans' association, disabled people's association, etc.) and thousands of non-business units are performing the function of providing social welfare of the state (providing public services such as waste management, water resources, etc.), etc.). These organizations all have some characteristics of Social Enterprises and are likely to transform into Social Enterprises in the future.

### ***Period 2015 to present***

During this period, Vietnam became a middle-income country, the economy became richer and more active, and poverty status improved. As a result, bilateral development organizations have withdrawn from Vietnam and ODA funding sources have also decreased significantly.

In that context, the introduction of social enterprises is considered as a new solution suitable for the current transformation context. The strength of social enterprises is to solve two social and economic purposes, in which social goals are the key and economic goals are the means to achieve social goals on a large scale. lasting. In 2014, Social Enterprises were officially institutionalized in the Law on Enterprises of Vietnam. This is an important turning point marking the development of social enterprises in Vietnam. In Vietnam, the concept of social enterprise is still relatively new and was widely unknown before 2014. According to this law, the concept of social enterprise was officially recognized for the first time as ***'an enterprise that is registered and works to resolve a number of social and environmental issues for a social purpose; and reinvests at least 51 percent of total profits to resolve the registered social and environmental issues'*** (Article 10, Enterprise Law 2014). Decree No. 69/ND-CP 2015 guidance on the implementation of the Enterprise Law also states that government support for SE operating in public services could include:

- Subsidies for infrastructure and land, such as long-term leases at a favorable rate
- Receiving or leasing land with site clearance and exemption from land-use levy or rent
- Exemption from registration fees charged for the use of land and ownership of assets attached to land
- Preferential tax policies, such as a ten per cent enterprise income tax rate, exemption from enterprise income tax for four years and a 50 per cent reduction for the subsequent five years
- VAT exemption for medical services and treatments, education and import of machinery and equipment for scientific research or aid.

## **4.2. Organization and activity orientation of social enterprises in Vietnam**

Since before there were specific regulations on social enterprises in Article 10 of the Enterprise Law 2014, social enterprises in Vietnam existed mainly in the form of cooperatives serving the needs of weak groups. Therefore, social enterprises are associated with NGOs with funding mainly from abroad. A report conducted by British Council in 2018 showed that about 25% of social enterprises were established before 2008, of which some started operating in the 1990s and one in the early years. 1978; 31% of social enterprises were established in the period 2008 - 2013, this is a period of economic difficulties due to the world economic and financial recession and crisis; 14% of social enterprises were established in the years 2013 - 2015; and 30% of enterprises established after 2015.

According to MPI, by the end of 2020, there are about 200 social enterprises (social enterprises) and branches, representative offices of social enterprises registered to operate with the business registration agency in Vietnam. However, in reality, there are still many organizations that have all the same characteristics and activities as social enterprises but have not yet registered.

In Vietnam, social enterprises have 3 main legal forms including: (Non-profit social enterprise), (Not-for-profit social Enterprise), (Social Business Ventures).



Non-profit business	Not-for-profit enterprise	Social-oriented, profitable enterprise
<ul style="list-style-type: none"> <li>- Acting in the form of non-governmental organizations (NGOs).</li> <li>- Their operating capital comes from attracting individuals and organizations with investment needs for society by offering useful programs, plans and solutions to solve social problems.</li> </ul>	<ul style="list-style-type: none"> <li>- Operating under the same mechanism as charity organizations, with absolutely no profit goals.</li> <li>- Usually, these are businesses run by entrepreneurs and investors who already have capital and financial potential in ordinary businesses that they own or are members/shareholders.</li> </ul>	<p>Enterprises must seek and implement business opportunities to be able to generate profits themselves, the ultimate aim is to reinvest towards environmental and social goals.</p>

Non-profit social enterprises operate in forms such as: Centers, associations, funds for people with disabilities, people living with HIV/AIDS, women experiencing violence, etc. from the NGO background. The difference between non-profit social enterprises and NGOs is that they have highly competitive solutions to address specific social needs, so they can attract investment capital from individuals and organizations. investment for social impact.

This type of enterprise is formed with the goal of a sustainable combination of social mission and economic goals, in which economic goals are the means to achieve social development goals. Profits are used to reinvest or expand the social impact of the business. The difference between not-for-profit enterprises and conventional enterprises is that they offer innovative solutions and use market leverage to address social issues and environmental challenges. school.

These businesses have seen the opportunity and advocated to build their businesses with the role of driving force for drastic changes in society or protecting the environment. This is also the difference of this type of business compared to other business models. Businesses still make profits and play a big role in supporting the disadvantaged in society, solving environmental problems to ensure sustainable development of society. Some are registered as social enterprises, while others are considered as ordinary private enterprises. According to data from the System of Business Registration Administration (MPI), by the end of April 2020, the legal form that social enterprises register with the business registration agency is mainly public, joint stock companies and limited liability companies. Since the current law only recognizes the legal form of Social Enterprises as an enterprise, there are no social enterprises registered to establish with the legal form of a cooperative or a business household.

#### ***Field of activity and income of social enterprises***

Currently, social enterprises in Vietnam operate in many different industries and fields, but the ratio is not equal. According to the Research Report on Current Status of Social Enterprises in Vietnam, the most popular field in which Vietnamese Social Enterprises operate is agriculture - accounting for 35%; followed by health (9%), education (9%) and environment (7%); child care 5%; employment and skills 4%; retail 4%; business support 3%; industry (web; design, print) 2%; health care 2%; financial support and services 2%; social care 2%; traffic 2%; culture and entertainment 1% and other fields 35%. It can be seen that, social enterprises in Vietnam have quite diverse fields of activity, but still mainly focus on agriculture.

#### **4.2. Challenges of social enterprises in Vietnam**

Firstly, the legal framework and policy system are not yet complete, have not yet attracted many individuals and organizations in society to participate, so the number of registered social enterprises is still limited, after 6 years. The 2014 Enterprise Law came into force, the number of social enterprises and their branches and representative offices registered to operate with the business registration agency is still quite modest (140 enterprises). Meanwhile, in fact, the number of individuals and organizations operating like a social enterprise is much larger. Second, social enterprises face financial difficulties and high-quality human resources. According to social enterprises in Vietnam, recruiting skilled staff and managing finances are the top challenges they face. Also according to the survey, up to 40% of businesses polled said that recruiting staff or volunteers was a big barrier and 35% said they lacked business skills. In addition, 35% of social enterprises consider financial problems as a major barrier to growth. In which, having difficulty in accessing investors, limited investment scope for them

(44%); approval procedures and terms are not appropriate (34%); have a guarantor/collateral (26%); insufficient knowledge of social enterprise (25%); and the need for lenders' margins or fees (24%) also matters.

Thirdly, social enterprises have not received many incentives and investment support in accordance with the law. However, it cannot be denied that some social enterprises are being established for free, passively existing, lacking in adaptation to the growth rate and fluctuations of the economy. The main reason comes from the goals and business projects of Social Enterprises, because many businesses do not show any difference when compared to charity funds and non-governmental projects. The definition of Social Enterprise itself has been expanded compared to the provisions of the Enterprise Law 2014. Currently, social enterprises in Vietnam include: innovative business models with different business methods to solve problems. social and environmental issues. According to this new definition, many social enterprises are not registered under the Enterprise Law as before. Instead, they register under the model of cooperatives, NGOs, and charity organizations. Even many social enterprise owners also mistakenly believe that they are charity workers, not the owner of a business that serves the community's interests. As a result, many social enterprises in Vietnam, especially non-profit social enterprises, depend entirely on aid sources and do not have their own sources of income. When the budget is exhausted, it also means that the business stops operating and is dissolved. Furthermore, when they do not register under the model of social enterprises according to the law, it is also difficult for these enterprises to claim to receive preferential policies and support from the State for businesses.

Another challenge that social enterprises are facing is the lack of means of communication, promotion, and investment policy advocacy. It is clear that the mass media is still not interested in the existence of social enterprises even though the contributions of social enterprises are not small. This paradox is somewhat unfair when comparing the level of attention of the press and media agencies to innovative startup models. Not to mention that many communication and promotion activities of social enterprises are misunderstood and suspected of being scams. The promotion of smart software application in detecting and taking care of autistic children A365 by the Center for Population Health Initiatives in conjunction with the Vietnam Autism Network is in a state of being considered by many consumers. tricks and scams are not the only cases that social enterprises have ever faced. Because of many challenges in the communication process, many social enterprises have to operate quietly, receiving little support from the community. On the contrary, many individuals who wish to use social enterprises' projects also face difficulties because they do not know the presence of these companies, organizations and cooperatives.

Last but not least, social enterprise model are being seriously threatened because of the influence of the Covid-19 pandemic, which continues to have complicated developments. Reports and predictions about the fate of social enterprises have been published recently, making those who are interested in this model wonder. Specifically, according to a survey from the Center for Social Entrepreneurship and Innovation (CSIE-National Economics University): only 68% of Social Enterprises remain in operation until the end of the second quarter of 2020. Also according to the center's assessment. In this situation, up to 95% of social enterprises will face the risk of bankruptcy if the pandemic lasts until the end of the year. The above worst scenario is expected to directly affect 28,000 workers and more than half a million people in Vietnam who are benefiting from social enterprises. In fact, this number will be much larger if we estimate the difficulties and challenges that 22,000 businesses are facing (including 1,000 social enterprises). Therefore, quickly having solutions to solve difficulties, supporting social enterprises to stabilize and develop is considered a difficult problem with many challenges.

## **Conclusions and Recommendations**

Over the past 20 years, the Government's Doi Moi policy and open-door policy have created favorable conditions for the strong development of the business sector of all economic sectors and social organizations outside the home country. The economic growth achievements that Vietnam has achieved clearly have the important contribution of the businesses, as well as the role of social organizations in the implementation of many socio-economic goals, such as hunger eradication, poverty reduction, environmental protection, social justice... Besides, a new organizational model is emerging as a third option, full of potential. Stemming from the practical needs of life, there have been many initiatives developed on the basis of using business as a tool to bring about solutions more sustainable society for the community. This combination model is SE

In the world, SE have become a large social movement across all continents. Many countries have policies in place encourage and promote SE on the view that the State should cooperate and share responsibility for providing social welfare association with SE to achieve higher efficiency. In the context of our country's current economic difficulties, the trend of restructuring, fiscal tightening, and public debt reduction government, and in the face of increasing and complex social and environmental problems, we believe that the development of SE is

very necessary for the comprehensive and sustainable development of the country. This is the time appropriate to improve the awareness of society as well as of the State about the nature, role and meaning of the model SE. It can be seen that SE have many potential advantages, stemming from their non-profit nature and social goals sustainability of this model. SE can completely become effective partners of the State, helping the Government countries achieve their social goals.

SE are a mixed model, using business activities to achieve social goals. They do not work because profit purposes. In fact, SE are the agents promoting innovation and initiatives for society. They go into the niche market no one has gone, even creating new products, creating a new market, or meeting the needs of customers target groups are often neglected in society, or solve socio-environmental problems arising in the country's economic growth. SE are entrepreneurs with high social concern; especially they must overcome many difficulties and obstacles to be able to maintain the model of SE that harmonizes sustainable social goals of sustainability and the harsh test of the market.

It can be said that this is a missing 'piece' in an already established picture of the state sector, private enterprises, and NGOs. This is a 'win-win' partner, effectively supporting the State in implementing perform social goals. Each of the above areas has its own advantages and specific roles, however, SE can be considered as a solution or tool to complement the weaknesses of the remaining areas such as promoting initiatives society, mobilizing potential resources both intellectually and materially among the people, the effectiveness and sustainability of social solutions...

The time has come, the State needs to have an official recognition for the social enterprise model and the role of SE. Mechanisms, policies need to be developed to create a stable legal framework for the operation of SE, creating favorable conditions in favor of social initiatives being more easily implemented in practice, encouraging and promoting strong development social entrepreneurship in Vietnam.

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# **During And After the Quarantine of Covid19 A Study on Economic and Psychological Concerns in the Albanian Population**

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**Abstract:** This empirical study investigates the relationship between economic concerns and psychological issues in relations with levels of education. The population of our study consists in adults surveyed online two times in two different timelines: during the quarantine at the beginning of the pandemic 2020 and in fall-winter 2021 while people were living in the pandemics. Qualitative statistical analysis was conducted using the non-parametric Chi square tests and crosstabulation to study the relationship between categorical variables. Results showed consistency in reporting in both groups showing that family is perceived from the university and post-university respondents as the source of perceived support in times of difficulties. Results show that people rely more on their mindset and experiences to pave the way of managing difficulties and crises in life and they make no usage of coping mechanisms and the level of education is not indicative. Albanian adults' biggest fear in times of Covid 19 during and after the quarantine is the fear of infecting ones' family members. Respondents do not seek for help or any kind of professional support related to their physical and psychological health. The respondents' attention is majorly captivated by job and economic concerns, despite their level of education. Conclusions show that the population perceives the fear of Covid19 compromising their family, as the main source of care and perceived support, which for the Albanian population is not a short-term concern.

**Keywords:** Economy, mental health, psychological counselling education, quarantine,

## **Introduction**

The technical committee of experts for the Covid19 outbreak launched the Reopening strategy which started in May 2020 clearly considering that 90% of the business and activities would open, except of public transportation and gathering of more than 10 people. The opening continued progressively regarding all activities including university accompanied by an inclusive vaccination campaign and in October 2022 the decision of the committee of experts decided that "even though there has been a raise in infection rate the restrictions will remain the same" referring to the curfew from 23.00-6.00 am, holding masks, and other conditions of vaccination issues.

There has been highlighted research in psychology during the pandemic related to living and coping in the pandemic life, psychological wellbeing and even in economics related to the risk of finances and economic stability of the individual. Referring to research studies on disaster from the World Psychiatric Association on mental health issues during disasters, women appear to be at higher risk of anxiety disorders whenever they face traumatic situations. Moreover, the female sex is identified in countries such as USA as a risk factor for developing post traumatic disorders therefore training manuals and guidelines for mental health and human service workers have been prepared for the vulnerable population.

Pandemic life fostered the practice of the coping strategies (Bhattacharjee. A and Ghosh.T. 2022) including general psychosocial techniques such as: psychoeducation, physical fitness, spending time on hobbies, mindfulness practice, professional help, good social support, etc. However, the specific coping techniques are related to age, gender and community. Related to age: some behaviors are more avoidant or problem-focused coping, meanwhile related to gender: women are more emotional focused on coping, and in order to manage fear of infections effectively emotion focused coping is one of the effective ones (Kim,J.H.et.al 2022). Certain community differences such as the homeless youth (Brown,S.M. and Begun,S. Bender,K.et.al. 2015) engaging in avoidant coping behavior have a higher risk for developing major depressive disorder, just like personality

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has earlier been considered (Kobassa,S. 1979)as prone to falling ill from or being resistant to illness once there have been encountered stressful life events.

A body of research suggests that the combined adaptive “defense mechanisms and mindfulness practice seem able to prevent psychological distress”(Di Giuseppe,M.Gemignani,A. Conversano,C.2020) To many researchers and professionals, in times of disasters, the term resilience comes into play, not surprisingly flooding with different models. According to Reich 2006, the psychological principles of resilience<sup>i</sup> are developed in the situations of control, coherence and connectedness.

In the struggle to find stability and security, some individuals show a higher mental immunity by recognizing the threat, use their natural psychological stamina to cope with and even take measures to better face the threatening situation in the future as mentioned from World Psychiatrist Association in Disasters and mental health. Since some people are more vulnerable to stress and cannot find their inner strengths to fight the situation by using their coping mechanisms, they become the new agents of mental health disturbances. Assistance for those affected could be provided through talking with friends and families sharing support and empathy, or intervention from professionals.

**Objectives of the study are as the following:**

- a. Describe how individuals having different levels of education make us of their coping mechanisms
- b. Understand whether there is any relationship between personal health care and between the care in physical health and psychological counselling (perceived after the quarantine) and levels of education
- c. Analyze the association between taking care of the economy (perceived after the quarantine) and levels of education.

**Hypothesis:**

1. Ho: The usage of coping mechanisms is not associated with levels of education  
H1: The usage of coping mechanisms is associated with levels of education
2. Ho: Physical health care and psychological counselling (perceived after the quarantine) is not associated with levels of education  
H1: Physical health care and psychological counselling (perceived after the quarantine) is associated with levels of education
3. Ho: Taking care of the economy (perceived after the quarantine) is not associated with levels of education  
H1: Taking care of the economy (perceived after the quarantine) is associated with levels of education

**Method**

**Setting and participants**

This report represents comparison of the data coming from the administration of an online survey form conducted in two different time logs to adults in Albania during Covid 19 quarantine and after the quarantine while people were living in the presence of Covid 19. All adults over 18 years of age residing in the Albanian territory at the time of the completion of the survey were potential participants for the study.

*Procedure and Survey Development*

The first survey was conducted during Covid19 quarantine in 2020 and the period of data collection was from May 10th to June, 17<sup>th</sup>, 2020. The response rate was 151 respondents. The data were cleared in terms of unfulfilled areas and only 149 forms were considered valid.

The second survey was conducted in a period of time when universities were opened and all types of work was conducted in person, however people where still wearing masks and the pandemic restrictions and curfew was still valid. This survey was launched on November14th to December 18<sup>th</sup> 2021 reaching 217 valid responses. The online questionnaire was designed and distributed online to adults in Albania through Google forms. The consent form was attached to the questionnaire. The form was sent through the URL address by email, social

media networks and WhatsApp towards a number of people affiliated with research and access to groups and networks and were invited to spread the link to other potential participants. The questionnaire could be completed only after reading the terms of usage and respect of anonymity.

*Design of the instrument*

The questionnaire was designed referring to the research-based knowledge related to mental health and coping in times of disasters and was adapted to the context of the research. The questionnaire was self-administered characterized from declaration being ranged in a Likert Scale (ranging from 1-5: Strongly disagree = 1, to strongly agree = 5) referring to a high level of agreement of each item. The instrument was first piloted in 30 respondents, the feedback of whom helped to better adapt with the requirements of the study.

The questionnaire was structured into the following main sections: The socio-demographic questions, questions about experiences with COVID-19, fears and coping behavior, and reactions towards economic and psychological issues.

*Statistical Analysis*

Analysis of the data was conducted by using SPSS. The Chi squared test and crosstabulation was used to study the relationship between categorical variables. The level of significance is 5%. Since the research aimed at identifying the relationship/association between variables, the non-parametric chi square tests have been used. Some concepts were associated with descriptive data.

*Characteristics of the socio-demographic data of the surveyed groups in two timelines*

In the first survey, 74.5% of the respondents were female and 25.5% were male. 49.7% of respondents belong to the category 35-44 years old, 37.6% of them are 24-34 years old and 12.8% of them belong to the age category 45-54 years old. Referring to their level of education 53% of respondents have a university level, 39.6% have a post university level and 7.4% of them have only finished high school.

Table 1. Socio-demographic data of the respondents (N=149)

		<b>Gender</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	111	74.5	74.5	74.5
	Male	38	25.5	25.5	100.0
	Total	149	100.0	100.0	

		<b>Age</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25-34 years old	56	37.6	37.6	37.6
	35-44 years old	74	49.7	49.7	87.2
	45-54 years old	19	12.8	12.8	100.0
	Total	149	100.0	100.0	

		<b>Education</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	University level	79	53.0	53.0	53.0
	High school level	11	7.4	7.4	60.4
	Post university level	59	39.6	39.6	100.0
	Total	149	100.0	100.0	

In the second survey the majority of respondents (73.7%) are female and 26.3% are male. Referring to age, the majority of respondents are young (53.5%) belonging to the category between 18-24 years old, 23% ranging from 25 to 34 and 13.8% 35-44 years old. Participants ranging from 45-54 years represent 5.1% of the population of the respondents in the study.

Table 2. Socio-demographic data from the second survey Nr=217 respondents

**2.1. Gender**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	160	73.7	73.7	73.7
	Male	57	26.3	26.3	100.0
	Total	217	100.0	100.0	

**2.2. Age**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	116	53.5	53.5	53.5
	25-34	50	23.0	23.0	76.5
	35-44	30	13.8	13.8	90.3
	45-54	11	5.1	5.1	95.4
	55-64	7	3.2	3.2	98.6
	65-70	3	1.4	1.4	100.0
	Total	217	100.0	100.0	

**2.3. Level of Education**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School level	32	14.7	14.7	14.7
	Post university education	50	23.0	23.0	37.8
	Secondary school	3	1.4	1.4	39.2
	University level	132	60.8	60.8	100.0
	Total	217	100.0	100.0	

Referring to their level of education 60.8 of the respondents have a university degree, 23% have a post-university degree, both representing the largest population of the study. Only 14.7% of the respondents have a high school level of education and 1.4% has a secondary level of education. The latter, since it is under-represented in the study has not been taken in consideration for analysis.

We noticed in both survey groups of respondents the following common characteristics of the sample: Response rate was higher among females than males. In both groups the response rate was higher among youngsters and among university and post-university respondents.

**Results and Discussion**

**1. Association between sources of perceived support in difficult situations with levels of education**

To understand whether there is an association between coping mechanisms and level of education, participants were asked to make an assessment of their fear related to Covid19, to the fear of being infected or infecting others. In order to define the association between coping resources and levels of education, Crosstabs and the chi-square test were used. Following the first hypothesis: Ho: There is no difference between resources of coping mechanisms and levels of education. H1: There is a difference between resources of coping mechanisms and levels of education.

Table 3.1. Chi square tests coping sources with education during quarantine

**Chi-Square Tests**

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.208 <sup>a</sup>	6	.400
Likelihood Ratio	7.374	6	.288
N of Valid Cases	149		



a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .37.

Despite the level of education, 61% of adults report that “in order to cope with situations threatening my personal security”, they have been taught from their self-reflections. Neither family (24.8%), nor media (10.7%) or school (5%) are considered important institutions helping individuals the skills to cope with difficulties and further developing resilience. Family is perceived as the strongest resource among others however, helping people during quarantine to cope with threatening situations especially in respondents with university level in 21.5% of the cases and in respondents with post-university level in 15 % of the cases. For further understanding the relationship between levels of education and sources of information, in the second survey we investigated to understand whether there is any significant relationship between them and levels of education.

#### *Coping and family*

Table 3.2. Coping sources after quarantine  
**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	21.233 <sup>a</sup>	8	.007
Likelihood Ratio	16.329	8	.038
N of Valid Cases	208		

a. 6 cells (40.0%) have expected count less than 5. The minimum expected count is .60.

With the rise of educational level, individuals are more prone to appreciating their families’ role in teaching them the skills they possess when fighting with challenges like the Covid 19.

We confirm that there is a positive association between the perceived support coming from family and the educational level. 76% of respondents (52.7% they agree and 23.3% totally agree) having a university degree perceive their family’s role in instructing them how to cope with difficult situations. 81.2% (60.4% they agree and 20.8% totally agree) of respondents with post-university degree give credits to their families in teaching and instructing them how to cope with difficult situations. Respondents from both groups having a university and post university level perceive family as a relevant source of support in times of difficulties.

#### *Coping and school*

More than 50% of respondents with a post-university degree consider that school is a resourceful place teaching people how to cope with difficult situations. Respondents perceive that school has instructed them with the skills how to cope with difficulties. However, the majority of respondents of all categories of education, report a neutral response towards school as a source of information and support in times of difficulties.

Table 3.3. Coping sources after quarantine  
**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.880 <sup>a</sup>	8	.550
Likelihood Ratio	6.786	8	.560
N of Valid Cases	187		

a. 5 cells (33.3%) have expected count less than 5. The minimum expected count is 1.39.

#### *Coping and friends*

Despite the educational level of the respondents, friends are perceived as supporting referring to our example in more than 50%. Due to personal and professional support, friends represent support reflected to all respondents from high school to post-university level of education.

Table 3.4. Coping sources after quarantine  
**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.810 <sup>a</sup>	8	.557
Likelihood Ratio	6.240	8	.620
N of Valid Cases	194		

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is .97.

### *Coping and Media*

During Covid 19, media has not been considered a good source of information instructing people coping strategies. With the rise of the level of education we see that there is a tendency to trust less on media as an instruction resource on how to deal with difficulties.

Table 3.5. Coping sources after quarantine  
**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.607 <sup>a</sup>	8	.957
Likelihood Ratio	2.733	8	.950
N of Valid Cases	188		

a. 4 cells (26.7%) have expected count less than 5. The minimum expected count is 1.24.

### *Coping and my reflections*

Personal experiences and reflections are considered highly important and efficient when coping with difficulties for all respondents despite their levels of education. This is reflected in high school education level, in over 60% of the cases. University and post-university level have the same share of percentage reflecting too much confidence to their insights and problem-solving skills in crises. They trust their reflections and experiences as leading sources for coping with difficulties. This finding has been stated in both groups of respondents. During quarantine and after quarantine, people rely more on their mindset and experiences to pave the way of managing difficulties and crises in life.

Table 3.6. Coping sources after quarantine  
**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.115 <sup>a</sup>	8	.257
Likelihood Ratio	7.302	8	.504
N of Valid Cases	191		

a. 6 cells (40.0%) have expected count less than 5. The minimum expected count is .14.

## **2. Association between the usage of recreational activities and levels of education**

In order to see the association between recreational activities used from Albanian adults during and after quarantine, we had the following results as presented below:

Table 4: Education and Engagement in creative and artistic activities during quarantine  
**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.484 <sup>a</sup>	8	.070

Likelihood Ratio	15.552	8	.049
N of Valid Cases	149		

a. 6 cells (40.0%) have expected count less than 5. The minimum expected count is .89.

Referring to our example, adults despite their levels of qualification, do not engage in recreational activities like playing instruments, singing, painting and drawing, nor do they engage in relaxing activities such as yoga, meditation or mindfulness techniques.

Data in both groups reports that there is no relationship between levels of education and usage of creative and artistic activities as coping mechanisms during the pandemic. Despite their levels of education, respondents declare that they do not engage in creative and artistic activities as coping mechanisms in times of difficulties and crises.

Table 4.2.1 During this time I am engaged in relaxing activities: meditation, yoga, etc.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.573 <sup>a</sup>	8	.583
Likelihood Ratio	6.629	8	.577
N of Valid Cases	201		

a. 2 cells (13.3%) have expected count less than 5. The minimum expected count is 2.31.

#### Usage of relaxing activities as coping mechanisms

During quarantine, respondents do not use relaxing activities as a coping mechanism. Data retrieved in two different timelines shows that the level of education is not indicative for the usage and administration of meditation and yoga as relaxing activities in times of Covid19. There is a perceived confirmation in terms of using these relaxing techniques from university and post-university level in 20% of the cases, however.

Table: 4.3.1 Testing the usage of relaxing activities during quarantine

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.494 <sup>a</sup>	8	.302
Likelihood Ratio	11.781	8	.161
N of Valid Cases	149		

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is .30.

### 3.The attention seeking behavior of Albanian adults towards economy/jobs and personal care

#### 3.1. Association between physical health care and levels of education

Aiming to understand whether education is related with physical health monitoring, during quarantine we noticed that this care rises with the increase of the level of education among adults. The sensitivity regarding general health in times of Covid19 quarantine is rather high in all respondents. More than 50% of the respondents with high school and university level agree to visit the general physician. Post-university level reports a higher sensitivity in more than 70% of the cases.

Table 5.1. Testing monitoring of the general physical health during quarantine

Chi-Square Tests			
	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.812 <sup>a</sup>	8	.160
Likelihood Ratio	13.438	8	.098
N of Valid Cases	149		

a. 6 cells (40.0%) have expected count less than 5. The minimum expected count is .74.

Data reported in the second survey during the pandemic shows consistency with the data reported during quarantine. Level of education is indicative to the personal care and visits paid at the doctor. Respondents with post-university level of education are more vulnerable to monitor their physical health at the doctor. This is reported in 50% of the cases. University level reports to monitor their physical health in 38% of the cases. High school level of education in 35% of the cases. As a result, the higher the level of education, the more people monitor their physical health at the doctor during the pandemic.

Table 5.2.1. Monitoring general health at the general physician during the pandemic, after quarantine  
**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.134 <sup>a</sup>	8	.522
Likelihood Ratio	7.020	8	.534
N of Valid Cases	213		

a. 4 cells (26.7%) have expected count less than 5. The minimum expected count is 1.60.

### 3.2. Education and mental health care

Results show that adults' approach towards psychological counselling is not positive. The majority of adults do not consider important visiting a psychologist and they refuse to do it soon after quarantine. There is a small difference in meaning given from the adults with post university qualification in comparison with the other levels of education.

Table 6.1. Monitoring psychological health at the psychologist after quarantine, while living in the pandemic

#### Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.982 <sup>a</sup>	8	.082
Likelihood Ratio	15.720	8	.047
N of Valid Cases	149		

a. 9 cells (60.0%) have expected count less than 5. The minimum expected count is .15.

The level of education is not indicative to the care towards ones' psychological health problems. Respondents refuse to visit the psychologist in all cases, despite their level of education while still living in pandemic.

Table 6.2.1. Monitoring the psychological health after quarantine, while living in the pandemic

#### Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.903 <sup>a</sup>	8	.084
Likelihood Ratio	14.070	8	.080
N of Valid Cases	208		

a. 4 cells (26.7%) have expected count less than 5. The minimum expected count is .60.

### Monitoring mental health to the psychiatrist

During quarantine, Albanian adults perceive that after quarantine, they will not visit the psychiatrist. This perception is genuine to all our respondents despite their level of education.

Table 6.3.1: Testing the educational level and mental health care

#### Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)

Pearson Chi-Square	11.812 <sup>a</sup>	8	.160
Likelihood Ratio	13.438	8	.098
N of Valid Cases	149		

a. 6 cells (40.0%) have expected count less than 5. The minimum expected count is .74.

In both groups it is reported that the level of education is not indicative to the care towards ones' mental health problems. Respondents refuse to visit the psychiatrist in all cases, despite their level of education. As a result, Albanian adults during quarantine and after quarantine do not provide personal care for their mental and psychological health. This trend is insignificant to the educational level of respondents.

Table 6.4.1. Monitoring my mental health: visiting the psychiatrist  
**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.149 <sup>a</sup>	8	.419
Likelihood Ratio	8.503	8	.386
N of Valid Cases	208		

a. 5 cells (33.3%) have expected count less than 5. The minimum expected count is .30.

### 3.3. Association between economic concern and levels of education

Ho: Level of worry about economy is not associated with levels of education

H1: Level of worry about economy is associated with levels of education

There is a significant attention and level of worry perceived from all Albanian adults during quarantine regarding their economy, job and finances. This concern is reported in all respondents despite their levels of education which may be due to the immediate impact the lockdown has on the Albanian families and the unstable labor market.

Table 7.1. Testing educational level and economy during quarantine

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.172 <sup>a</sup>	8	.328
Likelihood Ratio	9.971	8	.267
N of Valid Cases	149		

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is .52.

After quarantine, data shows that the level of education is highly associated with behaviors monitoring job and finances. Post-university level of education reports to be monitoring their job and finances in 72% of the cases. University level in 65% of the cases. High school level in 45% of the cases. As a result, in both groups it is reported that economic and finance concerns are present in all people despite their level of education.

Table 7.2 Monitoring economy and educational level after quarantine shile stil living in the pandemic  
**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.163 <sup>a</sup>	8	.056
Likelihood Ratio	15.905	8	.044
N of Valid Cases	209		

a. 6 cells (40.0%) have expected count less than 5. The minimum expected count is 1.19.

## **Conclusions**

We conclude that referring to our data, retrieved to both groups in two different timelines during Covid 19 quarantine and after quarantine (when people were still living in the pandemics), results are majorly consistent in time referring to the way how Albanian adults administered their living and personal care. Respondents from both groups having a university and post university level perceive family as a relevant source of support in times of difficulties.

Adults rely more on their mindset and experiences for managing difficulties and crises in life. Despite their levels of education, respondents declare that they do not engage into creative, artistic activities or use relaxing activities as coping mechanisms during crises and difficult times such as Covid 19. However, physical activity is a dominant demand after quarantine.

Albanian adults are afraid of Covid19 because it would infect the others (around them). Respondents feel confident they can successfully cope with the fears and worries while living in the pandemic.

Referring to their attention seeking behavior, the level of education is a significant factor of individuals monitoring their physical health at the doctor during the pandemic. The level of education is not indicative to the care towards ones' psychological health problems and mental health. Respondents refuse to visit the psychologist in cases of psychological concerns and visit the psychiatrist in times of mental health issues, despite their level of education. Even though a body of literature on adapting with the new normal of the pandemics gives attention to the psycho-social coping strategies and psychological wellbeing of individuals (Bhattacharjee and Ghosh. 2022).

Data report that Albanian adults highlight economy versus personal care during quarantine and after quarantine, while still living in the pandemic. In both groups it is reported that economic and finance concerns are present in all people despite their level of education. Taking care about the job and economy is very important for all adults of all educational levels in Albania during Covid19 quarantine. The focus of the attention is given to economy. Our results are consistent with other researchers' data stating that the health of the population is important, but "economic factors remain central" as cited from Michie.J.2020.

## **Recommendations**

Data has been collected and analyzed for two groups in two different timelines via qualitative tests, however results represent the trend. In order to measure a long-term exposure towards the same factors, researchers recommend to measure continuously adults' perceptions via the same research design and even integrating data coming from interviews representing qualitative data collected face to face with participants aiming to undermine the factors representing their behavioral tendencies. Other factors such as exposure, lack of information, financial resources or dispositions because of stigma needs to be further analyzed.

## **Acknowledgements or Notes**

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# **Exploring Factors Impacting the Financial Sustainability of State-Subsidized Independent Schools in Gauteng Province, South Africa**

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**Abstract:** State-subsidized independent schools are independently owned and governed though they are monitored by the Provincial Department of Education. State subsidized independent schools charge low school fees and receive a subsidy from the government that are used to support operative costs. State-subsidized independent schools despite being subsidized, experience challenges in relation to financial sustainability. Therefore, the objective of this study was to explore the factors that impact on the financial sustainability of the independent schools in Gauteng Province of South Africa. This was a cross-sectional qualitative study conducted among 15 people who were purposefully selected for the study. Data were collected using semi-structured interview and analysed thematically using NVIVO software. The themes that emerged from the data were learners growth, maladministration, and decolonization which negatively impacted financial sustainability of the schools. It is recommended that school management should ensure that the institutions have policies addressing vetting and debt collection.

## **Introduction**

Sustainability is defined by Francoise (2015) as the ability of a business, an organisation or project to fulfil its vision and mission, meet its goals and serve its stakeholders over time. In that context, sustainability can be assessed in terms of the organisation itself, its services and finances. Organizational sustainability refers to the capacity of an organisation to develop a strategic plan and secure and maintain resources that enable it to provide a service over time. Francoise (2015) further asserts that a sustainable business strives to have a minimal negative impact on its global and local environment by linking all business decisions and operations to sustainability principles. Grant & Kenton (2019) state that sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs. The concept of sustainability is composed of three pillars namely the economic, environmental, and social. Sustainability encourages businesses to frame decisions in terms of years and decades rather than on the next quarter's earnings report and to consider more factors than simply the profit or loss involved.

According to Sazonov, Kharlamova, Chekhovskaya and Polyanskaya (2015), 'Financial sustainability will be one of the key challenges for universities in the next decade: only those institutions that have sound financial structures and stable income flows will be able to fulfil their multiple missions and respond to the current challenges in an increasingly complex and global environment. Indeed, financial sustainability is not an end in itself; it aims to ensure that university's goals are reached by guaranteeing that the institution produces sufficient income to enable it to invest in its future academic and research activities. Income diversification is a tool to achieve these goals if the conditions in which the universities operate allow and require it, taking account of the diverse contexts'. Sazonov et al (2015) state that to provide financial sustainability to an education institution in currently changing market conditions, it is necessary to constantly monitor the market situation of education services, at the same time critically evaluating its own position in the market.

For state-subsidized independent schools, unsustainable would refer to not being able to continue in operation in their current state and cannot be sustainable. If state-subsidized independent schools become unsustainable it means that they cannot continue operating optimally or even operating at their minimal levels. There could be several reasons for unsustainability, and these will be revealed in the course of the research study such as the ability for the schools to employ staff which are able to draw up a budget, maintain it and follow the standards set by the Public Finance Management Act in the carrying out of Financial Management. The role of Principals

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in the schools can have an impact as well on the sustainability of the schools. Most Principals are from an academic background and yet have to oversee the finances and governance of the school and have not been trained for this purpose. The most important question is 'How does this impact the schools?'

Santag-Padilla, Staplefoote and Morganti (2012) postulate that an organization sustainable in the long term but unsustainable in the short term will be chronically short of cash. Conversely, an organization sustainable in the short term but not in the long term may have adequate cash but inflation will cause the value of its assets to erode over time. Santag-Padilla, Staplefoote and Morganti (2012) suggest that as a result of the above, the quantity and quality of services will diminish unless capital campaigns periodically bring infusions of new assets. State-subsidized independent schools need to be sustainable in both the short and long term to be able to optimize operations. When there is no balance in income and expenditure, the quality of service diminishes. State-subsidized schools have missions and visions that provide consistent quality and services and this is inextricably linked to its financial sustainability. State-subsidized independent schools may gain the majority of their revenue from school fees, charitable contributions or tax appropriations and measure efficiency and effectiveness of their operations in their success at achieving their social mission, which is their ultimate strategic goal. For non-profit organizations such as state subsidized independent schools, the ultimate goal is to prioritize organizational plans that identify opportunities to manage short-term financial flux while making progress toward meeting long-term social and financial objectives.

State subsidized independent schools provide a service that the government should be providing and caters for the community of learners which cannot be accommodated in public schools. By granting the subsidy, the government acknowledges the need for the existence of state subsidized independent schools. This is especially true in the South African context where the education system is marred by a fragmented history which has resulted in a deeply unequal dysfunctional education impacting severely the disadvantaged and poorer communities. The implications of school closures have social and economic effects that have far reaching consequences. The financial sustainability of such schools is fundamental as it attempts to address section 29 (1) of the South African Constitution. Very little is known about the operations of state-subsidized independent schools in terms of financial challenges and management and how this impacts the functions of the schools. Therefore, the objective of this study was to exploring factors impacting the financial sustainability of state-subsidized independent schools in Gauteng province of South Africa.

## **Methodology**

The research study was positioned and viewed through the lenses of interpretivism as the research questions posed sought to understand why and how state-subsidized independent schools continue in operation and remain financially sustainable or non-sustainable in their operations even though such schools experience challenges in financial management that was influenced by several factors that the study explored. Interpretivism allows researchers to gain a deeper understanding of the phenomenon and its complexity in its unique context instead of trying to generalize the base of understanding for the whole population (Creswell 2007).

This was a cross-sectional qualitative study conducted among school Principals, Accountants and the Chairperson of the school board as they are considered to be the influential with regards to the finance of the schools. A total of 12 participants were selected using purposive sampling technique. Data were collected using semi-structured in-depth interview and interviews were recorded. After a week of the interview, the summary report was sent to the participant for comments if the content of the interviews was the true reflection of the interview. Each participants could modify and provide clarity on the content of the document.

An ethical clearance certificate was obtained from MANCOSA ethics committee. Gatekeeper's letter was obtained from each of the schools prior conducting the interviews. Anonymity and confidentiality were maintained at all times. Participation in the study was voluntary as the participants could withdraw from the study anytime they wished to without any penalty.

Saunders (2016) states that qualitative data analysis is a process of bringing direction, grouping, structure and meaning to collected data through well-structured and coherent themes and concepts. Initially data were transcribed verbatim. The transcript was then imported to NVIVO for analysis purposes. Thematic analysis technique was used to identify and extract the themes and patterns from the data.

## Results

Table 1 below shows the words used frequently by the participants in their response to the factors they have identified as impacting financial sustainability.

Table 1: Themes derived from categories and codes in the data for objective 1

Codes	Categories	Themes
1.1 Competition	1. Strategic management and systems	a) Population & growth
1.2 Training and upskilling		
1.3 Systemic and inherited		
2.1 Poor quality of outputs	2. Inadequate screening and debt management systems	b) Maladministration
2.2 Unpaid school fees		
2.3 Inept enrolment and fee structures		
3.1 Corruption and threats	3. Financial Instability	c) Decolonization
3.2 Conflict changes and contradictions		

When probed further by the researcher on what could be identified as factors that impact the financial sustainability of state subsidized independent schools, a chairperson of the school board DOF responded by stating that:

“a lack of sound business plan, incompetent staff, lack of a motivated management team, lack of a comprehensive holistic marketing strategy, a lack of strict fiscal discipline, lack of vision and leadership”.

The response given by DOF suggests that financial sustainability is impacted only by the internal environment, however, when engaging NYD, a debt collector for a state subsidized independent school, the factors impacting financial sustainability on the economy and the indiscipline of the parents is stated below: “unexpected loss of income such as the economic situation within the country with parents losing jobs and the ever-weakening world economy, indiscipline in management of one’s income from parents who should be paying fees, schools are too lenient with parents who don’t pay”.

Having ascertained from the participants the challenges that impact the financial sustainability of state subsidized independent schools, the researcher probed the participants on how the identified factors affected financial sustainability, participant HRD a Principal/Director asserted that: “the school presents itself with a mediocre product as a result of demotivated staff, staff salaries cut and some retrenched, workload of staff remained exponentially increased, demoralizing to the teacher as they do charity work, demotivating as well to the management to run the school”.

This assertion was supported by Accountant NWD stating that: “parents fail to pay timeously school fees and this offset the smooth management of schools’ budgets resulting in the failure to make payments of essential school services whilst some essential school operations may be left out, contractual obligations cannot be paid without fees”.

The challenges impacting financial sustainability have implications on the operations of state subsidized independent schools. The Business manager participant GF made the following assertion: ‘overheads remain the same as you still pay the educator, rent, electricity, utilities, your costs don’t decrease, the average number of leaners remaining the same but costs going up including number of learners not paying, whilst there is pressure to keep numbers in class limited and you can’t replace a paying child with the one that doesn’t’.

This assertion made was made and supported by WD a Principal/Director who stated that: “there is an influence on academic quality, sometimes you are restricted by not being able to get learning resources, and materials because of income, running costs may lead to a lack of textbooks, stationery, copying paper and lowers quality of teaching and learning, academics have an impact on finances”.

Whilst Participant NWD noted with concern that: 'Parents talk to each other and create a culture of non-payment. Parents refuse to pay citing the subsidy as a source of funds for the school and parents abusing the system, 60% of parents work for the government and their salaries were not impacted by Covid but they aren't paying fees, sometimes parents will send the child to a school even without paying so that the child is not home alone'.

According to participant YD the biggest challenge impacting operations is on human resources, stating that: 'the biggest challenge is staff turnover because if you pay a 50% salary, the first thing staff do will be to look for another job, retaining staff is a challenge and the public sector pays more salaries than the private sector with company benefits such as pension, salaries are very low resulting in the employment of foreign employees who will accept low income and staff turnover for South Africans is 15-20%, employing expatriates is cheaper.

A further impact on operations according to Principal/Director YD is on the systems used in the administration of debt and on attracting stakeholders such as investors asserting that: 'The debt management system is frowned upon if your debt is 25% and you are labelled as making bad debts, however you cannot enforce debt policy effectively because of regulations and debt collection is very expensive as you have to do it at your own cost. If your debt collection is not effective and efficient, the GDE does not give a subsidy and there's nothing you can do about it. Bad debts are budgeted for at 5% but with Covid its now in the 20's and 30's and strains the relationship with funding partners because they can take away the subsidy or deregister you, in fact you spend more money on collecting the debt as there is increased expenditure on debt collection.

## **Discussion**

This study aimed to explore the factors that affect the financial sustainability of state subsidized independent schools in terms of why such state subsidized independent schools are financially unsustainable. From the findings, it was observed that the financial sustainability of state subsidized independent schools was broad and impacted by conditions outside of the environment of the school. Participant interviews revealed that financial sustainability was impacted by, yet not limited to, the economic conditions of the country, the availability of disposable income to parents and their ability to honor contractual obligations, the Human Resources portfolio impacting the attitudes of staff and management and legislation in terms of remuneration and staff retention. Pereira da Silva (2020) asserts that Green Swan events such as Covid-19 produce devastating effects on the financial sectors causing recessions, unemployment and large depreciation of value across all assets. From the reviewed literature by Pereira da Silva (2020) there is an impact on sustainability for state subsidized independent schools as a result of Black and Green Swan event in a VUCA context. The Covid-19 pandemic resulted in a hard lockdown in South Africa where only essential services could continue in operation and the ripple effect resulted in work reduction with reduced remuneration and job losses. As a result of reduced disposable income in households, priorities shifted from school fee payment to food and shelter. The conditions of uncertainty, even in instances where there was no reduced income for example with government employees, school fee payment was not prioritized as people were holding onto any income in anticipation of the possibility of needing to use it elsewhere or in a survival situation. Contractual obligations still had to be maintained and salaries for staff still had to be paid from the reduced school fee income. According to the King IV report, financial performance alone can no longer serve as a proxy for holistic value creation citing Labrey (2016) which stated that long term financial performance depends on the efficient and productive management of resources not currently measured by traditional accounting methodologies of human, intellectual, social relationships and natural capitals. The financial capital market system is insufficient to guard against the multi-faceted and interconnected risks of the future and hence an inclusive market system should be adopted.

Rakomesti (2008) revealed that as a result of Apartheid, the budget provided differently according to race and the effect of this is still being observed in the unequal provisions of education in the country where some schools are still favourably better off in comparison to others. The subsidy has been revealed to have an impact on the financial sustainability of the state subsidized independent schools. The subsidy application, calculation and disbursement has a bearing and impacts the financial sustainability of schools that are desperate for it to operate.

According to participant NYD, the number of learners admitted into the state subsidized independent schools has a bearing on financial sustainability. As a result, schools end up admitting learners without rating them in terms of affordability or scrutinizing the finer details necessary for enrolment such as transfer certificates in a bid to increase enrolment because numbers mean the subsidy granted is higher. Fees charged by state subsidized independent schools are low as prescribed by conditions attached to receive the subsidy so there is a reliance subsidy funds.

According to Lebeloane (2017), colonizers did not introduce education in Africa but they introduced new sets, some of which either replaced and or supplemented those which had been there before stimulating new norms, values and practices. Lebeloane (2017), states that colonizers naturalized various forms of colonization as norms and values and then later as part of statutes with the establishment of western forms of formal schools, that superseded the indigenous and or traditional schools, which exacerbated the process by naturalizing and promoting coloniality and or colonialism in the minds of all learners who attended those schools. The latter thus served as laboratories in which social injustices such as class, gender, language and racial inequality were inculcated, tested, implemented and perpetuated. Heketa (2016) asserts that imperial and colonial rule included both direct and indirect socio-economic and political control, dominance and exploitation of resource-rich parts of the world by the European powers in the form of settler or extractive colonies. Apart from exploitation, one of the drivers of colonial and imperial occupation was the belief by the colonialists that they were superior human beings on a mission to save and 'civilize' the 'uncivilized' peoples in the colonies. Bain (2003) writes that the colonizers believed they had a 'paternal duty that obliged self-proclaimed trustees of civilization to seek the good of the disadvantaged'. They saw themselves as providers of supervision and guidance to the 'weak' and 'childlike' peoples in the colonies.

Benn, Abratt and O'Leary (2016) identify stakeholders as persons or groups that have, or claim, ownership, rights, or interests in a corporation and its activities, past, present, or future asserting that the concept of stakeholder management encourages firms to consider the impact on stakeholders through their actions and decision making. Benn et al. (2016) define primary stakeholders as "one without whose continuing participation the corporation cannot survive as a going concern" and secondary stakeholders as "those who influence or affect, or are influenced or affected by, the corporation but they are not engaged in transactions with the corporation and are not essential for its survival". Primary stakeholders include shareholders, employees, customers, suppliers, the public sector, governments and communities that afford infrastructure, regulate organizational activity, and enforce taxes. The organization and the primary stakeholders are highly dependent on one another. Secondary stakeholder groups include competition, media, trade associations, and support or special interest groups. Although these groups have no contract or authority with the firm, and the firm is not dependent upon these groups for their survival, they can cause significant disruption to the firm. Stakeholder relationships for state subsidized independent schools have been impacted by colonization and to improve engagements with stakeholders, decolonization must be the driving force. According to the King IV Report (2016), in order to know and understand the legitimate and reasonable needs, interests and expectations of an organization's major stakeholders, management needs an ongoing relationship with those stakeholders asserting that understanding stakeholders' expectations will greatly assist the executive to develop better strategies and stakeholder relationships should be a recurring item on the governing body's agenda so that the board can be kept apprised of the current state of the relationships between the organization and stakeholders.

Participant interviewees such as Chairperson HD revealed that state subsidized independent schools are predominantly funded by the government in the form of a subsidy that is granted after meeting certain criteria, school fees and donations from external sources. Any changes in the funding structure of the school has a direct impact on the financial sustainability of the school. Participant of the study NWD, from the school perspective revealed that the subsidy is used as a tool to enforce compliance by the GDE and its removal is a threat that is forever hanging in balance should the schools not comply with the conditions that determine the granting of the subsidy. Participants representing the GDE such as Official DOG however, revealed that the subsidy is not meant to be used negatively in the engagement with the schools but is meant to bridge the gap between the government and state subsidized independent schools to ensure that the rights of children as enshrined in the constitution are protected and schools continue in operation with the GDE guaranteeing 60% of the cost of running such a school depending on the school fee structure and location of the school recognizing that state subsidized independent schools provide a service that the GDE should be providing and has no capacity to disperse in Gauteng. The government has a significant backlog in the provision of schooling and this puts pressure on existing schools. StatsSA (2021) revealed that migrants that come into the Gauteng province put pressure on the government in terms of service delivery and this includes education as schools are not established at a rate that matches demand. Participant interviews such as WD revealed that if the government is providing 60% of the subsidy, it means it is saving 40% on operational expenses that could be spent at a public school and that government is saving on capital expenditure as well as they do not have to build schools.

## **Conclusion**

It could be concluded that financial sustainability was impacted by the availability of disposable income to parents and their ability to honor contractual obligations. School management need to come up with strategies for survival include credit vetting that ensure that the quality of the parent enrolled into the school is financially sound and ensures the minimization of the risk of bad debt.

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# The Effect of Religion and Spirituality on Society

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**Abstract:** The human being needs religion as a guidance and direction for his life. It has been the tradition of his creator to send the messengers as the best example for him. Man has been created from soul and corp. Spirituality causes completion of the soul and righteousness, which makes him a good person and good doer. Such person will not harm anybody and does not destroy the creations and nature, therefore a safe society will appear and the world would be safe from such society. This study is based on the literature available. This article has discussed about the man and his attributes in The Holy Book (Qur'an) and his spirituality which can cause a good society and a better life for the human being and has found that The Islam as the last and most complete religion with its regulations can fulfill the needs of human being for a better life and a better society. Therefore, teaching religion and spirituality to people specially to young can cause safe society for better life.

**Keywords:** Religion, spirituality, Qur'an, society, completion.

## Introduction

There is a birth and a death for each human's soul, but mankind loves long life and the Creator created man for eternal life and for teaching them the right path. He sent messengers with the Book of guidance. Holy Qura'n is the last book from God which is truth and reality. It says: **"Every soul shall have a taste of death and We test you by evil and by good by way of trial and to Us must you return(Qura'n,21,35)**. Also It says: **"Not a messenger did We send before you without this inspiration sent by Us, to him: that there is no god but I: therefore, worship and serve Me"** (Qura'n,21,25) also It says: **"Before you, also the messengers We sent were but men, to whom We granted inspiration: if ye know this not, ask of those who possess the Message"**(abd,7). means ask from people of the holly book, means believers of Torah or Gospel.

**Method:** This study is based on the literature available.

## 1-Human composition is from Soul and Body

God created the human being from two parts; a material substance, the body, and a non- material one, the soul or spirit. Man's body and soul remain together during his life in this world; then the body dies, the living soul departs, and thus man returns to his Creator. Holy Qur'an Says: **We did create Man from a quintessence (of clay); then We place him as (a crop of) sperm in a place of rest firmly fixed; Then We made the sperm into clot of congealed blood; Then of that clot We made a (fetus) lump; then We made out of that lump bones and clothed the bones with flesh; then We developed out of it another creature. So blessed be Allah, The Best to create** (Quran, 23: 12-14).

Same meaning is found in the verse (38: 71 -72) as it says: **Behold, thy Lord said to the angels: I am about to create man from clay. When I have fashioned him and breathed into him of my spirit, fall ye down in prostration unto him.** Therefore, man's soul is from God and it is different from his body.

## 2-Man Exploitation of Other Things

It is human belief and habit to take all necessary steps for preserving his life. So he exploits matter to fulfill his needs, therefore he uses plants and vegetables for food, clothing, housing, etc. Also animals for supporting his existence (their meat, wool, horn, milk, etc.). Also he exploits his own kind, subjugating other human beings, as much as he can.

Human being needs to live social and with the belief of exploitation for his benefit, he needs rule and regulations to obey it for having relations between them, to keep a balance between their rights and duties. It

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means that they need social justice. Also in a family, between the husband and his wife, for having shared life they need it and without it, their shared life cannot continue.

If man is a believer to a religion and obeys God's order, He will use plants and animals or exploiting others with the fewer amounts of damage and harm to them. For all relations and manners of the people there are rules in God's religion. With obeying God's commands, he can be just and use as much as he has right to use. By damaging plants and vegetables or animals, mankind will destroy the nature and the society and no more society would be available. It means that man's society need social justice.

If social justice was the primary urge of man's nature, most of society would have been overwhelmingly just and equitable. But what we see is always opposite to that. Always the demonstration of 'might is right' comes in front of our eyes; powerful ones coerce weaker ones into subjugation; victors humiliate the vanquished, and exploit them for their own advantage (Tabatabaee, 1982, 3.p.174). But Holy Qur'an says: **He (human being) was indeed unjust and foolish** (33, 72); also it says: **Verily, man is given up to injustice and ingratitude** (14, 34). So he needs to be trained and be under control. Religious laws can bring him under control. As long as human remember God and his punishment, they could be stooped from wrong doing and evil.

### **3-Religion**

Religion in Qur'an's custom means the social traditions among people who live in one area or state, and its goal is interest and goodness which causes his completion. There should be some regulation in religion which makes clear the method of life as much as needed. But, social traditions are the right religion and the natural religion, means: God's path that is Islam, or it is out of God's path and right way, that is: has turned from it (Tabatabaee, 1973, 19, p.299). Therefore, religion is exactly practical principles and traditions and rules which guaranty true happiness for man (Ibid, 16, p. 193).

Of course these rules should become for man's benefits so be fixed by his nature as Holy Qur'an<sup>1</sup> says: **So set thou thy face truly to the religion being upright, the nature in which Allah has made mankind: no change (there is) in the work (wrought) by Allah: that is the true Religion but most among mankind know not** (30,30).

Islam is a way of life. It is a simple and uncomplicated religion, giving one maximum freedom without encroaching on the freedom of others. It enjoins one to believe in One God (Qura'n,11, 104; 2,21) and do good; to keep up prayers (Qura'n, 17, 78) and pay the poor rate (Qura'n, 2, 254); to fast during the special month (Ramadan) (Qura'n, 2,183, 185). Islam forbids evil and tyranny, prohibits intoxicants and games of chance (Qura'n, 5, 90), adultery and indecencies, and blood and dead animals (Qura'n, 5, 3).

Islam is religion of human's nature, for man's nature is fitted with it and guides man to right path (Tabatabaee, 16, p. 193), and it is God's religion, which created man, and knows better than anybody else about his benefit and happiness and needs and wishes man completion. Holy Qur'an says: **It is Allah who has created you: further, He has provided for your sustenance; then He will cause you to die; and again He will give your life...** (30, 40). Also in (20, 50) says: **Our Lord he who gave to each (created) thing its form then, gave (it) guidance.** This was Moses answer to the Pharaoh when he asked Moses "who is your lord".

### **4-Human's Attributes in Qur'an**

Holy Qur'an explain the situation of man as it says: **Truly man was created, very impatient; Fretful when evil touches him; and niggardly when good reaches him;** (70, 19-21).

These verses talk about the nature of man and his attributes since he borne he is impatient and has greed for every good thing. When he receives well he loves just keeps it for himself and does not like the others have it too; when poverty comes to him, he is impatient (Tabrasi, 1403, 5, p. 356).

Because of this adjective man is interested to rich to high level of knowledge and progress, but this kind of feeling should become under control and of normal kind, because it can cause problem.

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<sup>1</sup> . The Book of God to the last prophet(Mohammad), In Islam the last and the most complete religion of God(Allah).



## **5-Believers Attributes**

In continuation of above verses, God says that this explanation is for people in general but the believers who care for their prayers are not and it says:

**Not so those devoted to prayer<sup>2</sup>: Those who remain steadfast to their prayer; And those in whose wealth is a recognized right For the (needy) who asks and him who is deprived (for some reason from asking),** also it says: **And those who hold to the truth of the Day of judgment; And those who fear the punishment of their Lord** (70, 26, 27).

These verses mean that those who care about their prayer and are patient are safe from evil deeds; and remembrance of Allah is the greatest (thing in life) without doubt (29, 45).

It means that: establish regular prayer because it stops you from evil and tyranny; more than that is the remembrance of Allah (God) and it is more important, for the remembrance of God is the best good which a man can reach it and the remembrance of Allah is the key of all goods (Tabatabaee, 1973, 16, p.136).

The prayer is worshiping act which is continuing on causing special attribute in man's soul, that is like an un seen police man who watches him from wrong doing and evil so his soul could be clean from the evil.

Prayer is special attention from man to God that if there be no fault or sin, it effects as much as it could, so it needs keep continuing this act specially for young to custom to it and with attention to the meaning of its words and attention to God, its result would be appear. Prophet Mohammad (p.b.u.h) has said: "teach praying to your children since they are 5 years old" It means that from that age they have to start praying training. As much as they grown up they will more understand about the meaning of its words and sentences and it becomes as daily prayer which is not hard for them to do it.

As they care about the poor and needy people and do help them, the distance between rich and poor will not increase. Needy people will feel that others are close and friend with them. And enmity will not increase between them. Friendship will increase and the rich would be safe from needy people, therefore their society could be a safe and good one.

In the continuation of this explanation by Qur'an, it says: **And those who guard their chastity, except with their wives ...** (70, 29-30). This explanation is about the purines and chastity in sexual relation that is very important for pure generation and descendants. The appearance of illegitimate child is a big problem in our time. This verse says that believer and those who care about spirituality do care about their children and different kind of desires which are caused from homosexuality or rung intercourse relations. Having legitimate children is very important, Holy Qur'an says:

**From the land that is clean and good, by the will of its cherisher, springs up produce, (rich) after its kind: But from the land that is bad, springs up nothing but that which is scanty thus do we explain the Signs by various (symbols) to those who are grateful** (7,58).

This verse is a symbol that means the Mother of a child should be pure and having right sexual relation with her husband. Such child which grow in her womb and her lap, can be good one and with spirituality.

In the continuation of talking about human being, Qur'an says about man's covenants and testimonies which is very important in relation between people, as says: **And those who respect their trusts and covenants; And those who stand firm in their testimonies** (70, 32-33). This explanation shows us that people with faith and spirituality can have the best society for their life. They do care for their covenants as it is very important among people. If there is no trust among people, there will not be any hope for that society's continuation. Each phrase in these verses is very important for the relation between people in society as we can see.

God advises believers to be patient, as says: **O ye who believe! Persevere in patience and constancy; vie in such perseverance; strengthen each other; and fear Allah that ye may prosper** (3, 200).

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<sup>2</sup> . Believers who does prayer (daily prayer) continually do it (tabrasi, 1403, 5, p. 356).

## **6-Who is the legislator in a society?**

Human can be the legislator among his kind, as he is wise and free in choice, but because of having the right of choice, they may have differences between other humans. When differences appear it cause incompleteness for man and they can't to solve it without God's help and direction; they need to refer to His laws for saving themselves and their society from corruption; therefore, man needs God's religion which usually should be brought by a complete man as a messenger of God, then by obeying those rules they could be prosperous.

Divine law is the only law which is based on pure knowledge. No other law was ever built on that foundation, because God is Absolute so his knowledge is absolute too and people's knowledge is not and it is limited. **and you have not been given of the knowledge except a few** (Q,17,85)(Yusuf Ali, translation).

God's commands are the best and those who obey it and do what God has said could be right men. If one way of life is obeyed in a society and there are no differences between the people, surely nearness and love will increase among them and they can have a good and calm life. Islam came to verify the previous religions brought by the prophets; it is the most comprehensive and complete Divine Religion which is based on the belief of the oneness of God, on true faith, and on fine character and good deeds. In other words, Allah created laws, these laws were made to teach people the reality of life, from its beginning up to its final destination; to make them realize that this life should be spent keeping the next life in view, and that this short life is but a preparation for the next one which will last forever and ever (Tabatabaee, 1982, 3, p.177).

## **7-Spirituality**

The real man's prosperity and happiness is a pledge within the prosperity and happiness of his soul. Spirituality causes the prosperity of the soul. The Holy Qur'an says: **He whom Allah guides is rightly guided** (18, 17). Also it says: **And whomsoever Allah guides no one can mislead him** (39, 37). All sins are misleading. God (Allah) guides man, do not follow the Evil (Satan); it is a covenant between God and man, therefore a pure nature of man should remember this covenant, because the Evil is his clear enemy and following him is like to worship him, and God's guidance has admonished him and guided him to worship Allah (The Unique God). Allah in Holy Qur'an says: **Did I not enjoin on you, O ye children of Adam, that ye should not worship Satan; for that he was to you an enemy avowed; And that ye should worship me, this was the Straight Way** (36, 60-61).

God (Allah) does complete his favor (blessing) and sustenance to those who worship Him. As Qur'an says: **All who obey Allah and the Messenger are in the company of those on whom is the grace of Allah...** (4, 69). The model of man's life is related to the basics of his beliefs. If he believes that he is just material existence and his life will finish by his death, and believes that beginning and end of this world is just material kind that it appears then will finish without any relation to the hereafter day; such person when he wants to legislate for himself and his society, he does it just to guarantee his material wills and wishes. But those who believe that this material world has a creator who is not from material and all creation is his, wants to legislate for their society, they will do to guarantee this world and its happiness and here after day life (which is forever life). Therefore, the model of life could be different because of the belief of people in a society.

If good laws and traditions which can protect human's happiness and completion govern a society, people in that society could be pious and good doers, therefore in that situation they can reach trustworthiness.

The good deed is an action which is good for the one and community. The model of good doers is the messengers of God (Allah). Holy Qur'an introduces Prophet Mohammad (p.b.u.h) as the best model for the believer's life, as it says: **Ye have indeed in the Messenger of Allah and excellent exemplar for him who hopes in Allah and the final Day, and who remember Allah much** (33, 21). God's prophets have been the most complete men in their time and the best exemplar for them. They received the direction of good deeds by revelation from God and they continued to be good and not try the crime and evil and taught their people to be right and pious. To follow them causes salvation and happiness for man. As long as people are good, human society can have the best life and blessing and benefit and live in right path. The one, who fear from God's punishment and obeys his order and stops from what He forbids, can have happy life. Is not be guilty, doesn't follow wrong path, damage anybody, and steal anything, and then others can be save from him. Such society that his people goes this way, could be safe and happy society and can live happily and become completed people. So teaching religious' taught for young is necessary in man society for having safe and Salem life.

## **Conclusion**

Man was created from, clay and soul, his soul needs guidance and spirituality. It could be covered by Unique God (Allah)'orders by sending messengers to him for his guidance and teaches the correct way of the life. By following their guidance and obeying God's commands, human can have good society and happy life. Islam as the last religion of Allah has the most complete regulations for all man in all societies. A real Muslim can be a good man in his life without any sin or crimes that others will be safe from him. Therefore, his society could be the best if his people are real Muslim and people in other countries could be safe from them too. Teaching correct believe and spirituality to young and train them in this way can cause better life and relation in society.

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# **The Influence of Physical Work Environments on Employee Performance**

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**Abstract:** As organizations compete within a sector, they must pay more attention to employees' performance and provide them with an optimum working environment that allows them to perform at their best. Unsafe and unhealthy physical environments affect performance at work. The purpose of this study is to examine the relationship between physical work environment and employee performance in an Indonesian manufacturing company. This study used a quantitative survey to gather data. The study involved 187 employees at a company operating in Batam, Indonesia. A Pearson Correlation Analysis was used to analyze the data and determine the relationship between variables. Results of this research indicate a significant relationship between employees' performance and their physical work environment. This correlation is, however, low. As long as the working environment is conducive to an employee's ability to complete their job, they can work comfortably. Nevertheless, other aspects need to be considered that may play a major role in increasing employee performance, such as improving the relationship with colleagues, giving employees a supervisor to assist them in completing their tasks, and considering employees' working hours.

**Keywords:** Physical work environments, Employee performance

## **Introduction**

Organizations today face many challenges from globalization and recent changes, including establishing an environment that captures, nurtures and motivates their employees. In the past decades, the workplace environment has changed due to various factors including the social environment, technology, as well as the adaptability of handling work processes (Yohe & Tole, 2002; Griffin & Parker, 2007). Additionally, competition within the sector requires employees to work faster, smarter, and more innovatively. As economic conditions and competition become more stringent, organizations can no longer squander the value in their employees. In order to survive, a business needs to pay attention to the performance of its employees and create a work environment that allows them to utilize their best talents (Block, 2016).

Many organizations consider lifestyle, work-life balance, health and fitness when hiring prospective employees (Kim, 2014). As a result, the organization considers and relates it to employee performance. Furthermore, the work environment can also influence the performance of employees (Davidescu *et al.* 2020; Ali *et al.* 2015). Chandrasekar (2001) asserts that the working environment greatly impacts employees' performance either negatively or positively. Physical work environment plays a decisive role in determining employees' performance as it affects their job satisfaction, according to Tayfun & Öneren (2021). As Rahmi *et al.* (2018) reported in their previous study, physical working conditions have a significant effect on the employees' work performance, which affects employee productivity in Central Java and the Special Region of Yogyakarta, Indonesia. An effective and conducive work environment is necessary for employee performance to be at its best. Employees can then effectively perform their duties and tasks. In another study, Naharuddin and Sadegi (2013) investigated the factors affecting the performance of employees at Miyazu Malaysia and found that supervisors' support is not an important contributor to the employees' performance. Employee performance is strongly influenced by job aids and physical working environments. There is no doubt that the physical work environment greatly influences employee performance. As a result, it is vital to conduct research into physical work environments specifically in manufacturing companies that assist workers to perform better.

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## Employees Performance

According to Borman (2004), performance is the most important dependent variable in industrial psychology. Employees' performance is a result of their ability, efforts, and ways of viewing tasks, according to Diamantidis & Chatzoglou (2018). As further explained by Al Mehrzi and Singh (2016), performance is defined as a person's success in achieving goals and standards of work in a certain period of time with mutual agreement. Performance is also defined as employees' effort in completing tasks set by the company or organization (Razak *et al.* 2018).

Koopman *et al.* (2011) developed a heuristic conceptual framework for the individual's work performance, illustrated in figure 1. Work performance includes task performance, contextual performance, adaptive performance, and counterproductive work behavior (CWB). According to the first dimension, task performance refers to how quickly the main tasks are completed, which indicates whether employees are performing their job responsibilities, keeping their knowledge updated, and working accurately and neatly. Contextual performance, as the second dimension, refers to activities that may contribute to organizational success due to the social and psychological environment in which they operate. The third dimension is adaptive performance, which describes how an employee adapts to changes in work systems and regulations. Finally, CWB represents activities that are detrimental to the organization's success.

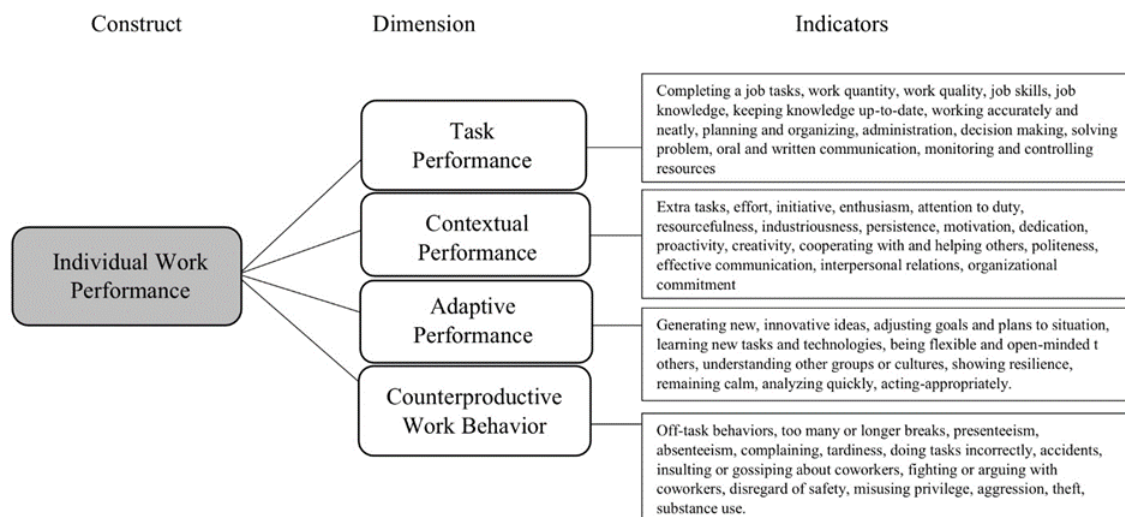


Figure 1: Heuristic Framework of Individual Work Performance (Koopman *et al.* (2011))

According to Widyastuti and Hidayat (2018), this dimension entails faultless behavior that might harm the organization, in contrast to the prior two dimensions, which comprise of behaviors that may influence a company to succeed. Koopmans *et al.* (2011) further stated that indicators of this dimension include absenteeism, complaining, purposefully underperforming, or misusing authority.

## Physical Work Environment

In a working environment, physical surroundings are an important factor. Rorong (2016) distinguishes two types of physical work environment *i.e.*, internal and external office setting, temperature, workspace, and office arrangements. Physical work environments are also areas within the organization that are being laid out or organized, enabling the organization to reach its objectives. A person's physical work environment can also determine whether he or she is suited to the working environment (Pusparani *et al.* 2021). Joseph (2016) added that a physical work environment involves both the setup of the workplace environment and how it impacts employees. The employee may experience hazards, dangers, or risks such as hazardous substances, radiation, and noise in the workplace, and the shape and length of those effects.

The Two Factor Theory of Frederick Herzberg includes the working environment as one of the factors that can affect employees' performance (Dartey-Baah & Amoako, 2011). There are two factors that influence employee working behavior and performance in this theory. The intrinsic factor that may influence employee job satisfaction is motivation, whereas the extrinsic factor that might alleviate employees' dissatisfaction at their

workplace is hygiene. Motivation factors such as achievement, recognition, responsibilities, the work or tasks, advancement, and personal development influence job satisfaction. A factor which can influence job dissatisfaction is hygiene, and one such factor is the work environment. These two factors may lead to four common situations according to this theory. Employees with high motivation and high hygiene of work environment will be at the ideal situation wherein employees will be satisfied with the surroundings and feel motivated. A second scenario could arise if employees are energetic and passionate about their work, but their workplace environment has many other aspects that have made them complain. It occurs when employees have high motivation but poor workplace hygiene. Having low motivation and an unhygienic work environment is another condition that might occur. As a result, employees may be weary and unable to focus on their work. According to Herzberg's theory, dejected and unmotivated employees are likely to occur as a result of low motivation and poor hygiene. As a result, employees need a high level of hygiene at work. (Atalic *et al.* 2016).

### **Relationship Between Physical Work Environment and Employees' Performance**

Dewe & Cooper (2007) argue that the physical working environment results from an individual's fit or misfit in their workplace. The physical working environment is also called an ergonomic work environment (Husin & Paino, 2012). Improved physical work environments will lead to improved employee safety and prevent nerve injuries. In addition, the aspects of a conducive and appropriate working environment are equally important so that employees' stress is reduced while performing their tasks and duties. Further, the physical work environment plays a significant role in helping employees to build relationships and networks in the workplace, which helps them to perform better (McCoy & Evans, 2005). Employee dedication and turnover rate in the organization are associated with the working environment. Providing employees with a sufficient, supportive, and suitable working environment will lead to high levels of employee satisfaction and thus increase their performance. Roelofsen (2002) also claims that focusing and improving the working environment enables employees to have fewer objections, criticism, and absenteeism rates, thereby increasing the level of employees' performance and productivity. Accordingly, it can be concluded that putting a greater emphasis on the physical working environment will increase employee motivation and productivity.

There have been several studies (Ali *et al.* 2015; Nzewi *et al.*, 2018; Rorong, 2016) that have shown that employees do not perceive the level of light in the workplace to be unpleasant when compared to the office temperature, which implies that the office temperature is more important than the level of light. A low office temperature contributes to health-related issues such as fatigue and inability to concentrate.

H1: There is positive and significant relationship between physical work environment and employees' performance.

### **Method**

Data for this study were collected and analyzed using quantitative research methods through descriptive and correlational research designs. This study used a set of questionnaires to examine the independent and dependent variables. For this study, the questionnaire was adopted from Nanzushi, (2015) with a total of 4 questions and Manu, (2015) with a total of 8 questions for the physical work environments and Koopmans *et al.* (2011) for the employees' performance. In this questionnaire, there are three dimensions: task performance, contextual performance, and counterproductive work behavior. The respondents were asked to answer each question using the Likert-Scale ranging from strongly disagree to strongly agree. The total population of this study was 422 employees, and the sample size was 201 on the basis of a random sampling method. A total of 187 questionnaires were returned from employees of the selected company in Batam, Indonesia. A descriptive statistic was used to report each variable's mean. In order to measure the relationship between two variables, Pearson's Correlation Analysis was used.

### **Results and Discussion**

The majority of respondents were male workers between the ages of 21 and 25. In addition, most respondents have completed a bachelor's degree. The length of work experience ranges between 1 and 3 years.

Table 1 shows the overall results of employee performance. Results show that employees' performance is rated as moderate by the mean score of ( $M = 3.56$ ;  $SD = 0.369$ ). According to the first dimension of employee

performance, which is task performance, the overall mean of Task Performance is high (M=4.26, SD=0.450). Almost three-quarters (f=175, %=93.6) of the respondents agreed that they were able to complete their work on time if they could manage their plan. A high level of performance was also shown in the second dimension, Contextual Performance (M=4.06, SD=0.474). Nevertheless, some respondents (f=56, %=30) were unsure whether they would be able to handle challenging tasks when they had more free time. CWB, on the other hand, was low among respondents, which indicated that the company's goals and interests were being pursued. The results were consistent with other dimensions, as well - task and contextual performance were high. However, about half (94, 50%) of the respondents still complain about small issues at work and about a third (61, 33%) share negative aspects from their workplace with their colleagues.

Table 1. Level of Physical Work Environment and Employees' performance

Variables	Mean	Std. Deviation	Level
Physical Work Environment	3.62	0.384	Moderate
Task Performance	4.26	0.450	High
Contextual Performance	4.06	0.474	High
Counterproductive Work Behavior	2.07	0.756	Low
Behavior	3.56	0.369	Moderate
Total of Employees' performance			
Mean value (Low = 1.00 - 2.33; Moderate = 2.34 - 3.67; High = 3.68 - 5.00)			

Table 2 shows that there was a significant relationship between independent and dependent variables in this study based on the p-value for both variables which was less than 0.01. Furthermore, Pearson's correlation coefficient demonstrates a positive but weak relationship between physical work environment and employees' performance. A weak positive correlation indirectly implies that employees performing better at work may be influenced by the workplace's physical environment. The results of this study support the hypothesis that employees' performance is positively related to their physical work environment.

Table 2. Coefficient Correlation between Physical Work Environment and Employees' performance

	r	Sig.	N
<b>Physical Work Environment and Employees' performance</b>	0.265	.000	187

\*\* Correlation is significant at the 0.01 level

## Conclusion

In a nutshell, we can conclude that respondents in the chosen company had positive perceptions about the physical work environment in their workplace which indirectly proves that the company provides them with a comfortable workplace to work in, which results in better performance. In this study, it was proven that the physical work environment in an organization has a significant effect on its employees. Consequently, organizations should ensure that employees have a comfortable and suitable physical work environment. However, companies should also pay attention to other matters that can affect employee performance, such as enhancing the co-worker relationship, having supervisors support employees in completing their tasks, and considering employees' working hours.

## Recommendations

The outcomes of the study revealed that employees' performance can be enhanced by improving their behavior at work (CWB). Pre-employment tests can aid employers in determining whether an individual is more prone to engaging in CWB, and employers should aim to hire individuals who are less likely to engage in CWB. By assessing conscientiousness, for instance, behavioral tests can help employers mitigate the risk of CWB. While this study proved that the physical work environment has significant relationships with overall employee performance despite low strength, however, the work environment can be arranged and designed to enhance

employee satisfaction or enjoyment at work. According to Bruursema et al. (2011), job boredom has a significant correlation with CWB, thus it is important to investigate how employees feel at work, which is significant to their emotional well-being, and can either be positive or negative and may influence their job performance.

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# **Fake News and Propaganda: Case Study of Georgia, Ukraine and Estonia**

**Tamta CHKHAIDZE**

Ivane Javakhishvili Tbilisi State University

**Abstract:** Although almost three decades have passed since the collapse of the Soviet Union and the former allied republics began democratization. Media development in all countries has taken place individually and in parallel with political processes. The countries participating in the study are at different stages of media development, as well as social, economic, and political development, although disinformation, fake news, and propaganda narrative are challenges for all of them. The research issue not only losing relevance, but it is also becoming more relevant as the popularity of online media and social networks grows. At the same time, numerous international and local studies confirm that the fight against fake news becomes even harder, as the means of spreading misinformation are constantly being improved. Fake news and propaganda narrative usually intensify in parallel with social or political situations in the country, which is carried out individually on the example of each country. However, the importance of the research was once again confirmed during the COVID-19 crisis and the ongoing war in Ukraine. The research aims to find out the content of the fake news in the online media of Georgia, Ukraine, and Estonia and to identify the most vulnerable groups in these countries. The study also aims to find out how aware these countries are of the threat posed by disinformation.

**Keywords:** Fake News, Disinformation, Propaganda, Georgia, Ukraine, Estonia

## **Introduction**

After the collapse of the Soviet Union, the process of democratization of the former allied countries developed at a different stage, and in different directions. A part remained an active ally of Russia, while a part chose a pronounced western future.

Even though almost three decades have passed since the collapse of the Soviet Union, and the former allied republics began the democratization process, the media landscape in all countries developed individually and under the political conjuncture. The countries participating in the study are at different stages of media development, as well as social, economic, and political direction, but disinformation, fake news, and propaganda narratives remain crucial challenge for all of them.

Disinformation and propaganda are a serious threat to liberal democracies. Over the past years, with the help of digital media, disinformation made societies more divided and polarized and weakens peoples' trust in the political system. In the context of the Eastern Partnership, Georgia and Ukraine, with a clear European integration ambition – are particularly vulnerable to Russian disinformation and propaganda campaigns. Disinformation and propaganda are integral parts of Russian hybrid warfare.

All three countries in the study are partially similar and significantly different from each other. However, the fact that Estonia is an advanced European country with technological development should be taken into account. Accordingly, Estonia's experience in the fight against disinformation and fake news can serve as an example for Georgia and Ukraine.

## **Method**

The research was conducted using the qualitative research method. An important part of the work is based on the analysis of available sources, such as policy documents, reports, research papers and surveys carried out by local and international state and non-state actors. Strategic documents of all three countries, studies, and reports published by international and local non-governmental organizations were studied within the scope of the research. The analysis of secondary sources should have answered an important question: if these countries analyze the threat arising from Russian hybrid warfare and how this reflects in the country's strategic documents. In addition, the paper aimed to identify the narratives of fake news and disinformation campaigns, what content was shared on social media, and how similar this content was across the three countries.

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## **Results and Discussion**

Georgia and Ukraine have acknowledged Russian disinformation operations as a threat to national security and have reflected this challenge in various policy documents.

We should also take into account the fact that 25% of the population of Estonia are ethnic Russians.

### **Estonia**

After the attack back in 2007, Estonia decided to be a cyber-security leader and aimed to protect its online infrastructure from future attacks. Since 2010 Estonian public schools – from kindergarten through to high school – teach media literacy to their pupils (Yee, 2022).

In 2018, the European Commission published the results of the European Barometer survey, according to the findings, Estonia was the least critical of the threat posed by fake news among the EU member states. This was the first study published by the European Commission on the impact of fake news. The same study showed that Estonians were the most likely to trust the news reported by the media and the least likely to encounter information containing fake news. When asked how well they could identify fake news, 64% answered that they could identify fake news (European Commission, 2018).

In 2020, the Russian-speaking population of Estonia was surveyed. The main finding was that Russian TV channels were the first source of information for approximately 70,000 Estonians (Vihalem & Juzefovičs, 2020). According to 2020 data, Russians present the largest ethnic group in Estonia, with 24.7% of the total population (Eesti Statistika, 2020). In March 2020, when Russian TV channels were spreading wrong information about the coronavirus, a certain part of the population in Estonia trusted only this information. According to the Propastop article, the results of the study also indicate certain dangers, as Russia, at the beginning of the pandemic, lightly covered the topics related to the coronavirus and presented it as if the virus was only a problem for some countries (Propastop, 2020).

Online disinformation is not regulated by Estonian law, although there is the Cyber Security Act (2018) and the Information Society Service Act (2004) regarding information and digitization.

Estonia ranked 3<sup>rd</sup> in the 2021 *Media Literacy Index*, compiled by the European Policies Initiative of the Open Society Institute (OSI), behind Finland and Denmark. The course *Media and Influence* is mandatory at high schools, thanks to the course students focuses on the role of media, how the social media works, how the bots and trolls function and how to protect against them.

Media literacy is a part of Estonia's identity as a leader in technologies. In 2020, US officials visited Estonia to learn about combating Russian cyberwar tactics. As well as the UK Parliament heard evidence from the representative of the Estonian government to learn about the media literacy programs (Yee, 2022).

While teaching older people media literacy skills remain a challenge, media manipulation course is not mandatory for Estonia's Russian schools. But Estonia tries to make the course compulsory in all high schools around the country,

### **Georgia and Ukraine**

The Parliament of Georgia started active work against Russian disinformation and propaganda in 2018, when the Committee of Foreign Affairs launched a thematic inquiry on disinformation and propaganda threats in Georgia. This was the first document issued by the governmental institution to describe the process of the disinformation cam

The reports of the State Security Service of Georgia in recent years reveal that only the methods of hybrid war attempts by different states, the stirring up of anti-Western sentiments in society, and the tactics of influencing the country's chosen foreign course are changing, which are becoming more sophisticated. Consequently, disinformation, fake news, and propaganda from various countries remain a challenge. (State Security Service of Georgia, 2019).

Disinformation has become one of the main tools of aggression of the Russian Federation in eastern Ukraine back in 2014. The current legislative framework did not provide for regulatory provisions concerning hybrid threats and disinformation. In 2021 the government of Ukraine took important steps to create a state system to

combat fake news and established the Center for Strategic Communications and Information Security under the Culture and Information Policy Ministry.

In 2017, the "Media Development Fund" together with partner organizations from Ukraine, the Czech Republic, and Hungary published a study called the Kremlin Influence Index. The authors aimed to measure the mechanism of influence of the Russian Federation on the information spaces of other countries. As we learn from this research, Russian propaganda in Georgia is complex, which includes not only Russian propaganda platforms but also Georgian tabloid media (Detector Media, Media Development Found, Political Capital, European Values, 2017).

Russia's disinformation tactics and methods applied in Georgia, Ukraine and Moldova are extensively discussed in the report developed for the US Senate Committee on Foreign Relations (2018). The report states that the "Kremlin most aggressively targets states that seeks to integrate with the EU and NATO... As Georgia and Ukraine moved closer to these institutions, the Russian government attacked them with cyberwarfare, disinformation campaigns, and military force."

## **Conclusion**

Despite the fact that Georgia and Estonia are at different stages of political and public life, certain similarities are striking. Both countries are similar in terms of territorial size, and ethnic minorities represent almost a third of the population in both countries. While Estonia is a member state of the European Union and one of the most advanced in terms of technology, misinformation and propaganda narratives stay a challenge.

In the case of Ukraine and Georgia, Russian disinformation carries similar content and has a greater impact on people who watch Russian-language TV channels. An important finding is that in the case of Georgia and Estonia, ethnic minorities mainly watch Russian-language TV channels, which makes them more vulnerable to misinformation and increases anti-Western sentiments. This problem has been made more visible by the pandemic when the authorities need to make much more effort in regions inhabited by ethnic minorities, where anti-vaxxer sentiment is prevalent.

Since the outbreak of war in Ukraine, disinformation narratives have intensified, although relevant groups in all three countries have become more motivated to combat the spread of fake news.

An important finding of the research that distinguishes Estonia from other countries is media literacy. Although the threat is recognized in Georgia and Ukraine and mentioned as a threat in state security documents, media literacy is not integrated into the education system, as it is in Estonia.

## **Recommendations**

The report recommends education as the optimal approach to tackling fake news. The study of secondary sources and national policy documents on the subject of Estonia showed that media literacy plays an important role in the fight against disinformation.

Although the issue is complex, some recommendations can be developed as a conclusion:

- School or university education in Georgia and Ukraine needs to integrate media literacy so that children can recognize fake news from an early age.
- Development of training programs in the direction of media literacy in regions inhabited by ethnic minorities.
- Supporting competitive, balanced media in the language of ethnic minorities.
- Strengthening of local non-governmental organizations to organize awareness campaigns for ethnic minorities.

## **Acknowledgements or Notes**

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## **The Use of Innovative Technologies and Practices at the School Classes for Children with Speech Impediment**

**Sabirova Zebo ILHAMJANOVNA**

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**Abstract:** The article analyzes the problem of creating an optimal learning environment for children with speech disabilities, the problems of developing special education in Uzbekistan and its current state of development.

**Keywords:** speech, visually impaired children, school, lesson, innovative technologies, characteristics, principles of education.

### **Introduction**

Today, a lot of demands are placed on the school of general education. One of them is the application of innovative technologies, which determine the modern quality of education.

Any lesson originates from the realization and precise determination of its ultimate aim, i.e. what exactly the teacher wants to achieve; then comes the selection of a way that will lead the teacher to its achievement; and at last comes the identification of a method, i.e. how the teacher will act to attain the aim.

At a time when the system of national education is being rapidly modernized, the school's for children with speech impediment aim is to form the independent personality capable of thinking originally, acting energetically and taking responsibility for his actions, analyzing and forecasting the situation. The priority component needed to materialize this aim is the formation and full realization of creative potentialities of the pupil's personality, using methods and means of the oncoming-effort technology. The fact is, a given technology makes it possible to organize a propitious environment for teaching, within whose framework all pupils actively cooperate with each other, the teacher and the surrounding world.

As any technology, the ongoing-effort technology is based on didactic principles of education. These include:  
The principle of consciousness and activity;  
The principle of comprehensibility, whose efficacy lies in the teacher's ability to organize and carry out the educational process in accordance with the pupil's age peculiarities;  
The principle of systemic character and succession of education, which is based on scientific provisions;  
The principle of visualization, whose rules urge the teacher to use a whole spectrum of visual aids not just for illustration, but as an independent source of knowledge for the creation of problematic situations.

Let's single out the main characteristics of the lesson that is built on the ongoing efforts of those participating in the educational activity:

- The entire lesson (or its bigger part) is conducted with great emotional and intellectual enthusiasm;
- The atmosphere of co-operation and co-creativity prevails at the lesson;
- The cognitive activity of pupils is stimulated by diverse tasks of explanatory, heuristic and creative character;
- The teacher induces, arranges and leads the pupils' with speech impediment thought to independent search and resolution of tasks;
- At the lesson, various opportunities are created for pupils to show their worth, depending on their ability and wish to study.

The realization of ongoing efforts can be organized at the lessons of any type.

The ongoing-effort pedagogy is, thus, the outcome of synthesis of several interactive technologies, enabling peculiarities the teacher to direct the lesson's character and content to the formation, development and realization of the pupil's creative potential.

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The developmental teaching technology. The delivery of educational material in packages based on theoretic generalizations allows the teacher to provide the fundamental principles and key concepts, being guided by general rules of the knowledge-adoption process and the formation of skills, acquired habits and specific of the language as a system. In the course of teaching, only those linguistic generalizations are formed in pupils that are unlikely to be subject to root-and-branch changes in future. Their scope can only be supplemented and expanded.

Health-saving educational technologies. The teacher's attention to children's with speech impediment health is the priority task in the process of education, including the lessons of native language, because the health is not just the absence of diseases, but a state of physical and mental welfare of any person.

The aim of this technology is the provision of possibilities for saving the pupil's health over the period of education. The task of a given technology is to ensure such conditions of education, upbringing and development, which have no adverse effect on the health of those participating in the educational process. The health-saving education is aimed at ensuring the pupil's mental health, in the first place. This purpose is attained by: 1) taking into consideration peculiarities of the class and applying methods that facilitate the formation and maintenance of interest for the teaching material; 2) creating conditions for self-expression of pupils; 3) initiating various types of activity. The obvious pluses of such education include: prevention of the emergence of fatigue and tiredness in pupil; an increase in motivation for studies; and a growing number of achievements in the process of education. Since the child's with speech impediment personality is placed at the centre of the educational system, the provision of favorable conditions for his all-round development is highly important. The pedagogy of co-operation creates an ideal environment for the implementation of such vital tasks as the preservation and strengthening of health in pupils and teachers alike. Love of children, the optimistic belief in them, the absence of direct compulsion, the priority of positive stimulation, and tolerance to children's imperfections, together with the manifestation of democratic relations – the child's right of free choice, mistake and personal point of view – are greatly conducive to the formation of sound psyche in the child. Each lesson should take into account the pupil's with speech impediment individual potentialities and aptitudes. The health-saving technologies constitute a system of measures to protect and strengthen the pupils' Since the child's with speech impediment personality is placed at the centre of the educational system, the provision of favorable conditions for his all-round development is highly important. The pedagogy of co-operation creates an ideal environment for the implementation of such vital tasks as the preservation and strengthening of health in pupils and teachers alike. health, which takes into consideration the pivotal characteristics of an educational environment and the child's living conditions that may affect his health.

It is necessary for the teacher to remember that the lesson's rational organization is the most essential component of health-saving work. The main hygienic criteria of the lesson's rational organization are as follows: an auspicious psychological climate, the creation of the situation of success, the alternation of different types of activity, the succession of methods and practices of teaching, the introduction of emotional relaxation periods, and the rational use of up-to-date information technologies.

The structural elements of such rationally organized lessons include:

- Greeting;
- Inquiry about the pupils' general state;
- Relaxation;
- Health-improving exercises;
- Reflection

For those teachers who succeed in mastering a given technology, their work becomes easier and more interesting, because the problem of discipline disappears by itself, the process of emancipation takes place in them, opening up the space for their pedagogic creativity.

The changes in the field of education and reforms in society require from the school teacher the application a new approach to the process of education. The ultimate success depends on the latter's ability to arrange the lesson in the most competent way, by stuffing it with all the necessary components. The main thing is to impel children to think, to ponder, to doubt and to draw conclusion.

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## **Education for Children in Need of Special Assistance**

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**Abstract:** This article presents a brief analysis of the research work carried out to improve and modernize the system and content of education of children with special needs, normative documents, educational opportunities for children with disabilities.

It also highlights such issues as the specifics, the regulatory framework, goals and objectives, needs and principles of educational technology for children with special educational needs of foreign scholars.

**Keywords:** Convention on the Rights of the Child, "National Curriculum", "Special Educational Needs", inclusive education, inclusive education technology, curriculum, tools, methods.

### **Introduction**

In any society, the hope is that the younger generation will grow up to be mature, mature in all respects, grow up to be decent citizens and contribute to the development and prosperity of the state. The Convention on the Rights of the Child, the Education Act, and a number of important normative documents, such as the National Curriculum, state that all children, including children with physical or mental disabilities, have the right to work, to education.

On December 1, 1993, by ratifying the Convention on the Rights of the Child in 153 countries, they demonstrated their willingness to protect children's futures. The Convention is the United Nations treaty on the rights of the child around the world. The Convention is the universal formal Code of Children's Rights. The Convention divides the rights of children into four categories, covering 54 articles [1].

In 1994, UNESCO prepared a document entitled "The Need for Special Education," which addressed the organization and improvement of education for children and youth with special needs. This type of education focuses on rehabilitation.

The document states, "The purpose of organizing special education for people with special needs is to rehabilitate children and adolescents with physical or mental disabilities in an independent, cohesive living environment." E. L. Goncharova, O. S. Nikolskaya, and O. I. Kukushkina emphasize that a child in need of special education must have the necessary conditions for maximum development, training, and education. It is also implied that for each category of children with disabilities, separate instruction must be provided in an equally clear, detailed, and scientifically sound form, depending on each age, developmental stage, and stage of learning.

Children with disabilities are capable of performing tasks and tasks as quickly and as well as children with normal development, but at the level of ability. Disability does not mean failure.

In any case the child continues to develop, regardless of illness or deficit, and problems. According to D.B. Yakubzhanova, the problem of training, education and socialization of children with physical or mental disabilities is widely studied by the scientific community. According to the plan "Education for All", adopted on the basis of the Dakar Declaration, the issue of introducing inclusive education into the system of general education all over the world acquires special importance. Today, the increasing importance of the social approach to the concept of "disability" makes it difficult to actively integrate and socialize this category of persons, as well as others, from the earliest stages of development.

The emergence and improvement of social experience in children with disabilities is more difficult than in children with normal development. Because physical and mental disabilities, commensurate with their age, prevent them from acquiring knowledge, skills and abilities in various spheres of life and freely enter into socio-cultural relationships.

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It is necessary to create the necessary psychological and pedagogical, corrective conditions for the education of children and adolescents with disabilities in an educational institution, to carry out mental development, social adaptation through the implementation of general education programs and remedial work aimed at their abilities. Around the world, children with physical or mental disabilities are recognized as equal participants in the development of society and the state in the political, economic, social and cultural spheres.

UNICEF supports the provision of pre-school education, general secondary education, the strengthening of social protection, the protection of the rights of children with disabilities and their involvement in inclusive education for children with special needs.

Despite the fact that the child is disabled, it is necessary to teach him or her the kind of activity he or she can do, to educate him or her, and to help find his or her place in society (social rehabilitation).

In our country favorable conditions are being created for the education of children with disabilities and their adaptation to social life. Their integration into society, first of all, is carried out on the basis of the "General Educational Project for Children with Disabilities" with the aim of restoring their health as much as possible. This is mainly related to the use of opportunities for inclusive education.

As a result, a deeper study of pedagogical and psychological features of the organization of inclusive education, its specific capabilities, identifying related problems, justification of its effectiveness becomes an urgent scientific problem. Because the method of inclusive education provides a convenient opportunity to ensure the full participation of all children in the educational process regardless of their mental and physical condition.

In particular, it helps children with special needs to communicate with others, to grow up in accordance with the requirements of the social environment, to acquire skills to meet their daily needs, to adapt to life, to study in general education schools on an equal basis. with healthy peers. contributes to the timely acquisition of lessons, responsible approach to the performance of tasks.

Inclusive education can create opportunities not only for children with disabilities, but also for children from families with healthy lifestyles in preschools, schools, academic lyceums and vocational colleges for students with different levels of learning. Achieving that students can have a positive influence on each other brings good results. However, sometimes there is a difference between healthy children and children with disabilities, children with disabilities are shamed and discriminated against because they can not join their peers, and some are stubborn and capricious because they are raised too much in the family. need to make changes in the organization of their services.

All of this makes it clear that the process of inclusive education has its challenges and imposes serious demands and responsibilities on teachers, classroom teachers, educators, and professionals working in this field. Based on research and studies, the technology of inclusive education can be characterized as follows: "Inclusive Education Technology (IET) is a systematic approach to children and youth with special needs in a system of continuing education, individualized, changing, special curricula, materials, is a process in which the pedagogical and psychological aspects of education are implemented in accordance with modern requirements by means and methods."

As a result of the introduction of inclusive education from the family in preschools, comprehensive schools, vocational colleges and universities, the general attitude towards people with disabilities has changed. This can be a factor in their success in life.

The strategy of inclusive education developed for people with disabilities and implemented on a planned basis in the community provides continuity and continuity of learning. Family - Kindergarten - School - Vocational - Employment - This system will allow prospective parents to easily and safely bring their children with disabilities into secondary and higher education.

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# **Organization of the Work of the Speech Therapist with Children with Disabilities in the Conditions of Inclusive Preschool Practice**

**Nilufar ABIDOVA**

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**Abstract** The article describes an organization of work of a speech therapist in the context of inclusive education. The tasks of psychological and pedagogical support, in relation to all participants in inclusive education, are revealed. The main areas of work of the speech therapist in the context of inclusive education of children with disabilities are presented.

**Keywords:** Organization of work of a speech therapist, conditions, inclusive education, psychological and pedagogical support, children with speech disorders, preschool practice.

## **Introduction**

Today, an inclusive education is a priority in the development of the education system in the Republic of Uzbekistan. New legislative acts have been adopted, in connection with which the concept of "inclusive education" is being introduced into the educational space, which means ensuring equal access to education for all students, taking into account the diversity of special educational needs and individual opportunities.

In turn, the concept of "a student with disabilities" is defined by law as an individual with disabilities in physical and (or) psychological development, confirmed by the psychological, medical and pedagogical commission and preventing education without creating special conditions.

Today, educational organizations implementing inclusive practice create special conditions for teaching children with disabilities together with normally developing peers. At the same time, complex psychological and pedagogical support is also organized and carried out for children with disabilities.

Caring for the realization of the child's right to full and free development is now becoming an integral goal of the activities of any educational organization. The concept of the quality of education is associated with such categories as health, well-being, security, self-realization, and respect. The organization of a high-quality educational process for children with disabilities involves not only the creation of special conditions, but also psychological and pedagogical support of children of this category in an educational organization, implemented by specialists of various profiles.

Ideas of psychological and pedagogical support are actively developed in the works of such scientists as L.V. Bayborodova, N.G. Bityanov, O.S. Gazman, I.V. Dubrovina, S.V. Dudchik, E.I. Kazakova, L.V. R. Muminova, D. A. Nazarova.

O.G. Prikhodko singles out the following tasks of psychological and pedagogical support in relation to all participants in inclusive education:

- constant monitoring of the psychological and pedagogical status of a student with disabilities in the dynamics of his mental development;
- creation of psychological and pedagogical conditions for effective adaptation and ensuring success in training;
- providing support in adaptation to new conditions of life;
- providing systematic assistance to children with disabilities in the learning process;
- organization of a comfortable stay of children with disabilities in society, taking into account their mental and physical capabilities;
- psychological support of educational programs;
- systematic psychological assistance to parents (legal representatives) of students;
- increasing the level of psychological and pedagogical competence of parents (legal representatives);

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- increasing the level of rehabilitation competence of parents (legal representatives) of students with disabilities;
- assistance in the implementation of the correct choice of an educational route for a child with disabilities;
- increasing professional competence;
- developing the skills of coordinated teamwork;

Thus, the coordination of actions of the speech therapist with all participants in educational relations will effectively correct the speech development disorders in children, to help them easily adapt in the preschool environment, develop and learn successfully. The main areas of work of the speech therapist in the context of inclusive education for children with disabilities come to:

1. Differentiated (individualized) organization of correctional and educational activities:

- individual speech therapy lessons;
- application of health-saving technologies: art therapy, game articulatory gymnastics, music therapy, massage, sand therapy, elements of sensory therapy, theatricalization.

2. Social adaptation of a child in a peer group:

- demonstration of the achievements of a preschooler in a peer group (correct pronunciation of a new sound, reciting poems, creating situations of success). Such forms of work help change the attitude of the children's collective towards a child with disabilities.

3. Expansion of the correctional space and active inclusion of a child with disabilities in the life of society:

- joint preparation of numbers for matinees, children's parties, participation in theatrical activities and various other events;
- participation in contests (for example, Internet contests, city contests, drawing contests and creative works).

4. Interaction of participants in the correctional process:

- development of an individual route for a child with disabilities by preschool teachers. Taking part in the development: teacher-speech therapist, teacher- psychologist, educators, head of physical education, head of music education;
- Carrying out joint activities with specialists and educators (organization of pedagogical projects, integrated classes, theatrical performances or stage performances in concert programs, speech therapy rhythm, game articulatory gymnastics, finger gymnastics);
- interaction with teachers of preschool educational institutions: mutual attendance of classes, diagnostics, consultations.

5. Family accompaniment:

- individual lessons "parent-child";
- advisory point;
- family clubs.

6. Creation of a developing subject-spatial environment:

- creation of a developing space for a speech therapy office;
- centers of speech development in preschool groups.

Teachers and the administration of an educational organization, who have accepted the idea of inclusion, especially urgently need to work out the mechanisms of interaction between all participants in the educational process, where the central figure is a child with disabilities.

The following forms of joint activity of a speech therapist and preschool educators are recommended during the academic year:

1. Group forms of work:

- a) Pedagogical councils (September, January, May) on approximate topics:

- "Results of primary diagnostics" has the goal of getting acquainted with speech therapy tasks and the work plan for the academic year, activating educators to work together with the speech therapist teacher on the development of children's speech;
  - "Intermediate results of correctional and speech therapy work" in order to get acquainted with speech therapy tasks and the work plan for the second half of the current academic year;
  - "Dynamics in the speech development of children" in order to summarize the results of correctional work, announcement of gratitude for active cooperation.
- b) Mini-pedagogical councils with the participation of teachers, which are devoted to the analysis of deficiencies in speech development and the choice of means of corrective influence in relation to each pupil of the group;
  - c) Open classes of the speech therapist teacher in order to familiarize educators with the basic teaching methods, the selection of visual and speech material, as well as with the requirements for the speech of children. Educators directly in the classroom assess the capabilities and abilities of each child. Open classes of educators, in which the speech therapist checks the correctness of a selection and use of methods and techniques of work to consolidate speech skills in children;
  - d) Joint preparation for children's holidays at the preschool educational institution (New Year, Defender of the Fatherland Day, International Women's Day, etc.);
  - e) Round tables, creative living rooms, workshops.

## 2. Individual forms of work:

- a) Consultations on the state of speech of a particular child, the impact of severe speech disorders on the emotional-volitional sphere of the preschooler, on his behavior in the classroom and outside; clarification of the role of educators in overcoming speech disorders, as well as the prevention of violations of written speech; recommendations for carrying out corrective speech therapy work in the process of regime moments to increase the level of speech development of a child with disabilities;
- b) Conducting open individual lessons with the aim of teaching educators specific methods of correctional work with a particular child, as well as demonstrating the success achieved by the child.

Features of the organizational and methodological direction of work during an academic year, the speech therapist teacher draws up and maintains the basic documentation: a speech card for each child, long-term and calendar work plans, individual notebooks for each child, an annual report on the results of correctional education. The speech therapist teacher participates in methodological associations, meetings of the PMPC, timely replenishes the speech therapy room with new didactic games and manuals, as well as methodological literature. The speech therapist teacher needs to constantly improve his own scientific and methodological potential, studying information about the inclusive education system in order to create the necessary conditions for children with disabilities (in particular, with severe speech impairments) on the basis of a general educational organization, as well as new provisions in regulatory legal acts.

In this regard, each area of professional activity of the speech therapist is included in a single process of psychological and pedagogical support of children with disabilities and, within the framework of inclusive education, acquires special significance, since it is focused not only on overcoming speech disorders, but also on socialization and adaptation of this category of children to environment of normally developing peers.

Currently, the organization of speech therapy assistance in preschool general education organizations is undergoing significant changes associated with inclusive trends. The speech therapist teacher of any preschool educational organization should be included in the system of psychological and pedagogical support of children with various structures of the defect and provide them with all possible support and correction of the speech and cognitive processes identified in them.

The chapter presents guidelines for organizing the work of the speech therapist, which contain several blocks:

- a package of regulatory documents on which the speech therapist teacher works in an inclusive education;
- internal documents of a preschool educational organization affecting the work of the speech therapist teacher;
- work with children with disabilities;
- interaction with specialists, as well as educators of inclusive groups;
- cooperation with parents (legal representatives) of pupils with disabilities, organized by a teacher-speech therapist and a teacher-psychologist of a preschool educational organization that implements inclusive practice.

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# **Inclusion of Parents of Children with Autism Spectrum Disorder in the Correction Process**

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**Abstract:** The article reveals the importance of including parents of children with autism spectrum disorder in the correction process. The aim of the study is to study ways of involving the family in corrective work with children with autism spectrum disorder. The article presents the phases of reactions of parents to the appearance of a child with RAS in the family and substantiates the need for knowledge of these phases to gradually include them in corrective work. As a hypothesis of the study, it was suggested that without the parents themselves reaching an emotionally stable level, it is impossible to carry out effective corrective work with children with autism spectrum disorder. In the course of the study, recommendations were developed to involve parents in remedial work. Also, the article reveals the conducted experimental work on revealing the parents emotional state and self-interest.

**Keywords:** Parents, correctional process, autism spectrum disorder, adaptation, family.

## **Introduction**

Children with autism spectrum disorders (ASD) are increasingly being targeted. This type of disorder is characterized by neurological disorder, which in turn affects human communication, socialization and behavior. In the process of correcting such a group of children, the effectiveness of involving their parents in the implementation of integrated cultivation is increasingly confirmed. Working with the child's family is an essential condition for an effective corrective work and successful adaptation of the child to ASD.

Many authors write that the family is one of the most important factors in the socialization of an autistic child, and its influence surpasses that of other social institutions (Mamaichuk I.I., 2007). Many domestic studies also note that the family acts as the «most important source of its ( autistic child) support in achieving successful social adaptation and overcoming the consequences of existing mental disorder» (Potashova I.I, 2011)thereby proving the importance of this institution.

Families raising children with autism spectrum disorders often find themselves isolated in their problems, lacking the necessary information on how to interact with the child, methods of teaching, correcting the behaviour of children. Once in a difficult life situation, parents experience severe stress, depression, anger, abrupt treatment of children, despair. Often, friendships are broken and the family is isolated and authenticated. In such situations, both adults and children need support and assistance that can and should be provided by all professionals who interact in one way or another with the child and his or her family. In the scientific and methodical literature you can find a lot of useful and informative materials containing specific recommendations for work with parents (Manelis N. G., Volgina N. N., Nikitina Y. V, 2017). This problem was addressed by such scientists as O.S. Arshatskaya, E.R. Baenskaya, I.B. Karvasarskaya, K.S. Lebedinskaya, E.M. Mastjukova, I.I. Maaichuk, O.S. Nikolskaya, V.V. Tkacheva and others.

## **Phases of psychological reactions of parents to the appearance**

In modern literature, the reaction of parents to a child's illness is considered as a severe traumatic experience, similar to that experienced by a person in a situation of loss of loved ones. The description of the psychological reaction to a traumatic event includes five temporal phases, the first of which is shock and denial - accompanied by oppression, or vice versa, chaotic mental activity, which leads to disorganization of human activity. The reaction of denying the diagnosis at first allows the parent to "survive", but cannot protect against reality. If such a reaction is delayed, then this often leads to inadequate requirements for the child, to endless changes of specialists who would give information and prognosis about the child that suits them. This is the most difficult crisis period, when parents especially need support and compassion.

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The shock and denial phase is moving into the deal phase. This stage is characterized by the parents' desire to «heal» the child, relying on justice and reward for «correct behavior» and «good deeds». Hope for miraculous healing, the search for the «ideal» doctor, specialist, «miracle medicine», the most effective method give parents the feeling of being able to influence the situation. At this stage, it is particularly important to take into account the guilt experienced by the parent. Finding the cause of the child's illness, blaming oneself or one another, affects the behaviour of family members. Parents become very sensitive to comments that relate to the child's behavior, perceiving them as criticism and attacks against themselves. Sometimes parents can «exploit» guilt of surrounding people (not included in the circle of «ideal»), becoming demanding and capricious.

After the deal phase, there is a phase of anger. If there is no improvement in the child's condition over time, anger will replace hope. Often, anger is directed at professionals who are unable to provide the necessary assistance. But because there is no public expression of anger, the parent usually hides it, keeps it in himself. This often leads to various psychosomatic diseases. Sometimes anger is shifted to other people: parents may suddenly have conflicts at work, in the family, with professionals working with the child. The phase of anger is replaced by the phase of depression. Awareness of the severity and nature of the disease leads to depressive feelings in parents. Parents of children with severe forms of autism disorders are characterized by the so-called paradoxical depression, where an objective improvement in the child's condition leads to the parents' awareness of the path that still needs to be taken with them for successful adaptation. At this point, it is important for specialists to normalize these feelings, to show that they are peculiar to all people in this situation.

And finally, there's the acceptance phase. It is considered to be achieved when parents are able to speak relatively calmly about the child's problems, to maintain a balance between the love for the child and the promotion of his or her independence, to draw up short and long-term plans in cooperation with specialists, and parents have personal interests that are not related to the child. When looking at these stages, it is important to remember that families are heterogeneous and that the emotional processes vary among their members. For some families, these stages are cyclical and repeated with each development milestone or crisis, for example, when the condition of the child worsens. And knowing the approximate signs of these phases, we can properly and gradually involve parents in collaborative remedial work with children with autism spectrum disorders.

Also, before a specialist can work with parents of children with RAS, it is necessary to know the specifics of a particular family: how the family is in crisis, what psychological protection is used, how the roles in the family are distributed, What daily hardships parents face and how they deal with them. Depending on this, we propose ways of assistance that a specialist can offer to the family, and on which it may be necessary to accompany: reduction of symbiotic connection with the child, training of its independence and autonomy, Study of the characteristics of the child and existing methods of correction, revision of family values and meanings, search for new resources (education, social work, large number of children).

Analyzing the causes of emerging problems, it is possible to conditionally identify four main options of interaction of parents with specialists in the implementation of corrective work: delegation, substitution, abstraction and cooperation. In the first case, parents prefer to participate formally in the learning process, expecting results from specialists. The most frequently used arguments in favour of this option are that the child is better listened to by the teacher, the parent does not know how to achieve results. In such a situation, the work of specialists is often assessed too critically by parents, the absence or insignificance of the result is irrefutably considered a sign of a lack of qualifications. At the same time, educational performance requirements may not take into account the child's actual capabilities. The negative consequence of this approach is to level the role of the pupil as an independent and responsible participant in the learning process. Most often this attitude towards teachers is observed in cases where the parent does not accept the situation, denies the seriousness of the problem. For professionals working with a child, this type of interaction involves excessive stress due to the lack of constructive dialogue and the high probability of conflict situations, which reduces the effectiveness of training.

The interaction of parent and pedagogue by type «substitution» is characterized by excessive involvement of parent. He actually performs tasks for the child, justifying failures by «objective» reasons: «tired, misunderstood, uninteresting» and so on. d. Closed parent position, painful perception of any comments as critical, Ignoring obvious difficulties prevents a productive dialogue with a specialist. Moreover, trying to convince the parent, to demonstrate the problem, the specialist often gives too many negative examples, unwittingly supporting the parents' ideas that the child is «biased, nagged». In this case, there is often a frequent change of specialists, training programs, an endless search for a «good» specialist, who will give the desired assessment of the parents' capabilities and prospects of the child. The negative consequences of this approach in terms of education are primarily that in pursuit of a formal result (to learn the letters, names of figures, seasons,

to learn to read, to calculate) the necessary basic concepts remain undeveloped, do not form the most important competences - the ability to apply knowledge and skills accordingly to the task.

Abstraction is a variant of minimal interaction between parent and specialists. Recognizing the existence of problems, the parent perceives the situation as «chronic» and directs efforts to adaptation, giving priority to issues of welfare and physical health of the child. Teachers' recommendations are implemented minimally or at the formal level, criticality to external evaluations is reduced. In contrast to the substitution variant, the abstraction tends to exaggerate the problem, perceiving it as fatal and unchanging. It is in these cases that children are often found to have a low level of social adaptation, secondary retardation of mental development.

Cooperation is the best way for parents to interact with specialists. F. Volkmar writes in the Guidance for Parents, Families and Teachers that, being primarily the advocates of the interests of the child, parents of children with RAS should also actively participate in the process of individual education and monitoring of this process, be involved in the school program, which would enable them to help generalize (generalize) skills, to put them in a new context. The need for such cooperation cannot be overemphasized, as unlike other developmental disorders, autism spectrum disorders represent a heterogeneous group of disorders of different, most often undetected, etiology. Each child requires an individual approach with a large amount of interventions, which can be carried out only by a team of specialists with the active participation of parents.

### **Experimental study of parental self-interest**

The purpose of the experimental study was to diagnose the self-interest of parents bringing up a child with RAS. The study involved 10 mothers raising children with autism (F84.0). The experiment was conducted in a freely assembled group of mothers. In the exemplary study the «Method of research of self-responsibility» of S.R.Pantelev was used. The results of the pilot study are shown in the table (Table 1).

Table 1 Results of the self-interest survey

<i>Scales/ Indicators</i>	<i>Number of subjects</i>				
	O	S/c	S/g	S "I"	S/w
Real low	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
Below average	2 / 4	3 / 1	5 / 5	4 / 1	2 / 1
Average	6 / 5	5 / 5	2 / 2	5 / 4	2 / 2
Above average	2 / 1	2 / 4	2 / 2	1 / 5	6 / 7
High	0 / 0	0 / 0	1 / 1	0 / 0	0 / 0

Note: O - openness; S/c - self-confidence; S/g - self-guidance S "I" – specular "I"; S/w – self-worth. Scale "Openness-closedness": 2 out of 10 people are internally honest, open, they have increased reflexion and self-criticism, they are able not to hide even significant unpleasant information about themselves (indicators above average) (10%); 6 - averages (60%) 2 - They want to present themselves in a more favorable light, they are closed, do not want to give out meaningful information (indicators below the average) (20%). Scale «Self-confidence»: 3 subjects out of 10 - indicators below average (30%); 5 - average (50%); 2 - above average (20%). Self-management scale: 5 subjects out of 10 are below the average and hence the external locus of control (50%); 2 are average (20%); 2 are above the average (20%); 1 is high and therefore the internal locus of control (10%). Scale «Mirror «I»: 4 parents out of 10 - indicators below average (40%); 5 - average (50%); 1 - above average (10%). Self-worth scale: 2 parents out of 10 - below average (20%); 2 - average (20%); 6 - above average (60%). Scale «Self-acceptance»: 2 subjects out of 10 - indicators below average - insufficient self-acceptance (20%); 3 - average indicators (30%); 5 - indicators above average - friendly attitude towards oneself, agreement with oneself (50%). Self-reliance scale: 1 parent out of 10 is very low on scale (10%); 1 is below average (10%); 4 is average (40%); 4 is above average (40%). Internal Conflict Scale: 2 surveyed out of 10 - below average and therefore negate problems by displacement (20%); 5 - average (50%); 2 - above average and therefore have internal conflicts that induce change (20%) 1 - a high rate - permanent internal conflicts, disputes, negative emotional background towards oneself (10%). The scale «Self-incrimination»: 2 parents out of 10 - below average (20%); 3 - average (30%); 3 - above average (30%); 2 - high indicators, indicating autoaggression, deep internal personality disadaptation (20%). (Table 1)

### **Results and Discussion**

The results of the diagnosis according to the method of S.R.Panteleyev's self-responsibility study show a high level of anxiety (situational and personal) primarily in all diagnosed mothers, a high level of frustration mainly in all diagnosed mothers, medium and high level of aggressiveness and rigidity. Most mothers of children with autism spectrum disorders are diagnosed as being overwhelmed by grief, guilt, fear and shame. Parents also have a negative self-relationship based on self-esteem, self-pity and self-esteem. And parents' relations with their children range from help to conflict, and parents' feelings for children are pity, anxiety, joy and guilt.

Scale "Openness-closedness": 2 people out of 10 are internally honest, open, they have increased reflection and self-criticism, they are able not to hide even significant unpleasant information about themselves (indicators are above average) (10%); 6 - average indicators (60%); 2 - tend to present themselves in a more favorable light, they are closed, do not want to give out significant information about themselves (indicators are below average) (20%). Scale "Self-confidence": 3 subjects out of 10 - indicators below the average (30%); 5 - medium (50%); 2 - above average (20%). Scale "Self-guidance": 5 subjects out of 10 - indicators below the average and, therefore, an external locus of control (50%); 2 - average indicators (20%); 2 - above average (20%); 1 is a high score and therefore an internal locus of control (10%). Scale "Mirror "I": 4 parents out of 10 - indicators below the average (40%); 5 - medium (50%); 1 - above average (10%). Self-worth scale: 2 parents out of 10 - indicators below the average (20%); 2 - average indicators (20%); 6 - above average (60%). Scale "Self-acceptance": 2 subjects out of 10 - indicators below the average - insufficient self-acceptance (20%); 3 - average indicators (30%); 5 - indicators above average - friendly attitude towards oneself, agreement with oneself (50%). Scale "Self-attachment": 1 parent out of 10 - a very low score on the scale (10%); 1 - below average (10%); 4 - average (40%); 4 - above average (40%). Scale "Internal conflict": 2 surveyed out of 10 - indicators below the average and, therefore, deny the problems by displacement (20%); 5 - average indicators (50%); 2 are above average and therefore have internal conflicts that encourage change (20%); 1 - high indicator - constant internal conflicts, disputes, negative emotional background in relation to oneself (10%). Scale "Self-accusation": 2 parents out of 10 - indicators below the average (20%); 3 - average indicators (30%); 3 - above average (30%); 2 - high rates, which indicates auto-aggression, a deep internal maladjustment of the personality (20%). (Table 1)

Diagnostic evidence supports our assumption that parents of children with autism spectrum disorder experience a range of negative emotions, depressive states, negative self-respect, autoimmune factors, and self-esteem. Thus, parents with children with autism spectrum disorders need comprehensive psycho-pedagogical assistance to include them in the rehabilitation process.

## **Methods to involve parents in the correction process**

Practical work with families bringing up children with RAS shows that with all the variety of situations in different systems, the emotional background of families remains the same in all these families for many years, it is a kind of «cocktail» from heavy emotions, among which: anger, irritation, resentment, anger, rage; fear, anxiety, panic, anxiety; own guilt, and attempts to find a culprit; shame, sense of self-worthiness, rejection; disgust, contempt, rejection, rejection; sadness, bitterness, despair, sadness, sadness, longing, apathy; disappointment; impotence, etc.

Reducing the emotional tension between parents (as well as grandparents, siblings) relieves the child of the task of "saving the family" from destruction (uniting at any cost, sacrificing himself) and gives him a chance to finally engage in his own development: to explore the world with interest, relying on reliable attachment to a psychologically stable adult. Therefore, parents' assistance to their child with ASD should be carried out in two directions: reducing tension within the family in order to provide acceptable conditions for the development of the child, and working directly with the child on his habilitation and correction of ASD.

The reduction of emotional stress within the family is achieved after experiencing personal grief, as a result of the restoration of respect and acceptance in relationships with spouses, older relatives and children. Parents often do not even realize that this task needs to be consciously paid attention to and efforts must be made to solve it. Most often, parents simply suppress their emotions, displace them, and direct all their attention to finding specialists for the child, to unsuccessful attempts at unprepared socialization, and to earning money for paid habilitation. However, without solving this problem, it is practically impossible for parents to provide effective targeted systematic assistance to their child with ASD. It is impossible because a parent who is in grief or depression is technically incapable of creating the necessary conditions for the habilitation of a child. In order to comply with all these principles, i.e. to use in practice any of the main corrective approaches, an adult must become psychologically stable, stable. That is, he must get out of the crisis, "live his grief." Then the attachment

of a child with ASD to a parent who has become psychologically stable can serve as a reliable support for him during habilitation work. This task can be solved by parents with the help of a psychologist, in personal or group psychological work.

Working with a child includes: finding specialists (doctors, defectologists, speech therapists, psychologists); studying ASD and methods of its correction; developing the skill of communicating with the child in his "language"; transfer of skills from specialists to life. This task can be solved by parents through obtaining reliable consistent information about ASD and its correction, as well as in joint work with specialists and in independent work on mastering new skills. Unfortunately, in 100% of cases, parents do not have enough of their own strength for this work. The study and development of new skills, many years of independent organization of assistance to your child and a complete restructuring of your own life require a lot of strength, physical and mental. However, all the psychic energy of the parents is blocked by un-lived repressed emotions and is spent on keeping their own psyche from destruction (Fuhr G, 2008). The energy for this work appears in the parents only after experiencing personal grief.

The key point for building effective assistance to a child with ASD in the family in both areas is the complete living of one's grief (with access to the stage of acceptance) by at least one of the parents. Ideally, this inner work of parents should be accompanied by a specialist - a psychologist, in order to prevent complications (getting stuck in one of the stages of mourning for many years), which, unfortunately, are now found everywhere.

## **Conclusion**

Thus, for the successful correction of the child's PAC, positive saturation of the attachment (emotional connection) of parents with the child is necessary (Petranovskaya L, 2015). Only the family can create the right conditions for organizing the most effective correction process. Only parents can change the prevailing emotions within the family by changing their habits. Clinical and psychological support is needed not only for the autistic child, but also for the family in which he or she is growing (family psychologist), and this support is important not only for parents, but also for the child with ASD.

## **Recommendations**

Regardless of the age of the child with ASD (early or pre-school age), the main focus of the specialist's work with the family should be aimed at restoring the normal psychological state of the parents. If the parent is stable - habilitation of the child has a chance to realize. If the parent is unstable - even the ideal work of specialists may not give the expected result.

Before the parent of a child with ASD leaves the crisis of acceptance of the diagnosis, work with grief is shown, after reaching the stage of adoption - work to overcome problems in relations between family members, as well as search for new resources.

In the work with family members bringing up children with RAS, psychoanalysis is contraindicated, because the use of this method aggravates the state of parents. In the case of children with ASD, psychoanalysis is contraindicated. Good results in practice are given by the methods of systemic family therapy, existential, humanistic approaches, emotional-focused therapy, gestalt-therapy, transactional analysis, art-therapy and etc.

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## **Social Investment as a Trend of Modern Social Policy (The Case of Russia)**

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**Abstract:** The paper presents the results of a sociological study devoted to social investment, which is one of the most perspective trends of modern social policy. The theoretical approaches consider social investment as a tool to prevent new social risks. It assumes the turning from passive money transfers to empowerment of citizens, that involves investing in human capital (children and adults' education, development of the labor market, etc.). The main study method was expert interviews (n = 160). There were specialists and heads of public organizations and NGOs, social entrepreneurs, and authorities in different Russian regions. The research results demonstrate that federal and local governments are considered as the main investor. Among the most demanded areas for social investment there are the infrastructure projects and personnel investments that contribute to inclusion of socially vulnerable groups in labor market. The social investment is construed as a strategy for the social development of regions based on the achievement of social goals combined with economic efficiency. At the same time, there is lack of interest in social investment and entrepreneurship among population, including private investors. The local governments also demonstrate weak interest to social investing. The reasons for these positions could be explained by risks of social investment policy and entrepreneurship in the field of social services. In conclusion, it is emphasized that social investment policy is a result of the ongoing transformation of the welfare state, characterizing the shift from social security (consumption) to social investment. It is initiated by the federal authorities and is implemented by local governments with involving NGOs and private companies in the production of public services.

**Keywords:** Social investment, NGO, Social services, Social entrepreneurship, Local authorities

### **Introduction**

The social policy of modern society is undergoing significant transformations. Current challenges are associated with new risks of digital transition, climate change, and labor market, epidemiological risks, demographic problems. These challenges require the development of new mechanisms of social policy. Traditional social policy, formed within the framework of the classical theory of the welfare state and implemented in practice through the redistribution of social benefits based on social insurance and social assistance systems, is not able to adequately respond to new challenges. Social policy should be modernized to optimize their efficiencies and effectiveness the way they are financed (Umbach & Tkalec, 2021; European Commission, 2013).

Social investment is one of the key areas for modernizing social policy and ways to finance it. Social investment is corresponded to changes in the priorities of social policy, that means achieving well-being is not only about social security, it is the development of social services aimed at expanding citizens' capabilities, increasing their independence from the social security system, and empowering current and potential clients of social services' organizations. The investment in the resources of developing social services system has become one of the priority areas affecting changes in social welfare systems.

It should be noted that the development of social investment in social policy has a global character, and is inherent in both European countries and countries outside the European Union, including Russia. In the EU countries, social investment was included in the current agenda a little earlier than in Russia. Despite significant differences between EU Member States, they all faced structural, social and demographic challenges; and those who moved to a growth model that included social investment in social policies early, consistently and prior to the economic crisis, showed greater growth, not only in economic categories, but also in measures of social well-being and inclusion (Bakker & Van Vliet, 2021). In 2013, the European Commission adopted the Social Investment Package, which assumed a change of the direction of social policy "towards social investment throughout life, with a view to ensuring the adequacy and sustainability of budgets for social policies and for the government and private sector as a whole" (European Commission, 2013:3).

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The transition approach is reflected in the Lisbon Declaration (2000) of the European Union and the OSCE on the transformation of the economies of their member states based on the integration of economic and social goals, and then it was specified in the subsequent EU2020 Decade Strategy (2010). In 2013, the European Commission adopted the Social Investment Package, which assumed a change of the direction of social policy “towards social investment throughout life, with a view to ensuring the adequacy and sustainability of budgets for social policies and for the government and private sector as a whole” (European Commission, 2013:3). In the document “Towards Social Investment for Growth and Cohesion”, it was developed the approach of investing in social policies, services and cash benefits, which at the same time enhance and expand employment opportunities. In particular, the Commission urged EU Member States focus on policies such as (child)care, education, training, active labour market policies, housing support, rehabilitation and health services ( European Commission, 2013: 9-10).

The European Committees have declared three main functions of the welfare state: social investment, social protection and stabilisation of the economy. “Social investment involves strengthening people’s current and future capacities. In other words, as well have having immediate effects, social policies also have lasting impacts by offering economic and social returns over time, notably in terms of employment prospects or labour incomes. In particular, social investment helps to 'prepare' people to confront life's risks, rather than simply 'repairing' the consequences. Modernisation of social policies requires systematic introduction of ex-ante result orientation in financing decisions and a systematic approach of the role social policies play in the different stages in life: from education via work/unemployment to sickness and old-age” (European Commission, 2013) The transformations include the expanse of various strategies and models of social investment, combining the provision of financial resources with the need to return them in solving social problems and meeting the social needs of the population (Deeming & Smyth, 2015).

The indicated directions are typical for the social policy of most countries, at the same time, the understanding of social investment by key actors in the social service system could be differ significantly. This article addresses on social investment in Russia. Our main research question was how social investment is understood by key actors of social policy in Russian regions. In addition, an integral part of the study was the analysis of legal documents regulating the sphere of social policy in terms of the development of social investment and entrepreneurship.

## **Theoretical background**

The concept of social investment is widely represented in the academic literature. The approach associated with social investment received particular development after the crisis of welfare states in the 1980s. The development of social investment was seen as a way to achieve a certain balance between the market and the preservation of the social protection of citizens in welfare states (Giddens, 2000; Esping-Andersen, 1996; Esping-Andersen et al., 2002; Taylor-Gooby, 2004; Hemerijck, 2013).

Umbach and Tkalec (2021) argued that social investment has been well-developed on three main perspectives: the theoretical-conceptual, critical and national case study. The theoretical social investment approach is considered primarily as a mean of overcoming new social risks (Esping-Andersen et al., 2002; Hemerijck, 2018; Kvist, 2015). Social investment assumes a redistribution of funding from passive cash transfers to financing empowerment of citizens, including investing the education of children and adults, labor market development (Bonoli & Natali, 2012; Morel et al., 2012; Bakker & Van Vliet, 2021). The main areas of social investment policy identified by experts are as follows: human capital, education, upskilling, vocational training, lifelong learning, childhood care, gender equality (Bouget et al., 2015; Umbach &Tkalec , 2021).The consistent development of theoretical approaches to social investment has contributed to a change in the conceptual and ideological foundations of the welfare state, reducing its inherent paternalism and strengthening citizens' own responsibility for their well-being (Giddens, 2000; Esping-Andersen et al., 2002;Hemerijck, 2013).

The critical view of social investment (Morel et al., 2012, Cantillon & Van Lancker, 2013)) is related to the point that in the frame of social investment policy, social goals are subordinated to economic ones. Social investment has been considered as the neoliberal approach in the social sphere which emphasizes market models and tools (Ahn & Kim, 2015). At the same time, the proponents of social investment present it as an element of a “post-neoliberal consensus” aimed at reconnecting the market with social tasks. The central issue in these debates concerns the productive or economic contribution of social policy. It was the claim, that productive value of the social investment agenda is the point which distinguished this approach from welfare state advocates on the one hand and neoliberal economists on the other (Smyth & Deeming, 2016:674).

The transformation of the social policy of the state to the policy of social investment leads to the transformation of providing services state into the state that stimulates personal activity, responsibility and encourages the desire of citizens for employment, in other words, there is a transition from the paradigm of social consumption to the paradigm of social investment, which are understood as active, rather than a passive way of social protection (Patel et al., 2013; Taylor-Gooby, 2008; Umbach & Tkalec, 2021). Jenson and Saint-Martin (2003) declared that modern social policy “should no longer focus on ‘passively’ protecting people from the perils of the market by means of cash benefits, but rather prepare or ‘empower’ people in order to maximally integrate them into the market”.

## **Method**

A sociological study of social investment in Russia was carried out in 2020-2021. At the first stage, legal documents were analysed from the point of view of the formation of a legal framework for the development of social investment and social entrepreneurship. Then empirical research was conducted. The main method of data collection was an expert online survey. The purpose of the survey was to find out the understanding of the policy of social investment and social entrepreneurship by the main actors in the system of social services for the population.

The sample consisted of 160 experts from 8 federal districts of the Russian Federation (North-western, North Caucasian, Central, Far Eastern, Volga, Urals and Siberian). 65.0% of the entire sample were employees of state organizations providing social services, 23.1% - heads and specialists of NGOs, 4.4% - social entrepreneurs, including commercial organizations, 7.5% - the regional authorities.

The key indicators for evaluating the opinions of experts were: the level of awareness of the social investment policy; views on the main directions and forms of social investment, understanding the role of NGOs and social entrepreneurship in the system of social services (Borodkina et al., 2022).

## **Results**

### **The legal context of social investment in Russia**

The transition from the policy of benefits to the policy of social investment also characterizes the modern social policy of Russia. The modern social policy is based on the Federal Law "On the Fundamentals of Social Services for Citizens in the Russian Federation" adopted in 2013. In this law, the federal government secured the division of responsibility for the social well-being of citizens between the state, non-profit organizations, citizens themselves and entrepreneurs. The state addresses civil society through non-profit organizations and private entities, creating conditions for their participation in the performance of a number of social functions that previously belonged exclusively to the state (Starshinova & Borodkina, 2020).

The opportunities to implement social investment policies have expanded significantly with the adoption of the law "On Public-Private, Municipal-Private Partnerships in the Russian Federation" dated July 13, 2015. This law facilitated access to the area of public goods for business and private organizations; this sphere was previously dominated by the state. The development of the social services system has become one of the priority goals of national programmes. In particular, the Decree of the President "On the National Development Goals of the Russian Federation for the period up to 2030" includes the federal project "Modernization of the social service sector and development of the sector of non-governmental organizations in the provision of social services". The implementation of these projects implies state support and public funding for socially oriented non-profit organizations and creates conditions for social investment.

Currently in Russia, a regulatory and legal framework has been formed to support non-state providers of social services (Benevolensky & Shmulevich, 2013) and to develop social investment. Social investment is focused on development in social projects, creating opportunities for activating the resources of the citizens themselves to overcome difficult life circumstances during their lives. At present, it can be argued that the sphere of social services is becoming attractive for social investment (Ahn, 2011; Ahn & Kim, 2015).

### **Perspectives and goals of social investment**



An analysis of the results of an expert survey allows us to determine the main directions of social investment in the Russian regions. First, this is investing in the development of producers of social services, that is, in non-profit organizations, social enterprises that already today provide social services to the population. Secondly, the experts considered investments in various social projects and programs, social enterprises that increase the ability of the inhabitants of the region, including programs for socially vulnerable groups. Finally, they considered investing in any type of social entrepreneurship, whose activities are not limited to the sphere of social services and are focused on solving a wide range of social problems, contributing to the improvement of the living conditions of the population of the region as a whole. The results of the survey make it possible to determine how much, according to experts, social investment policy is related to investments in "human capital", covering areas that expand people's opportunities in the field of employment, education, advanced training and professional retraining, as well as support families with an emphasis on empowering services.

The experts believe that the main reason for the transition to a social investment policy is the need to improve the efficiency of state social policy at the regional level (80.9% of respondents). The second most important purpose is stimulating the activity of citizens to independently meet their social needs (47.1%). The next task of social investment is to accelerate the development of market patterns by stimulating various types of entrepreneurial activity of citizens (30.6%). In addition, according to experts, social investment policy is aimed at reducing state funding on social benefits (27.4%) and at overcoming the paternalistic attitudes of Russians (19.7%).

It should be noted that experts representing NGOs, more often than other groups, emphasize the need to increase the effectiveness of social policy through the development of social investment (91.9% of respondents from NGOs indicated this task), but at the same time, to a lesser extent than experts from the public sector, they associate it with cuts in government funding. Obviously, this position is related to the fact that in recent years it is state support NGOs in the form of subsidies and grants that has become the main source of funding for the non-profit sector in the field of social services (Borodkina et al., 2022).

According to experts, the most popular forms of investment for solving social issues in the regions are financial investments (78.3% of respondents). Then, according to the survey, there is personnel investment (51.6%) that contribute to inclusion of socially vulnerable groups in labor market, and infrastructure investments (49%), and then technological investment and investments in the digitalization of the social sphere (29.3%). At the same time, it is important to note that representatives of the regional authorities gave the preferences to the digital transformation of the social service sector (66.7%), that should contribute to transformation of social services system. At the same time, there is lack of interest in social investment and entrepreneurship among population, including private investors. The local governments also demonstrate weak interest to social investing. The reasons for these positions could be explained by risks of social investment policy and entrepreneurship in the field of social services.

## **Conclusion**

In Russian society, as in most European countries, social investment is one of the topical areas of social policy, since it allows solving issues of social security (consumption) and economic efficiency. However, the Russian practice of social investment is characterized by a number of features. It is initiated by the federal authorities and is implemented by local governments with involving NGOs and private companies in the production of public services. An analysis of the results of expert interviews shows that a stable understanding of social investment policy has not yet been formed in the professional environment. The experts associate the policy of social investment, first of all, with the activities of the state to improve the effectiveness of social policy at the regional level. The state is responsible not only for creating the legal context for the development of social investments, but it also acts as the key investor. At the same time, the state, according to experts, should maintain control over the activities of NGOs and private entrepreneurs. Private business is considered as an actor of social investment only in second place. In addition, the findings show that quite often the citizens themselves are not interested in participating in activities aimed at producing social benefits and/or increasing their competitiveness in the labor market, and prefer traditional forms of support in the form of cash payments.

## **Recommendations**

In Russia as well as in European countries for the development of an effective social investment policy, the special conditions must be met. Cantillon and Van Lancker point out the follows: "First, the balance between

rights and responsibilities in the labour market should be redressed, taking the issue of care explicitly into account, which should lead to a strategy on how to ensure a decent living standard for caregivers as well as for people in need of care. Second, great circumspection is warranted in implementing policies that are built on a narrow notion of individual responsibility.” (Cantillon & Van Lancker, 2013:561).

Further development of Russian social investment policy requires changing the structure of public funding and engaging private investors. Social investment programs should be accompanied by effective information campaigns to explain the directions, tools, and effects of investing social services sphere and should become the subject of public discussions.

## **Acknowledgments**

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## **Perspectives of English Teaching at Medical High School**

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**Abstract:** The training of medical specialists with English language knowledge in Uzbekistan requires the implementation of a number of tasks such as improving the mechanism of learning of the language and effective measures for organizing activities in this direction. It is important in the medical higher education today, while teaching of English as a discipline, to master the skills of communicative competence, especially in the field of their profession, as well as working with world literature in conducting scientific research. In this regard, learning of the existing problems as well as determining the ways of further development, and a wide application of modern innovations and pedagogical technologies, is an important factor in achieving better results. The given study proposes some practical suggestions in establishment of a specific environment for teaching of English in the higher medical education of the country on the basis of profile and professional orientation.

**Keywords:** ELT, medical, students, specialty.

### **Introduction**

During the process of globalization, while English is an important and universal language, it is natural that many problems are faced with its teaching, in which the teachers from different countries of the world, having various educational systems, strive to find a unified and effective system and methodology in teaching strategy that is appropriate and correct in the process of solving existed problems. In the Resolution of the President of the Republic of Uzbekistan № 2909 “On measures for the further development of the higher education system” dated April 20, 2017, the great attention is paid to the tasks of radically improving the higher education system as well as revival of the content of Personnel Training, proceeding from the priorities of socio-economic development of the country. The decree also sets tasks to ensure the creation of the necessary conditions for the training of specialists with higher education in accordance with the demands and corresponding levels of the world standard. Therefore, it is really relevant when it comes to solving strategically complex issues of development in the field of education. The organization of training qualified specialists in medical higher education institutions puts on the agenda deep knowledge not only of subjects in the specialty, but also English language proficiency. This theory arises from the necessity of English language knowledge in all spheres of development, whether it's economics or management, as well as industry, engineering and many others, as everything is connected with modern technologies and the requirements of present world progress. Playing the major role in finding job (Clement & Murugavel, 2015) and in accordance with the requirements of our time, it is especially important to qualitatively improve the level of higher education in our country, to expand the participation of the higher education system in solving issues of providing its economy with highly qualified personnel, strategically integrated development of all regions and industries.

Improving the level of foreign language proficiency, in particular, English, is an actual manifestation of the further development of intellectual potential based on modern standards. The strategy of modern ELT is not only an important direction of educational policy, but also a reality that many scientists of the world represent as an important subject of scientific research. Professional English in close connection with scientific research (Cameron, Chang & Pagel, 2011) contributes to career growth, and based on the fact that English is an important and universal language in the process of globalization, it is natural that many problems are faced with its teaching, and therefore teachers around the world are trying to find a teaching strategy that is appropriate and correct in the process of solving this problem (Zhao, 2020).

### **Theoretical Overview**

Targeted training of personnel who know English, as well as adaptation of personnel to the level of international standards, arises from the fact of the dominance of English as a language for international cooperation in communication and science (Ammon, 2001). First of all, it affects the development of employment skills, giving

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special importance to specific professional skills and academic knowledge (UKCES, 2009). Based on the needs of students, mainly motivated to develop professional skills (Zhang, Han & Huifang, 2020), today's teaching of foreign languages is undoubtedly based on the use of a variety of techniques, taking into account the creation of a favorable atmosphere for learners and adaptation to their unique features (Firman, Friscilla, Cicyn & Fellicia, 2020).

The professional identity of a teacher requires constant improvement and professional development (Delgado, Moreno & Ballesteros, 2020) and the need to increase students' self-confidence involves the creation of a more English-speaking learning environment (Beisenbayeva, 2020). All these teaching methods work purposefully in achieving certain goals in the acquisition of language skills. According to this idea, the definition of goals and objectives based on negotiations between a teacher and a student, on the basis of which language learning manifests itself as a dynamic and interactive process, determines the importance of forming a student based on his needs (Scarcella, R. C., & Oxford, R. L. 1992). Also, there are a number of studies, which discuss the expediency of a method of transferring knowledge to a student based on the integration of linguistic and content goals, and the proper development of a communicative strategy based on a balanced synthesis of vocabulary, experience, content and vocabulary (Richards, J. C., & Rodgers, T. S. 2001). In another type of research, the activity of a foreign language teacher is manifested as the process of solving a number of methodological tasks, and the functional link between specific characteristics and methodological skills and the personality of the teacher is expressed as a phenomenon of "methodological thinking". The training of Foreign Language teachers is offered in a clearly oriented motivational environment, a coherent and cumulative expression of specific views (Khakimzianova, Ilyasova & Fakhrudinov, 2019). Although any specialist in this field is an educated and skillful master of his activity, the process of globalization and the rapid development of science and technology makes it a prerequisite for a representative of the graduate field. There is also a theory that the successful professionalism of specialists in this field is closely related to their communicative abilities, and along with writing and the ability to think logically, communicative competence is very important, with the help of which the professional potential in marketing and business communication is significantly increased, since the ability to reach agreement and mutual understanding with others is high here (Manivannan, 2019). In any case, the theory of the effectiveness of the method of the teacher's awareness of the student's interests and its connection with the learning process, as well as using different types of approaches provides a real motivational basis for the learning (Buranova, 2021).

Thus, it can be noted that modern research focuses on a number of problems. In particular, some investigations interpret the teachings related to the postmedotic state (Nagy, 2019), which summarizes the most important aspects of foreign language teaching in terms of the development of language pedagogy in different historical periods. Some teachings note such points as students' beliefs in the advantage of a kind of balance between formal-oriented and meaning-oriented activities, which is important for the formation of communicative competence in ESL methodology (McBride, 2009). A longitudinal study which investigates changes in attitudes about ESL learning (Peacock, 2001) asserts the need to eliminate any detrimental trainee beliefs before they start teaching.

### *Research questions*

Higher special education in our time implies the quality of graduates of any field with knowledge of a foreign language, especially English, which really increases the competitiveness of qualified personnel in the world labor market. The use of English in various professional fields, such as engineering (Clement & Murugavel, 2015), computer science (Peralta Castro & Acosta Dias, 2011), and many others, is primarily based on effective language learning, and this implies compulsory English for all specialties aimed at effective use of English in their future profession.

The regulatory and legal documents adopted in Uzbekistan in recent years aimed at reforming higher education, especially medical education, have made significant changes. On the way of Uzbekistan's gradual accession to the Bologna Process, a number of tasks are brewing aimed at organizing mobility in the higher education system in the country, improving technical potential, as well as creating educational and methodological support in accordance with international standards and demands. The methodology of learning English in medicine has been developed taking into account the mechanisms leading to achievements and effectiveness. It is important to consider many factors here. Due to the accelerated reform of the medical sphere in the country, the development of foreign-language competence of medical university students is becoming more and more relevant. The need for continuous improvement by modern students of the ability to work with English-language literature, the acquisition of communication skills with foreign colleagues in the framework of professional activity requires

appropriate skills. The problem of research is also actualized by economic, social and political indicators. The accelerated development and rapid pace of computer literacy, with the increasing ability of young people to efficiently and quickly process information in English, as well as the process of globalization of the modern world require mastering active skills, as shown in Figure 1. These requirements for a modern student are directly related to learning a foreign language, especially English.

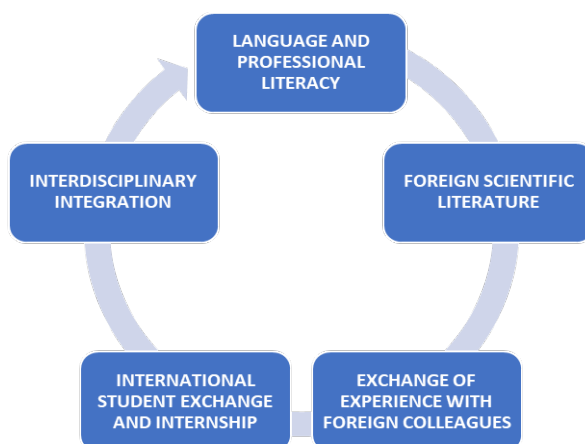


Figure 1. Criteria for a student's approach to modern development standards

Thus, it is possible to assume the following aspects:

1. Qualitative improvement of conditions for mastering foreign languages in universities whose specialty is not a foreign language, as well as educational and methodological support;
2. Extensive use of pedagogical skills, effective methods and tools in the process of improving literacy in English;
3. Creating a strong motivational environment for specialists to learn and further improve foreign languages as part of their activities;
4. To achieve a responsible approach of students to increase their potential in foreign languages.

## Method

### Research Methods

The methodology of learning English in medicine has been developed taking into account the mechanisms leading to achievements and success. It is important to consider many factors here. For example, no matter how high the indicators of mastering such competencies as reading, writing, listening in English, a specialist will not be able to show his knowledge and potential if communication is not developed. Also, the process of teaching languages today should cover the wide application of modern innovations and pedagogical technologies. Here we should focus on such attentive moments:

*Firstly*, the improvement of conditions, as well as educational and methodological support, points toward the following activities:

1. Justification of the legal-normative base. This indicates the establishment of the original content of the activity on the basis of requirements, standards and related programs.
2. Creation of educational resources. It specifies the ensuring the quality of training, based on the approved educational and methodological base and the characteristics of a higher educational institution.
3. Improving the learning process. This points to the organization and implementation of regular and step-by-step education.
4. Technical support and innovative activity.
5. Attendance, effective assimilation, assessment and conclusion of the given knowledge.

*Secondly*, the wide use of pedagogical skills, effective methods and tools while learning:

1. Implementation of the main stages of reading, speaking and listening in language teaching.
2. Training and retraining of a foreign language teacher.
3. Regular awareness raising about modern technologies. Mastering the world's best practices, practical exercises and the introduction of new types of independent activity.
4. Critical approach.

5. Communicative competence and the formation of communication skills. Interpretation of tasks about the importance and role of the educator in creating a personnel reserve of the generation worthy of world standards.

*Thirdly*, a strong motivational environment:

1. Correct prioritization.
2. Adaptation of professional interest to modern standards.
3. Determination of students' adaptive abilities in accordance with their social, psychological and mental state.
4. Ensuring the quality of training in accordance with the requirements.
5. To ensure that students are satisfied with the lesson.

### *Purpose and Strategies*

Consequently, the implementation of these goals and objectives requires not only activity and educational qualifications, but also an integrated approach to the level of all current participants in the educational process as a whole. A set of studies related to the development of a new approach to the professional and methodological training of English language teachers in medical universities provides teachers who are ready to work in a new paradigm of education, with a gradual professional development of a specialist with the necessary level of knowledge of the language, taking into account professional needs. This, in turn, is a flexible but mobile study of a foreign language, with the definition of the characteristics of various levels of professional competence and the development of theoretical and practical foundations for the formation of professional and methodological competence based on integration into medical science and education. The stages and models of training such a specialist require a special approach taking into account the modern needs of the medical field.

The beginning of any activity sets the initial and main goals, their management plan, as well as deadlines for implementation. When determining the methods of performing the tasks of teaching English, it is necessary to ensure the organization of this process taking into account the variability of internal and external conditions. These criteria are considered one of the main steps to ensure the implementation of current and strategic plans and are presented in table 1, where the methods of implementation and achievement of results are systematically divided into such stages as *purpose* (along with understanding the essence of learning a foreign language, it is necessary to determine what changes will be made to it; formation of communicative competence and communication skills; interpretation of the duties of a teacher when creating a reserve of a new generation of personnel that meet international standards), *the reason* (here it is important to find an answer to the question why it is necessary to master foreign languages; to find out whether the achievement of professional maturity and the acquisition of foreign languages by teaching staff is an important task at the modern level), *the activity* (implementation of the main stages of the process of reading, writing, listening and speaking in learning the language; application of effective methods and accumulation of experience), *the term* (setting the time of mastering foreign languages in the level recognition tool, in order to master the necessary skills and achieve efficiency over a certain period of time), and *evaluation* (the final stages of mastering foreign languages; evaluation criteria when assessing the level of literacy in a foreign language, and as an actual result leading to efficiency and success).

Table 1. Summary of main goals for implementation of current and strategic plans

<i>main steps</i>	<i>methods of performing</i>	<i>outcomes</i>
<b>Purpose</b>	Formation of communicative competence and communication skills	creating a reserve of a new generation
	Interpretation of the duties of a teacher	meeting international standards
<b>Reason</b>	to find an answer to the question “why it is necessary to master foreign languages?”	achievement of professional maturity
<b>Activity</b>	main stages of the learning process	Implementation of effective methods and accumulation of experience
<b>Term</b>	Setting the time of learning	Achieving competence over a certain period of time
<b>Evaluation</b>	Evaluation criteria and the actual result	Efficiency
	Optimal assessment of the level	Productivity

## **Results and Discussion**

A clear distribution of goals and objectives leads to the creation of an effective tool for modernizing the process of teaching English in medicine. Some theoretical and practical aspects should be highlighted here:

1. Identification of the essence of the interdependence of professional higher education and the modernization process, as well as the development of a new style of teaching English in medical universities.
2. Development of measures aimed at cardinal update of English proficiency in medicine, and regular appraising of it to a new qualitative level.
3. Responsible approach to the teaching activity, constant professional development of professional skills.
4. Extensive use of advanced technologies, effective modern techniques, creation of the necessary learning environment.

## **Conclusion**

Since the medical educational system is being developed taking into account today's economic and socio-political requirements, as well as the needs of modernity, and will undoubtedly continue to be improved, a methodically high-quality organization of ELT is required. I would like to note the following perspectives of English teaching at medical high schools in the country:

1. Systematic organization of methodological techniques.
2. Development of specific principles in the methodology.
3. Adaptation of this methodology taking into account practical professional skills.
4. Creation of a new model of a foreign language for non-linguistic higher professional education.

## **Recommendations**

The development of the country is inextricably linked with the education and training of competent specialists. The current reforms in the higher education system imply ensuring a decent standard of living for people, taking into account the increasing needs of the modern world. To achieve the set goals and objectives in teaching English to medical students, and raising their level of knowledge to the required level, the following promising steps ensure the effectiveness:

- analysis of values through a critical approach;
- the ability to participate in the socio-economic life of the country, the development of specific skills of language competence in the specialty;
- training of highly qualified personnel for the labor market;
- formation of an active civic position through participation in the educational process.

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# **Awareness and Acceptance of Knowledge Sharing CSR Activities among Our Students**

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**Abstract:** In the frame of an Erasmus project (BEESE) different universities cooperate with each other to analyze youngsters' motivation to be a Pro Bono volunteer. Pro Bono is a CSR activity based on knowledge sharing, which means that our students utilize their knowledge to support NGO's with the help of professional supervisors came from business and academic fields. During our primary research members of Z generation has been conducted: how we can motivate students, what they think about Pro Bono and voluntary as whole and how we can build the CSR programs in to our teaching activities. Based on the results we can prepare a guide book and relevant suggestions for the universities to announce a Pro Bono CSR activity as a subject. Based on the research experience we could understand the main motivation of students to be a volunteer, and how we can promote the Pro Bono values with success among them.

**Keywords:** Pro Bono activity, CSR, higher education, Generation Z

## **Introduction**

Boosting Employability and Empowering Social Engagement (BEESE) in High Education through Pro Bono is an international project included Spanish, Portugal, Bulgarian, Hungarian and France partners into the whole process. The general objective of this Project is to contribute to the achievement of relevant and high quality skills in High Education students to improve their employability, by gaining practical experiences in their field under the guidance of professional experts from companies, and to promote social engagement and civic competences of High Education students by working with NGOs. Also, the Project aims to strengthen the role of H regionally with enterprises and NGOs. Finally, NGOs will benefit from the free of charge consultancies developed by students and mentored by companies that they could hardly pay at market prices, thus professionalising their activity and increasing their social impact.

The BEESE project aims to strengthen the employability of Higher Education students and future graduates by developing and testing innovative tools and different models of Pro Bono programmes that enable European Higher Education Institutions to develop robust and effective methodologies to promote civic competences and students' social engagement. Through the development of partnerships between Universities, Enterprises and Non-Governmental Organisations, students will benefit from unique opportunities, such as the development of consultancy activities in local organisations, guided by mentors and business professionals. In this context, the partners of this consortium aim to promote the students' acquisition of transversal skills through volunteering activities and the development of Pro Bono programmes, creating tools for young people to participate in community-related activities, through "Pro Bono projects" of consultancy, which can benefit all actors involved (companies/non-profit organisations and Higher Education Institutions).

The project also presents other innovative activities, such as a research that will identify not only the needs of organisations in these areas, but also the motivations of students to engage in voluntary activities and pro-bono projects. This comparative analysis, which involves five European Institutions, will enable to identify individual and institutional factors, in different cultural realities, and to enhance the participation of students in programmes of this nature, within the scope of their academic experience. This innovative approach will, on the one hand, increase the employability potential of students, through the acquisition of new competences in a real professional context and, on the other hand, strengthen awareness and social engagement of youth, skills that will accompany them throughout their lives and professional careers. At the institutional level, this proposal contributes to strengthen the regional role of Higher Education Institutions and to increase the social impact of these and other international organizations that will have access to the project results.

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## **Literature review**

### ***The importance of volunteering***

Volunteering requires some sort of human, cultural and social capital from the individuals. (Wilson-Musick, 1997). According to this wording, volunteering is indeed a type of measure of the state of society. Where there is no social capital, the level of volunteering cannot be high either. The organizations usually turn towards volunteering more frequently, and it is especially illustrated in their CSR projects. It is a more widely expected behaviour from the organizations and companies to do something for their immediate environment. Volunteering of individuals is basically restricted to the previously mentioned donations. The World's Most Generous Countries Report published by Gallup notes that although many people give money to charities in Hungary too, we still underperform in terms of donations (Gallup, 2018). The earlier studies of Eurobarometer do not consider our country frontrunners either with regard to volunteering. The flash reports made by special committees of the European Union came to the same conclusion. The above HCSO (Hungarian Central Statistical Office) table unambiguously confirms that the number of nonprofit organizations and volunteers are on the decline. An improvement can be brought about by NÖS 2021-2030, the EU politics supporting volunteerism, and finally the environmental changes that valorize the role of volunteering (e.g. COVID-19 pandemic). With the changes of the modern era volunteering appears in more and more areas of our lives. Fellowship care has pressed forward beside animal- and environmental protection, fight against starvation or poverty, climate protection and other fields. Caring for the elderly, helping the families and supporting children have gained more appreciation during the pandemic.

The stronger inclination for volunteering in individuals can affect the organizations too. Companies turn towards volunteering programs and CSR projects in a more targeted way by taking advantage of their opportunities and greater capital strength. They use donations, charitable contributions, financial aid, but they may also carry out many other activities that create community value (Rodell et al., 2017). The community value-adding activities of the organizations are highly determined by the behaviour of the individuals, and therefore it is a relevant question for the organizations as well how they can involve different generations in such activities. In Weissman's opinion volunteering also increases the value of the employees. For one thing, new abilities will be part of the organization this way. Voluntary activity helps to generate networks, through which an organization is capable of obtaining important new relationships and partners. Volunteering can even assist with career building, as the employees might gain prestige with its help, and it can also promote their qualifications and professional development (Weissman, 2012). Boston and Banta (2020) noted that the way of spending our leisure time can essentially be determined by the things we are passionate about. If our activity does not provide energy or some extra motivation for us, then it will be a missed opportunity for everyone who would otherwise profit from it (Banta - Boston, 2020). We can basically conclude that there must be something behind the voluntary activities that fills us with enthusiasm or motivate us, so the resulting benefits would appear as much as possible. From the volunteer's perspective these opportunities might even offer chances for advancement or career development. Based on former studies, people above the age of 35 participated in volunteer works in a higher proportion (ECO, 2013), however, with the emergence of generation Z this trend is changing (PCR, 2018; ESC, 2020).

### ***Specilities of Pro Bono as a tangible joint volunteering activity***

Pro Bono, a special voluntary activity based on professional knowledge transfer, which is the subject of this research. It is about young university students supporting nonprofit organizations in specific professional issues and projects in the form of volunteer work under the guidance of corporate specialists. On top of the nonprofit organizations that receive aid, it also has many benefits both for the universities and the companies. It is beneficial for the employer, because Pro Bono fits perfectly into the employer branding strategy: it gives an opportunity for the employees to work together with other organizations while broadening their knowledge and practical skills, and thereby creating social values. It is able to take the colleagues' mind off the routine tasks, whereas serving a noble cause related to the corporate culture can make them feel good. This increases employee satisfaction and enhances loyalty and motivation. Given that the program is built on team work, it is an excellent tool for the development of intra-group cooperation and project approach as well.

Pro Bono is a great opportunity for corporate HR too to recruit and find future colleagues and talents: the professional competence and social skills of the participating volunteer students can be assessed in the course of a live project. Personnel selection through such a process carries considerably less chance for error than the

traditional methods (tests, interviews). In the current labour relations landscape, which is characterized by an ever-growing demand for workforce all throughout Europe, HR needs every tool that can help in finding and keeping adequate manpower (Lazányi 2014), but it can even be perceived as a certain form of education that aims at the strengthening and development of entrepreneurial roles, which is of paramount importance across the educational spectrum (Sanchez - Sahuquillo, 2018). The voluntary knowledge transfer of students is a good opportunity to pass on the new approach, the agility typical of generation Z, which the nonprofit organizations and the small and medium-sized enterprises are equally lack of. The different knowledge attitudes and competences of the younger generation arm the mentored organizations and their personnel with new abilities (Hagemester - Rodríguez-Castellanos, 2019). The programs implemented with the support of large corporations have numerous advantages. Pro Bono brings adequate benefits for the participating universities as well: Through the program the universities are able to strengthen the practice orientation of the courses and broaden their corporate relationships, and in addition such events are also suitable for the sensitization of the teacher colleagues towards volunteering.

## **Methods of Pro Bono project**

During the BEESE project 4 different universities of EU prepared 3 different pilot programs: short term (1-3 days), middle term (some weeks) and long term (more than 2 months). In the frame of these pilot programmes, academic partners of the project tried to encourage the student to participate Pro Bono activity. We use the same methods and process during manage the whole pilots: recruiting, monitoring, problem solving, evaluation. Recruiting means to find the proper student for the project, at the other hand to create a brief and announcement for recruiting NGOs, which we can support with our knowledge with success.

At the same time, we also need to find a supervisor from our practical networking who will support the whole process next to the academic partner.

Monitoring was one of the most critical step of the process: professional and academic supervisor and student analyse the problem of selected NGO's. During this step we try to understand each other, realise the relevant elements of the potential project, we can find what we can do exactly for NGO's. Problem solving means the real fieldwork. During this period (different long ones) student driving with professional and academic supervisors create their own strategy, own conceptions how to manage the problem of NGO's with success. The end of the period students presents their current suggestions, remarks and results for NGOs supported by professional and academic supervisors. Evaluation means a feedback for all participants: we try to understand the main benefits of Pro Bono project from the aspect of all participants: NGO's, students, professional and academic supervisors. In addition, of course we collect the conclusions, how we can improve the efficiency of the Pro Bono project.

Pro Bono can take many formats and methods but the foundation is always the same. Business professionals with different skills support a nonprofit or a community organisation to develop or fix usually one area of operation or one important project for the NPO. This process can vary from a short consultation to a long-term series of consultations, but it always has a clearly defined time frame. The higher the commitment, the greater the impact can be. Sometimes a few hours' consultation, introduction of a new tool or method can yield important changes for the organisations. The professionals usually do not work in place of the NPO employees but it is a real partnership where engagement needs to be very high from both sides. The consultants (mentors) are there to help but they cannot commit to implementing the full project. A Pro Bono project can be effective and successful only if the NPO can commit and guarantee the resources for the implementation phase of the project.

What is crucial is the proper preparation and design of the Pro Bono programme or project. It is impossible to tackle all challenges of the nonprofit organisation in one single Pro Bono project. Thus, it is important to clearly establish what fields can be tackled and what are the expected outcomes. Therefore, preparation and a well-structured diagnosis are as important as the right framework. The results of a successful Pro Bono project often become visible and tangible only after a longer period of time when the mentors are not present anymore. It is worth it to invest and help NPOs to grow this way as they can thrive and provide better services to their clients. Pro Bono programmes and projects contribute greatly to the sustainability and the efficiency of the nonprofit and community organizations. Changing the environment and the quality of these groups creates a better and more just society.

All Pro Bono projects comprise at least two sides. The beneficiary side is usually a nonprofit or community organisation but can be a public institution as well. Generally cultural, social and healthcare institutions are on the receiving end. On the supply side, we can find the (corporate) professionals who act as mentors during the

Pro Bono experience. These experts often come from some kind of corporate background but there are cases when there is no company involvement. They can be independent or they can belong to a professional association. In many countries there are senior or retired experts or business executives with vast expertise who are ready to help different nonprofit projects. The mentors may also come from an academic background. They may also be students who have a good level of knowledge and experience; it usually makes sense to also involve professors as mentors. They can help the preparation and support the entire implementation of the project. The involvement of these academic mentors is highly beneficial and safeguards the proper outcomes of the consultation by providing additional experiences and new aspects to the joint work.

In many cases, there is a Pro Bono intermediary who is supporting the process. The added value is that they know the needs and the possible limitations of both sides and they can build a bridge and talk the right talk. If there is an intermediary in the project, they monitor the quality of the project and make sure that it reaches its initial goals.

## **Results and benefits of Pro Bono projects**

One important characteristic of Pro Bono is that it brings benefits to all sides. Through the increased work of the NGOs, it can have an important impact on their different target groups. As the work of the nonprofits becomes more professional and as they can reach a wider audience, their conditions can improve. These Pro Bono projects frequently help to create new services and entrepreneur opportunities for NGOs that foster a more stable structure or increased level of revenue. The consultations with the business professionals often broaden the horizon of the organisation and its leaders often notice opportunities that may not have been apparent or that they were not able to utilise before the project. At the same time, Pro Bono projects can have a great impact on the employees. These projects develop their soft skills which are in demand in everyday work environments; employees can develop in certain areas where they need to grow. As Pro Bono is usually a group exercise, they can also learn from their co-workers. Pro Bono is about social good and most employees feel a great level of reward. By connecting to these nonprofits, they also learn a great deal about different social causes which also provides opportunities for independent learning. Employees often express how much they have learned and gained.

Such learning can be even more relevant for a student at the outset of their professional career. Equipping them with these skills, they will be able to turn theory into practice and learn how to apply their various managerial skills into work-based solutions. Talent and leadership development is another important aspect of these projects and that is why it is recommended for students. This aspect is something that companies increasingly recognise as key. There is possibly no better way to develop future leaders' managerial skills than by providing them with a range of challenges that they have to solve in cooperation with the selected NPO. An increasing number of corporations see the value that Pro Bono offers while an increasing number is working on its integration into their business model. This practice has direct links to talent and leadership development but also to employee branding opportunities while more companies choose to translate this into their direct business benefits. Thus making Pro Bono not only a CSR action but also an integral part of the company's business operations in some cases.

Universities also recognise that providing specific field projects to students can create additional opportunities for them to grow professionally. Many students claim that alongside theoretical knowledge, they value the opportunities to use their skills in practical situations that enhance these skills. For these reasons every university ought to create Pro Bono opportunities for students. We also believe that institutions such as universities and companies have a duty to contribute to engaging their students, employees and the public. Bridges need to be built between the participants to meet challenges of the 21st century. It is an obligation and a great opportunity for the universities to grow their reputation in society.

## **Conclusions, future of Pro Bono project**

The BEESE project is one of the tangible joint initiatives that grew out of different internal discussions between a number of Global Pro Bono Network members. These continue to reflect on the needs and possibilities at the European level. Member organisations agreed that Pro Bono was gaining recognition while at the same time, it can create opportunities for professionals joining. We firmly believe that Pro Bono projects can create unique opportunities and that it is one of the best ways to deepen the different management skills and practices that are essential for all students in their future career. We are also of the opinion that such engagements create more responsible students who will be more open to social causes. A student with a memorable Pro Bono experience

will want to continue and repeat this experience in his/ her professional career. The more Pro Bono projects students undertake, the more likely they will shape the future responsible behaviour of different business actors they engage with. The greater number of socially responsible students who enter the labour market, the more likely there will be opportunities for NPOs to use such support mechanisms. Pro bono is a fairly new phenomenon worldwide but we see that in Western Europe, there are more examples of students helping with their skills. We see that such examples can be influential in many parts of Europe but we recognise that the need and the possibilities might be even bigger in the Eastern part of Europe where there are less cases and fewer opportunities for students and the nonprofit community to engage and work together.

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# **The Impact of Human Resource Management on the Development of Innovative Businesses**

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**Abstract:** This work was carried out in order to inform more about the impact of innovation technology on the development of entrepreneurship. This paper begins with the explanation about the enterprises, starting with their concept, their development over the years, where it elaborates a theory of time about the reasons why the enterprises are opened and exist, continuing with the discussion of who the entrepreneurs are, and what are the tasks theirs, and also gives us a clear picture of how businesses cannot function without business law. This research continues with the most important subject of the time, the history of the development of innovation, showing us different theories about innovation, how it has developed and how it has changed over time, continuing to the division of innovation. Part of the innovation is also the innovation in marketing, where different theories will be examined, including Ansuff's Matrix. Throughout this paper, we have also penetrated the information system, starting from the definition of the terminology of the system, to the types and development of the information system. Then the advantages and disadvantages of virtualization and office automation will be elaborated.

**Keywords:** IT, E-business, Information systems, Innovation, etc.

## **Introduction**

### **statements**

With moral and legal responsibility, we declare that the work that we presented for presentation at the conference organized by you, has not been published or presented in any form elsewhere. The declaration is valid from the two authors participating in this paper presented by us.

### **entry**

Enterprises have an important social and economic role, due to their contribution to the functioning of job creation and the functioning of the economic network. In Kosovo, the development of enterprises can contribute to facing the many challenges related to demographic growth, the need for structural change, effects of inequality as well as the high level of unemployment within the region. In business and economics, innovation is the catalyst for economic growth. Economist Joseph Schumpeter, who has contributed greatly to the study of the innovation economy, argues that industries must constantly revolutionize the economic structure from within, that is, create innovations for better or more effective processes and products, as well as market distribution, such as connecting stores to factories.

Schumpeter's (1942) key ideas about entrepreneurship, innovation and economic development are very important for evaluating alternative approaches in contemporary entrepreneurship scholarship. Schumpeter used entrepreneurship as his engine for the dynamic theory of economic development and personified this engine in the theoretical construct of the ideal type of entrepreneurs.

This ideal type of actor possessed creative work, the vision of a business idea, the antagonism of non-ovative administrators, the ability to attract investment to lure the capitalist, and to seek out activities that bring about a wide variety of innovations - be they products or processes. new, creating new market structures[18]

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- Selection and peer-review under responsibility of the Organizing Committee of the Conference

On the other hand, every enterprise relies on information systems to carry out and manage their operations, to interact with their customers and suppliers and to be part of the market.

## **Application of Information Systems in the Enterprise**

### **Information systems (IS)**

An information system (IS) is a system that collects, stores, processes and sends information important to the organization so that it is understandable and usable by anyone who needs it. The goals of the information system are: to supply the business system with necessary information for the executive subsystem (business process development), the managerial subsystem (business system management) and the information subsystem (cooperation and communication). The parts of the information system are: the system for processing transactions (operating system), the system for supporting decision-making (analytical system), the system for cooperation, communication and individual work (office system).[6]

The transaction processing system processes a range of transactions, such as:

- Providing accounts for the goods sold,
- Giving accounts for the goods received in the warehouse, as well as
- Sending supplier orders, etc.[6]

The decision support system consists of:

- Unstructured decision making,
- semi-structured decision making,
- Structured decision making.[6]

The system for communication, cooperation and individual work consists of:

- communication,
- Group work support,
- Supporting individual work,
- Content management, as well
- Document search.[6]

### **General theory of information systems**

Never in history has humanity been so flooded with waves of new information and knowledge as it is today. Regardless of where and when it is formed, information is processed and carried in fantastically short intervals, exchanged and used, being exchanged in feedback loops and influencing our own habits and ways of thinking.

From its birth, towards the middle of the 20th century, informatics as an interdisciplinary scientific discipline, which deals with the study of all these phenomena and processes, has developed very quickly. All relevant components of informatization: computerization, telecommunications, robotics, artificial intelligence, etc. will be examined in function of their application in business systems, and this means also in function of the development of productive forces. Information represents meaning, which is used very often, both in everyday life and in the fields of many scientific disciplines, theories and different technologies.[6]

The set of data, meanings or signs, which reduce or eliminate the unpredictability and indeterminacy of the recipient and which enables action by making the most optimal choice from possible events in order to increase the capacity of human knowledge of the chosen event, is called information. For the flow of information, there must be two objects: the giver and receiver of the information. Objects can be different: one-one, one-car, car-one, car-car. The expressions information and news are often taken as the same, but in the field of science that studies information, these two meanings are not the same.[6]

The main characteristic of information is its meaning, purpose and impact on the receiver during the change of his informational state. The news, which does not change the recipient's informational state, has no value, while its value increases if the changes in the informational state caused under the influence of the news content are greater. Information actually represents the content of a news story. The news may undergo physical changes during transmission, but the information always remains the same. The science that studies the ways of forming, carrying, recording, processing and using information is called informatics. With the application of computers in economic sciences, the application of informatics in economics also began. Its task is to choose problems related to organization, information,[6]



Information theory is a rather complex scientific discipline and is based on probability theory, which was developed as a discipline of mathematics, but has recently been taken as a discipline of informatics. . The most widely cited definition of the enterprise information system is: "the information system is a structured interactive complex of people, machines and actions formed to produce the regulated flow of relevant information collected from internal and external sources of the enterprise , which are used as a basis for making decisions in certain areas, which belong to the management of the enterprise".[6]

For comparison, a similar definition can be given for the information system of the enterprise, which is often encountered in the literature: "the information system of the enterprise is a continuous and interactive structure of people, equipment and actions formed for collection, sorting, analysis, evaluation and distribution of appropriate, timely and true information for use by those who bring decisions in decision-making for the purpose of improvement, planning, execution and control of the business.[6]

If the goals and criteria are defined, then based on them, the management and control bodies can make business decisions, which together with personnel, material and financial resources enter the business process. The result of the business process are: products, services, income, sales, etc. These outputs, due to control, are compared with planned plans.[6]



Figure 1. Tools for information development

### Information systems in management

The system which provides necessary information in order to make quality decisions. The inputs of the management information system are smaller than the outputs

The IS components of business management are:

- The material-technical component
- The intangible component
- The human component
- Transmitting component
- Organizational component

The law of minimum quality of management information system (Richard Nolan) says that:

"The quality of the management information system is equal to the quality of its weakest component".

The structure of the business management information system for management needs: -Decision support system, these systems provide answers to the question: What if? [6]

-Executive information systems (EIS), these systems provide answers to the question: How (should it be done)? [6]

-Transactional systems (TS), these systems give the answer to the question: with whose help can it be realized)? [6]

**DSS**-They consist of:

- Database

- Database software system
- The base of the models  
The model can be: physical model (model of an airplane, ship...), mathematical model (described by equations), verbal model (description of a procedure).

The model that is most often used in DSS is the empathy model, which asks "What if" questions, e.g. What happens if prices increase by 50%, or what happens if we reduce VAT by 5%. [6]

So, the elements of this system are:

- ✚ Hardware – physical equipment of the computer.
- ✚ Software - the instructions that direct the operation of the hardware.
- ✚ Databases - contain data that is used by application software.
- ✚ Procedures are the physical components of brochures, manuals, etc. They can be in the form of instructions for the user or for the preparation of the input by the personnel.
- ✚ Personnel - operators, system analysts, data preparation programmers, data administrators, etc. [22]

Group decision support systems are classified according to two factors:

- The proximity of the participants
- Duration of cooperation in the group  
The use of the group decision support system contributes to:
- A better atmosphere during group decision-making
- Increase in productivity
- Generating more ideas
- We allow the individual to organize his work and then present the results to the group. [6]

### **Benefits of information systems**

The benefits of information technology are:

- Visible ease in every operation
- EXCELLENCE
- control
- Presentation of information
- The accuracy
- Data reuse (comparisons, studies) [6]

Likewise, the importance of information systems for the work of the organization, the improvement of the system or the implementation of a new one should be evaluated according to:

- how well the system requirements are understood
- what are the firm's new technology efforts

Every organization must first look at both the benefits and the costs and evaluate the potential investments for information systems. Information systems personnel are the main factor that determines the modification of the system or the development of a new system.

In general, the personnel in the information systems department consists of:

- web developer,
- programmers,
- system analysts,
- operators etc. [6]

### **Utilizer**

The users of the company's information system are important resources that can create a real contribution to the fulfillment of strategic objectives and the realization of competitive advantages.

In making a decision, the firm will use its sources of information to maximize its benefits and minimize its risk, so the main manager must pay considerable attention to how he should address the final processor. [6]

The end user benefits are:

- It harmonizes opportunities and challenges
- Reduces communication clutter (redundant words)

End-user risks of processing are:

- Poorly planned systems
- Poorly documented and designed systems

- Insufficient use of information resources
- Loss of all data
- Loss of security
- Loss of control.[6]



Figure 2.User

### Information specialists

In the world, the use of Internet services, both from the aspect of communication and from the aspect of absorbing information, is growing for sure.

The continuous expansion of computer technology and information systems has enabled the opening of many jobs for specialists in these disciplines.

In general, the personnel in the information systems department consists of:[6]

- System analysts
- Programmers
- Webmaster of
- Operators etc.[6]

### system

system is a community of objects, relations between objects and relations between attributes of objects that function as a whole for the given achievement. In other words, the system represents the union of any elements that have common characteristics and form a whole.[6]

The whole which represents a system cannot be divided or decomposed into its elements without losing the main properties of the whole. Only the certain community of elements, with mutual connection of action-interaction, ensures the concrete purpose of the system's existence.[6]

So e.g. the supply service in the enterprise has the task of providing certain work equipment and other consumable elements on the basis of which the finished products are created. With the sale of these products, funds are provided, which are used for work tools, as well as for other company needs. This means that each system represents a relatively isolated and rounded community of parts, or mutually interconnected elements, which behave and function according to certain legalities on the basis of which the work and functioning of the system as a whole is ensured.

Systems can be divided into four main categories: natural systems, organizational systems, technical systems and social systems.[6]

Natural systems are based on the natural laws of matter and energy exchange and are unique throughout the world.[6]

Organizational systems are built on certain principles and doctrines and their operation is based on the exchange of various information. The main characteristic of organizational systems is their openness to other systems.[6]

Technical systems are created by one, using knowledge of physical laws. Through these systems, one processes nature and makes an impact on nature, adapting the actions of natural processes to one's own needs and goals.[6]

Social systems are formed by people as systems of relationships between people. They are formed and function according to the concepts and laws of social and natural sciences. Social systems can be different, such as: economic, social, political, legal, cultural, etc.[6]

Regarding the exchange of matter and information with the environment, systems can be divided into two characteristics: open systems and closed systems. The system, which exchanges matter and information with the environment in the volume, which affects the characteristics of the system, is called an open system.

A closed system is a system that does not combine matter or information with its surroundings in the volume, which affects their characteristics.[6]

Business systems must always have the elements, which realize the function of leadership. Sometimes this function is performed by elements, which also perform other activities, but quite often this function is performed by special elements that only have this task.[6]

The elements in the system are connected to each other depending on the algorithm, which refers to the structure of the system. The most common ways of connecting elements in the system are: chain connection, direct reacting connection and cross-reacting connection. The cross-reactive connection of the elements of the system is realized in the systems, in which the elements are dependent on the action of the other element, not directly, but with the mediation of the third element. Almost all supersystems, or high-order systems, have such connections.[6]

Information systems have the same characteristics as general systems. For this reason, they are defined as a set of components-people, procedures, notes, which are interconnected in such a way that they aim to achieve some common goal.[6]

### **Elements of the system**

The system has certain parts, or elements, which are called system objects. These elements, or parts of the system in the literature are also called subsystems, segments, or components of the system. Each subsystem can further be decomposed into a certain number of component parts, so that the subsystems can be viewed as separate systems with their own elements. When a large system consists of more subsystems, it is called a supersystem, or higher-order system. Thus, for example: the industry as a system is divided into 35 branches, 85 groups and 185 subgroups, which represent the subsystems of the industry system. Within a given branch of industry, group, or subgroup, enterprises exist as systems. Each enterprise has its subsystems or elements.[6]

The elements of the system are interconnected with certain links within the system itself. Through the connections, certain mutual relationships of the elements in the system are realized and the influence of one element on another is made.

There are also certain connections of the elements of the system as a whole with the surroundings, or the surrounding environment. The environment, for the given system, is the set of all objects outside the system for which:

- That changes in the characteristics of the environment affect the system,
- That the behavior of the system affects the changes in the characteristics of the surroundings.[6]

The effect of each element in the system depends on how it is connected and adapted to the environment. The effect of the system as a whole depends on how each element of the system works separately and how complex they are to achieve the given goal.

### **Systems Analysts**

Jexpert side in defining problems and compiling written documentation that shows how the computer should help solve identified problems. A successful systems analyst must understand not only programming, databases, networking, and computers, but also business fundamentals, including business strategy, processes, organization, and finance. He/she must be a leader and a manager, well versed in project management. He/she must be able to communicate between business functions and technology professionals and stakeholders. [6]



Picture 1. Systems analysts

### Database Administrators

They are responsible for a database. Their tasks are related to the design, implementation, operation and security of the database.

A database administrator (sometimes called a DBA) usually has to understand not only the technical side of creating, managing, and maintaining a database, but also the organizational goals behind the functions of each database.

After all, it is the role of the database administrator to ensure that the information infrastructure works efficiently and allows users to perform their daily tasks such as: retrieving financial reports or finding information about the customer. [6]

Below are some common tasks for those who become database administrators:

- Description of coding and writing a database; defining data relationships and attributes.
- Creating and modifying databases according to user needs, maintenance and improvements, understanding organizational goals in order to make recommendations and changes related to the data contained in the database.
- Archiving and retrieval of data, as well as the implementation of security measures to prevent unauthorized access.
- Managing IT staff, such as programmers and analysts, who may work directly on or with databases.
- Estimating cost, time, and other factors in projects involving database development or modifications; development, project scope and guidelines.
- Providing user regulations and permissions, training and support. [6]



Figure 3. Database administrators

**Webmaster-i:** is responsible for the content and presentation of the company's website. He must collaborate with network specialists to ensure that the communication network between the firm and its customers and/or its partners is always open. An important task of his is to monitor the visits of the users to the various pages of the website and its continuous improvement. The network specialists cooperate with the system analysts and the users, in the establishment of the data communication networks, which connect distributed computing resources. They combine knowledge from the fields of informatics and telecommunications. [23]



Figure 4. Webmaster of

### Programmers

Based on the documentation compiled by system analysts code computer programs. Some firms combine the functions of system analysts with those of programmers, creating the position of analyst programmer.

For programmers, a typical workday might involve writing programs in whatever computer language is necessary for their job—Java, for example. Programmers can also debug and troubleshoot programs when they don't work properly. [23]



Figure 6.Coders

Programmers often work hand-in-hand with software developers, as programmers translate software systems into language that computers can understand. Increasingly, programmers are handling tasks related to mobile applications and other software-based web applications. [23]

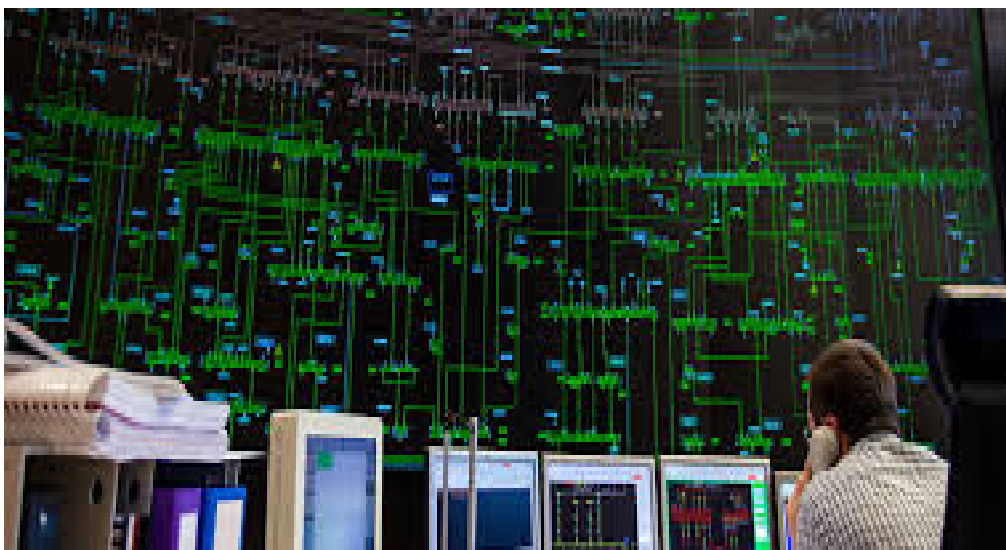
### **Operators**

Operate large-scale computing equipment, such as mainframes and servers, which are usually located in separate rooms or buildings of the firm. They monitor the control panel. [22]

In many ways being a system operator is similar to military service. Time to monitor system conditions is carefully spent in order to anticipate and mitigate potentially dangerous and costly system problems. [22]

System operators are constantly trained (prepared), utilizing their skills, and using simulation to practice new situations that expand their expertise.

However, when major system disturbances occur (such as a wind storm or equipment failure), it is the job of the system operator to respond quickly and restore the power grid to safe operating conditions. [22]



Picture 2. Operators

End-user Computing (EUC) refers to systems in which non-programmers can create working applications. EUC is a set of approaches to computing that aim to better integrate end users into the computing environment. These approaches do their best to realize the potential for high end computing to perform problem solving in a reliable

manner. Computing end-users can go from user to complexity by simply clicking a series of buttons, written Scripts in a controlled written language, to be able to change and execute live code.

Examples of end-user computing are systems built using fourth-generation programming languages, such as Mapper or SQL, or one of the fifth-generation programming languages, such as ICAD. EUC has evolved due to these key influences.[22]

- **The effect of computer education.**In the early 1980s, the impact of good computer education programs in private and public schools, colleges, and industrial firms became apparent. IT services could not respond quickly enough to user requests, and backlogs piled up with jobs waiting to enter the computer.



Picture 3. The effect of computer education

- **Low hardware cost.** During this time, low-cost computers flooded the market.



Figure 9. The flood of low-cost computers

### **Virtualization**

Virtualization technology is perhaps the most important issue in the field of IT which has started with a total change of the IT industry. The growing awareness of the advantages offered by virtualization technology stems from economic factors, scarce resources, management rules and competition.[23]

Virtualization is being used by an increasing number of organizations to reduce energy consumption and air conditioning needs, as well as to reduce the space available in the Server Data Room.[23]





Figure 10. Virtualization

Virtualization is a combination of hardware and software engineering that creates Virtual Machines (VMs) - an abstraction of computing hardware that allows a single machine to act as if it were many machines at once.

Today's IT challenge is the fact that it must always be aware of the latest technological developments. On the other hand, this allows businesses to adapt a variety of resources, ensuring the infrastructure of the moment and for a much better future. sure. [23]

#### **Advantages of virtualization:**

1. Consolidation of the server - A server that supports several VMs (virtual machines) must necessarily have a lot of memory. The CPU and other hardware parts will use a little or a lot of power, and will occupy the same physical space, reducing the cost and spending.
2. Testing and development - The use of virtual machines will rapidly increase development, isolating applications in a known and controlled environment.
3. Dynamic load balancing and disaster coverage - Server workloads are variable. Virtualization provides stability for virtual machines that are using a server's resources.
4. Virtual Desktop - The flexibility provided by virtualization allows a combination of several different operating systems in a single machine, reducing the space occupied by computers in offices, and the costs of hardware.
5. System reliability and security. [22]

#### **Disadvantages of virtualization:**

- The high risk of a physical defect - In virtualization we have a single point of failure or defect. Imagine having five servers and understand very well what effect a single physical defect would have on these five servers, making all five servers fail. were going offline.
- It is not an easy technique.
- Not supported by all applications. [22]

Virtualization as a term is very broad, but also as an extension, or more precisely as a use, it is also broad. But mainly we will give you some main uses, such as:

- Hardware virtualization
- Virtualization software
- Desktop virtualization
- Application virtualization
- Memory virtualization
- Storage virtualization
- Network virtualization [22]

**Hardware virtualization** or virtualization platform, refers to the creation of a virtual machine that behaves similar to a real computer and that carries an operating system. The concept is as follows: The software that runs

in these virtual machines is separated from the hardware resources, so each MV has a part of the capacity of the computer's hardware. So if a computer runs a Microsoft Windows system, it can maintain a phantom virtual machine known as the 'host' from the first view it looks like a computer that runs e.g. in the Linux operating system. In hardware virtualization, the host machine is the actual machine on which the virtualization takes place, and the guest machine is the virtual machine.[22]

**Virtualization software** It is a virtualization of applications or computer programs. One of the programs that is widely used for software virtualization is SVS (Software Virtualization Solution), developed by Altris. The concept is similar to hardware virtualization, where physical machines are simulated as virtual machines. Software virtualization involves creating a virtual layer or virtual hard drive space where applications can be installed. From this virtual space, applications can be executed, as long as they are installed on a host of an operating system.[22]

When a user has finished using an app, they can 'turn off' it. When an application is turned off, any changes the application made to the host operating system will be completely reversed. This means that the input registry and installed directories will not leave a trace when the application is installed or run at all. [22]

Software virtualization offers several benefits such as:

- The ability to run applications without creating a permanent registry or a changelog.
- The ability to run several versions of the same application.
- The ability to install applications that in one way or another would conflict with each other.
- Ability to test new applications in a single environment.[22]

So from all these achievements, software virtualization provides many benefits and is easy to implement.

**Desktop virtualization** is the concept of separating logical desktops from physical machines. One form of desktop virtualization, Virtual Desktop Infrastructure (VDI), can be considered the most advanced form of hardware virtualization. It is based on the direct interaction of a host computer, by means of the keyboard, mouse and monitor connected to it. The user interacts with a 'host' computer through a network connection (LAN or Internet), using a desktop of another computer or mobile device.

The 'host' computer in this scenario becomes a server computer, capable of holding several virtual 'host' machines at the same time with several users.

For users, this means that they can access their desktop from another location at any time. Using desktop virtualization allows the company to be more flexible, in every last change of technology.[22]

**Application virtualization** provides portability, management and compatibility of applications, encapsulating them in the underlined form of the operating systems in which they are executed. A full application virtualization is not installed in the first sense of the word, but it runs as if it were.[22]

#### **Advantages of application virtualization:**

- It allows applications to run in an environment that normally does not support that application.
- It can protect the operating system and other applications.
- Uses fewer resources than a separate virtual machine.
- Application virtualization protects operating systems and other applications from the damage that poorly written application code can cause.
- It runs incompatible applications side by side, at the same time and with a minimal increase in testing against each other.
- Reduces system integration and administration cost.
- It implements security and simplicity in the implementation of the operating system.[22]

**Memory virtualization** adds the memory resources of individual systems in the data center and aggregates those resources into a memory pool that is made available to every computer in the cluster. The memory pool is accessed by the operating system or by applications running on top of that operating system. This shared memory pool can then be used as a fast cache, as a messaging layer, or as a shared memory resource for CPU or GPU applications.

Memory virtualization allows networked servers in a distributed architecture to share a memory pool between them, thus bypassing the limitations they may have on physical memory. It improves memory utilization by sharing scarce resources. It increases efficiency and reduces execution time for applications that have a lot of data and a lot of I/O operations.[22]

**Virtualization of systems** of data storage (storage) is a tool by which we get better functionalities and more advanced features in data storage systems.

In the context of data storage systems, two basic types of virtualization are distinguished:[22]

1. Block virtualization - refers to the separation of storage from physical storage in such a way that it can be accessed independently of the physical device or the distributed and diverse physical structure. This separation allows the administrator of the data storage system to have more flexibility in the way he manages storage for end users.[22]
2. File virtualization-eliminates the dependency between the data accessed at the file level and the physical location where these files are stored. This offers the possibility to optimize the use of storage and to carry out easier and problem-free migration of files.[22]

**Network virtualization** is a process of combining hardware and software network resources and network functionality into a single software-based administrative unit known as a virtual network. Network virtualization is categorized as:

External - combination of several networks, or parts of networks, within a virtual unit or Internal - provides the network as a functionality of software holders in a single system.[22]

#### **4.10.1 The most useful programs for virtualization**

In order to realize the virtualization, it was possible to create several programs, the ones we will mention are:

1. VMware
2. Virtual Box

VMware provides a complete virtualization of a hardware community of the guest operating system. The VMware program virtualizes the hardware for a video adapter, a network adapter and a hard disk adapter. The host provides paths, driver passes, for USB, serial and parallel guest devices. In this way, machines have high transferability between computers, because each host looks almost identical to the guest.[23]

Virtual Box is x86 software that is installed on a host operating system as an application. This host application allows guest operating systems to be loaded and run in a virtual environment.[23]

#### **4.11 Office automation**

One of the most encountered terms in the history of computerized business development is office automation, which is about the automatic application of computer technology in office work. Office automation as a process can be dated back to the 1960s when IBM coined the term word processing to express the idea that most office activities are focused on word processing.

An advantage of OA (office automation) is the fact that it provides a communication channel between people outside and inside the company.[23]

##### **4.11.1 Tele-employment**

During the 1970s, as a result of the low prices of micro-computers and data communication devices, it became possible for individuals to work from home and thus the virtual office appeared for the first time. The term "tele-employment" was used because it describes precisely the idea that employees are "employed" electronically away from the company or firm).[23]

##### **Advantages of teleworking:**

- The flexibility of scheduling work tasks while also accommodating personal tasks,

- The firm pays more attention to the communication needs of teleworkers than in an ordinary office environment, where information is communicated orally. [23]

#### **Disadvantages of telecommuting:**

- Being isolated, they may not feel like important members of the organization
- Fear of job loss or career damage,
- Victims of an "electronic holiday",
- Increased family tension.

The virtual office is a service designed for those who need to have access to offices and business services, but avoiding the costs of opening a traditional office.

OA's ability to connect people electronically has opened up new avenues in accomplishing office work.

This made working in physical offices unnecessary. Such work can be done wherever the employee is - in a virtual office. The concept of the virtual office has its beginnings in telecommuting and hospitality.[23]

#### **The meaning of hospitality**

- Tele-routeaccommodation for employees who do their office work at home, while accommodation is partially also in the office when necessary.
- The firm provides a central facility that can be used by employees if they need space or official support.
- Employees make reservations for the facilities they need based on the work they will be performing
- The advantages of hospitality are about a more efficient use of resources and space as well as a better focus on what is required to support the office staff.
- The risks are related to the loss of the "bonuses" of the employee who does not have a private office, loss of the sense of community, and a negative impact on the corporate culture.[23]

#### **Advantages of the Virtual Office**

- Reduce the cost of infrastructure,
- Reduce the cost of equipment,
- Reduce the possibility of work interruption,
- Social contribution.[23]

#### **Disadvantages of Virtual Office**

- Low morale
- Fear of risks to security[23]

The virtual office is not for everyone. Only when employees can discipline themselves to do most of the work without control and motivation, the work will not stagnate. The virtual office can be ideal for those employees who prefer to work alone and be their own boss.

Office successes virtual es encouraged the visionaries to extend its application to the entire firm – a virtual organization. In a virtual organization, actions across the firm are designed in such a way that they are not tied to physical events.[23]

#### **4.12 Social Impact of the Virtual Organization**

- Industries that are most attracted to the concept of the virtual office and virtual organization are those that increase their value in the form of information, ideas and intelligence, which include education, health, entertainment, sports and consulates.
- The virtual office and virtual organization will reduce the demand for more gradations and people moving from one place to another making our cities quieter and more attractive places to live.

- Today almost all of the firm's activities are based on more information, ideas and intelligence than in the past. For this reason, universities and high schools include computer and informatics knowledge in their programs. IT and IS have become imperative in business processes[23]

## **Conclusions and Recommendations**

### **conclusions**

This study has generally discussed the need for the development of innovation in entrepreneurship.

In conclusion, we will list some conclusions that resulted at the end of this paper, as well as some recommendations to be taken into account for increasing the value of innovation that innovation adds.

- Enterprise is the basic unit that deals with the organization and coordination of factors of production. Entrepreneurship is a key factor for the economic and social development of a country.
- Innovation is an effective device, new idea, process, or innovative service which can be seen as the application for the best solution that meets the existing needs of the market or the new demands from the clientele. This is accomplished through the most effective services, products, processes, technologies, or ideas available to society, governments, and markets.
- In business and economics, innovation is a catalyst for economic growth or any type of enterprise. Innovation is a necessary condition for any kind of business, if we want that business to have a successful development and a sustainable life in the market.
- The main component task of innovations is the selection of problems related to organization, information, leadership and placement in the enterprise and in the economy as a whole.
- Online Marketing serves as a bridge between the company and the customers by having a wider scope
- Information systems are now an integral part of every company. These systems are used for collecting, storing, processing and reporting data in the company, serving them in daily operations, in the decision-making process, planning and sending important information for the organization.
- Business systems must always have the elements, which realize the function of leadership.  
.recommendation
- There must be innovation in the business model, integrating employees from different backgrounds and from different departments, being open to their ideas can bring innovation.
- For development and innovation in business, must for entrepreneurs to be prepared for change and open to learning from others, since the future is already here it's just unevenly distributed.
- Companies must bring innovative services, products, processes and technologies to the market, as it brings the development of efficiency within the company, as well as its financial rise.
- The development and increase in the use of online marketing, increasing the promotion of products in social networks, google ads, or other forms of marketing, since it increases the audience, enabling the internationalization of the service or product.
- The necessary use of information systems within the framework of efficiency development, cost reduction, immediate information supply, better customer service, as well as the enhancement of communication skills & methods.

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## **Reflections of Digital Obesity in Social Sciences Education**

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**Abstract:** As a result of the digital-based change and transformation in the world, the rate of using and benefiting from digital technologies is increasing day by day in all areas of life. It can be said that this increase affects all aspects of life and brings various effects in the field of education. The reflections of these effects, which are classified as positive and negative, in the field of social sciences have been tried to be evaluated in line with expert opinions in this study. In this study, which was carried out with the qualitative research method and case study model, the opinions of experts in the field of social sciences were used in the collection of data. The opinions of the field experts selected by the purposive sampling method were collected by the researcher with a semi-structured interview form, analyzed with the content analysis technique and given in figures in the findings section of the study. Considering the findings obtained in the study, it can be said that field experts have different and remarkable perceptions on the subject. This difference can be explained by the variability of the digitalization levels of field experts.

**Keywords:** Social sciences, digital obesity, education, field expert.

### **Introduction**

Digital obesity refers to the situation that occurs as a result of excessive use of digital tools. Individuals in the relevant situation experience a number of physiological and psychological problems. Unfortunately, the number of individuals who are dependent on digital tools and who are likely to encounter related problems is increasing day by day. As a matter of fact, while there were 3.66 billion social media users in 2019, it was determined that there were over 4.5 billion social media users in 2021 (We are social, 2021). Another study conducted in America shows that Americans check their smartphones 50 to 80 times a day (Allcott, Gentzkow & Song, 2022). The Digital Games Report (2019) shows that approximately one out of every six people worldwide is addicted to digital games. Within the scope of the relevant facts, it can be said that digital technologies have a large consumer mass and this situation increases the number of digital obesity (Koçoğlu, Demir & Ulukaya Öteleş, 2022).

Many studies conducted around the world show that the number of digital obesity has reached alarming levels and that digital obesity negatively affects physical, emotional and cognitive development (Scherer, 1997; Bel-Serrat et al., 2013; Hysing et al., 2015). In this direction, it is necessary to determine some strategies for the use of digital devices. Related strategies are expressed as strategies to address digital addiction. These; It can be listed as accepting that technology companies drive the individual to addiction with some applications, planning the usage times of social media accounts, preventing our workspaces from being taken over by digital tools, and discovering the power of silence (Peper & Harvey, 2018; Koçoğlu, Demir & Ulukaya Öteleş, 2022). In line with these listed measures, digital obesity can be brought under control.

Digital obesity emerges as an important concept in the process of realizing learning and teaching activities aimed at the acquisitions of social sciences, which include many disciplines. It can be said that individuals in the learning environment can learn about these acquisitions, which are prepared on an abstract basis, by embodying them through digital activities. However, it should not be forgotten that these learnings cause the individual to turn into a digital addict in the process. In this study, the reflections of digital obesity on social sciences were evaluated in line with expert opinions and detailed.

### **Method**

In this study, which was carried out with the qualitative research method and case study model, the views of experts in the field of social sciences were used in the collection of data. The opinions of the field experts selected by the purposeful sampling method were collected by the researcher with a semi-structured interview

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form, analyzed with the content analysis technique and given in figures in the findings section of the study. The findings were detailed by dividing them into categories as themes.

## Results

“What do you understand when you say digital obesity in Social Sciences?” was asked through a semi-structured interview form to the field experts forming the working group. The answers they gave to the question of the form were subjected to content analysis and the findings obtained are shown in Figure 1. Looking at Figure 1, it can be said that field experts have remarkable perceptions about the study subject.

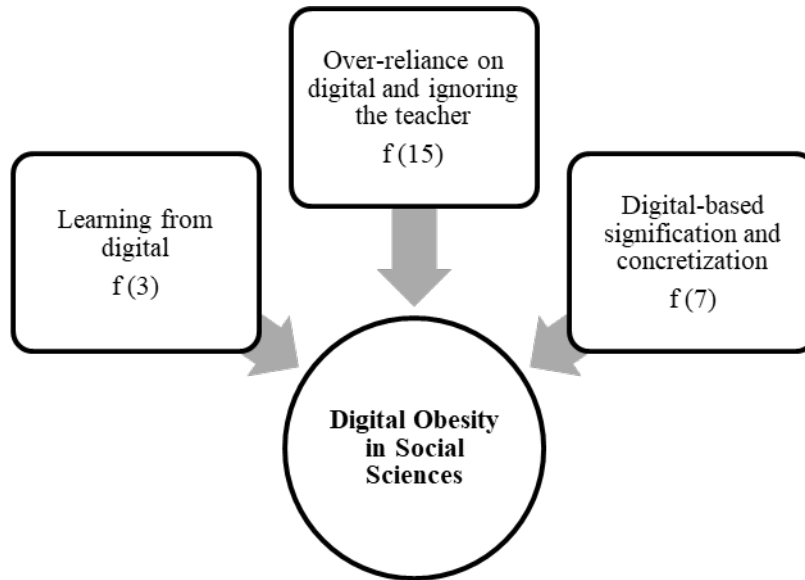


Figure 1. Opinions of the members of the working group on the relevant theme

Considering the findings in Figure 1, it is observed that the social sciences education experts who make up the study group have strikingly different perceptions on the subject. As a result of the analysis of the answers given by the members of the study group to the related question, it is seen that the sub-theme that comes to the forefront is "overconfidence in digital and ignoring the teacher" (f-15). It can be stated that the prominence of this sub-theme causes the teacher's position to be questioned in social sciences learning environments due to digital obesity. Regardless of the level of this dependency, it should not be forgotten that no digital process can replace the teacher.

“What should be done to prevent digital obesity in social sciences?” was directed by the researchers to the field experts who formed the study group through a semi-structured interview form. The answers given to the question of the form were analyzed with the content analysis technique and the findings obtained are given in Figure 2. Considering the findings in Figure 2, it can be said that field experts have developed different and remarkable suggestions for digital obesity. These suggestions were combined by the researchers in 4 different sub-themes and given below in Figure 2. Considering these sub-themes, it can be said that social science experts do not have a clear perception on the subject. This situation can be shown that as individuals who use digital, they do not believe in the addiction of digital.



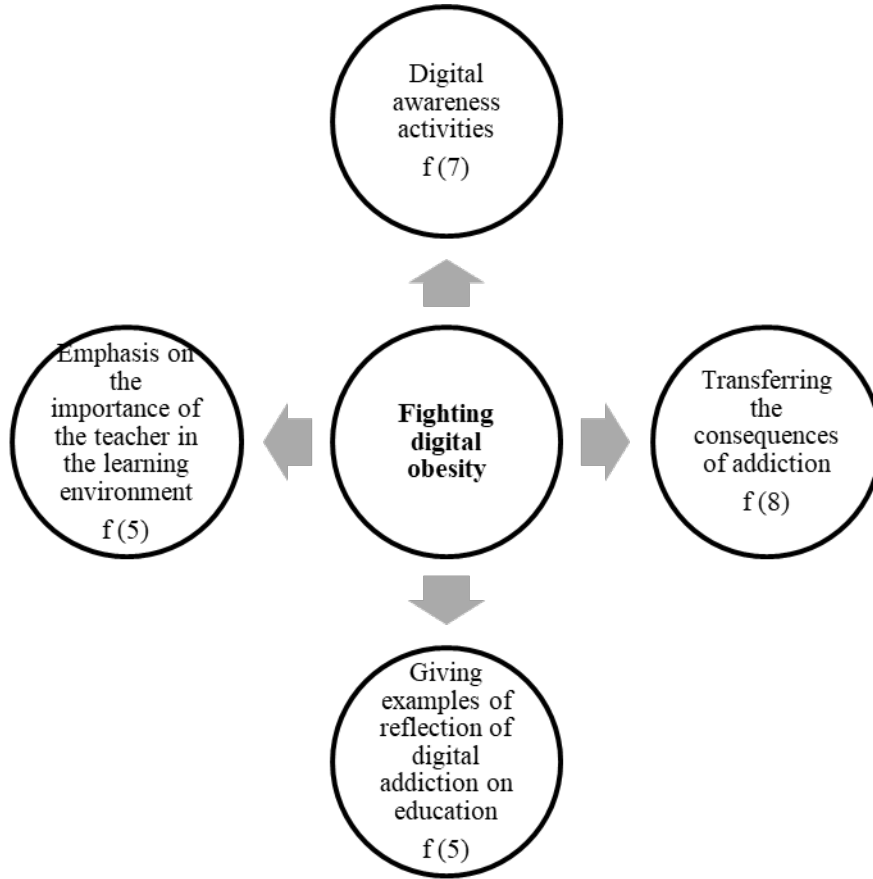


Figure 2. Opinions of the members of the working group on the relevant theme

The answers given by the field experts forming the working group to the related question are given above as sub-themes. When these sub-themes are examined, it is seen that the field experts emphasize the sub-theme of “transmitting or explaining the results of addiction” (f-8). The prominence of this sub-theme shows that concrete transmissions about the consequences of digital obesity or addiction are insufficient.

## Conclusion

In the developing technology and information age, individuals' digital obesity levels should be taken into account. Therefore, it is important to carry out this study as a preliminary study in order to determine this situation of the technology society. Based on the study, it can be said that the following results come to the fore.

- ✓ The effects of digital obesity in social sciences are not related to the structure of social sciences,
- ✓ In social sciences learning environments, the high level of digital obesity causes the teacher's position in the environment to be questioned,
- ✓ It has been concluded that field experts have different perceptions about combating digital obesity.

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## **Dimensions of Digital Learning Environments in Social Sciences Education**

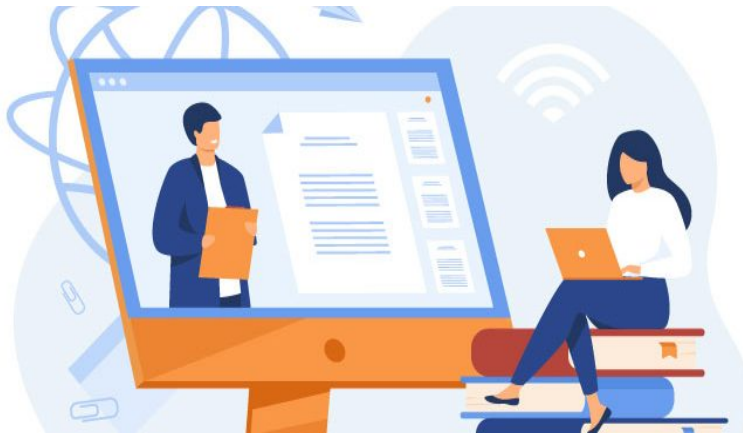
**Erol KOCOGLU**  
İnönü University

**Abstract:** Social sciences, which include many disciplines, are at the forefront of the fields of study that are considered important and valued in the education process due to this feature in different parts of the world geography. However, the abstract content of the theme, unit or learning areas included in this study area causes meaningful and concrete learning problems for learners in learning environments. For this reason, the need for learning areas that provide the opportunity to learn by doing and experiencing for permanent, meaningful and concrete learning in social sciences is increasing day by day. Although these learning areas vary, it can be stated that digital learning areas come to the fore in today's world called the information age. In this study, which aims to evaluate the functional use of digital learning areas in social sciences, the criteria that determine the quality of the learning environment are comprehensively discussed and detailed. In the study carried out with the literature review model, the features that include or should include the learning environment were evaluated by the researcher and given in the findings section.

**Keywords:** Social sciences, digital learning environment, education.

### **Introduction**

The digital world offers extraordinary benefits to all of us. Technologies of the digital age changing at a dizzying pace; communication, the way people relate and access information, and the way they learn, increasingly (Bates, 2015; Ünlü, 2019; Egüz, 2021). In this period, which is also called the information age, computer age, in educational institutions, especially in learning environments, since 1970, personal computers have been used as a dominant technology for the rapid and easy transfer of information (Wang & Torrisi-Steele, 2016; Helfaya & O'Neill, 2019; Ünlü, 2019) has started to be used. Providing platforms that allow us to collaborate and connect in this context, digital technologies open up opportunities to learn about new and important topics and take innovation to places unimaginable just a few years ago. However, the lack of knowledge and skills on how to operate and use digital technologies in learning environments poses a critical obstacle for digital learning environments. Digital learning environment can be defined as learning environments where technology-supported activities take place in line with the achievements of the course or study area. The qualified preparation of these learning environments can make remarkable contributions to the learning-teaching process. These contributions vary in terms of teacher and student variables. From a pragmatic point of view, digital learning environment can be considered as environments where the set of skills, knowledge and attitudes required to access digital information effectively, efficiently and ethically.



Source: <https://tedmem.org/>. Access Date: 05.07.2022

It can be said that the digital learning environment, which has an important place in educational institutions in the 21st century, is defined as an environment where computer and communication technologies are used to

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provide learning (Han, Dick, Case & Van Slyke, 2010; Ünlü, 2019). Based on this definition, it can be stated that the relevant institutions and organizations have important duties and responsibilities in the design and preparation of digital learning environments. In the fulfillment of these duties and responsibilities, it gained momentum in Turkey with the FATİH (Movement to Increase Opportunities and Improvement in Technology) project. This study, which is based on the dimensions of what needs to be done to prevent this acceleration from falling, has been carried out.

## Method

This study, named Dimensions of digital learning environments in social sciences education, was prepared on the basis of qualitative research method. In the study carried out with the literature review model, the findings obtained by the researcher are detailed in the findings section in figures and tables.

## Results

The findings obtained in this study, in which the dimensions of the digital learning environment in the educational process were evaluated, are given in Figure 1 below.

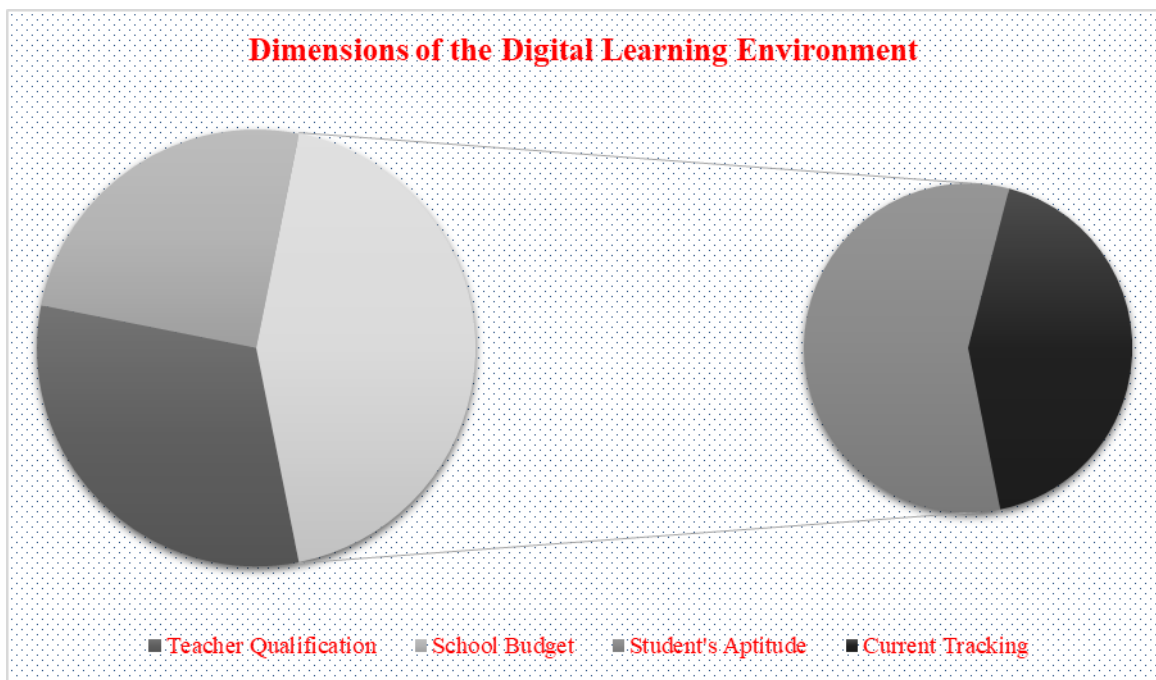


Figure 1. Dimensions of digital learning environments

Considering the dimensions given in Figure 1 above, it can be said that many factors or educational process variables should be taken into account when designing and shaping digital learning environments. It should be noted that all of these variables are interrelated. In the study, it is seen that these variables are classified as teacher proficiency, school budget, student disposition and keeping up-to-date. It can be said that the most important of these variables is teacher efficacy. Because the teacher, who is the organizer or control of the learning environment, should have the competence to benefit from the digital in the learning environment regarding the achievements of the course. While this competence contributes to the level of respectability of the teacher in the environment, it may affect the increase in the level of being modeled by the students. The lack of digital learning environments and the inadequacy of the school budget to create these environments can be shown in a school with teachers with good proficiency in benefiting from digital technologies. In order to eliminate this deficiency, the authorized professionals of the school can make up for these deficiencies by making the necessary meetings with the officials of the relevant ministry and institution. This situation will bring about an increase in the quality of the school in terms of success and equipment. It can be stated that the contribution of these environments to educational institutions has become more important during the pandemic process. The distance education process, which is carried out synchronously and asynchronously, has once again

revealed the competence of teachers regarding technological tools and equipment and the planning of school budgets in these environments (Jung & Latchem, 2011). Based on this study;

- ✓ The necessity of designing and preparing digital learning environments should be shared with those concerned in a concrete framework,
- ✓ The reflections of these learning environments on the learning-teaching process should be shared with institutions and organizations related to data and data,
- ✓ It should be demonstrated through studies that these learning environments should be prepared in accordance with the level of students in each school,
- ✓ In the preparation of digital learning environments, suggestions can be developed such that the level of development of the learner who continues his education life at school and in the learning environment should be taken into account.

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# **Investigation of The Suggestions in Doctoral Dissertations Related to STEM Education: Trends, Opportunities, and Gaps**

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**Abstract:** The number of postgraduate studies on STEM education has increased in recent years. The distribution of these studies indicates that the number of master's theses is higher than the number of doctoral dissertations. Despite this, the number of doctoral dissertations is sufficient. To this end, there are many studies in the literature that determine the general trends in STEM education. However, the number of studies examining the recommendations obtained from studies on STEM education is limited. Hence, this study aims to investigate the suggestions in doctoral dissertations conducted in Türkiye between 2019-2022 in the context of STEM education. For this purpose, the keywords "STEM education," "STEM education," and "Science, technology, engineering, and mathematics" were used on The National Thesis Center website of the Council of Higher Education of Türkiye. PRISMA flowchart was used to determine the theses to be examined. As a result, a total of 18 theses were examined. The research results obtained 4 themes. These themes are divided into categories and subcategories suggestions for researchers, suggestions for educators, suggestions for institutions ve suggestions for curriculums. The suggestions that are frequently emphasized in the theses as a result of the research are to carry out more comprehensive and different variables studies (21<sup>st</sup> skills, career and interest), time management, learner characteristics, attending the training, and updating the science curriculum.

## **Introduction**

STEM (science, technology, mathematic, and engineering) education is an approach that emphasizes 21st-century skills such as problem-solving and critical thinking by transferring science, technology, mathematics, and engineering skills in an integrated way (Bybee, 2010; Herdem & Ünal, 2018). STEM education has an important place in the agenda of many developed countries such as the USA, Japan, and England. This potential of STEM education has also attracted the attention of scientists and enabled scientific studies in this field.

Notably, many studies on STEM education have been carried out with different methods and designs in recent years. These studies are carried out with different methods such as survey (Özyurt et al., 2018), experimental (Elme et al., 2022; Shahali et al., 2016; Zhou et al., 2019), scale development (Guzey et al., 2016; Kier et al., 2014; Wahono & Chang, 2019), literature review (Hsu & Fung, 2019; Takeuchi et al., 2020; Wan et al., 2021), case study (Dönmez, 2017), and action research (Bozan & Anagün, 2019). In addition to these, researchers are also interested in systematic review studies (Kayan-Fadlelmula et al., 2022; Li et al., 2020).

In the literature, the review studies are divided into three (Gerrish & Lacey, 2010): traditional reviews (English, 2016; Freeman et al., 2019), systematic reviews (Thibaut et al., 2018; Li et al., 2020), and meta-analysis (Jeong et al., 2019; Kim et al., 2018; Zeng et al., 2018). The systematic review is research that allows the analysis of findings of studies on a specific subject within a specific protocol (Aslan, 2018). Systematic reviews are significant because they contain more scientific information and produce stronger evidence (Karaçam, 2013).

The number of trend studies evaluating STEM education studies from a general perspective in Türkiye is quite high (Çavaş et al., 2020; Daşdemir et al., 2018; Günbatır & Tabar, 2019; Kaya & Ayar, 2020; Sungur Gül et al., 2022; Yıldırım & Gelmez-Burakgazi, 2020). Besides, there are bibliometric analysis (Ha et al., 2020; Kundu et al., 2022; Le Thi Thu et al., 2021 Yu et al., 2016), meta-analysis (Khoiri, 2019; Mustafa et al., 2016; Tamur et al., 2021; Wang et al., 2022), and thematic analysis (Batdi et al., 2019; Ormanci, 2020) studies in the international literature.

Past research in the literature suggests that studies on STEM education have similar characteristics. These studies especially focus on opinions (Günbatır & Tabar, 2019; Kaya & Acar, 2020), attitudes (Ecevit et al., 2022), and skills (Çavaş et al., 2020). It is significant for researchers to be able to produce original studies on the solution of current problems rather than similar studies. To this end, different methods can be used to determine the needs in the field of STEM education, one of which is the suggestions presented in previous studies. In this respect, this study aims to systematically examine the trends in the doctoral dissertations on STEM education between the years 2019-2022. Hence, this study seeks answers to the following question:

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What are the suggestions of doctoral dissertations regarding STEM education?

## Method

This research is a systematic review conducted with qualitative research methods. The design of the study was determined as a case study (Merriam, 2015).

## Data Collection Tool

The research data were collected online through the “Suggestion Information Form” developed by the researcher.

## Data Analysis

Content analysis was used in the data analysis (Krippendorff, 2004).

## Research Procedure

This research was carried out based on the theses open to access on The National Thesis Center website of the Council of Higher Education of Turkiye. PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) was used in the study to analyze the data systematically (Figure 1).

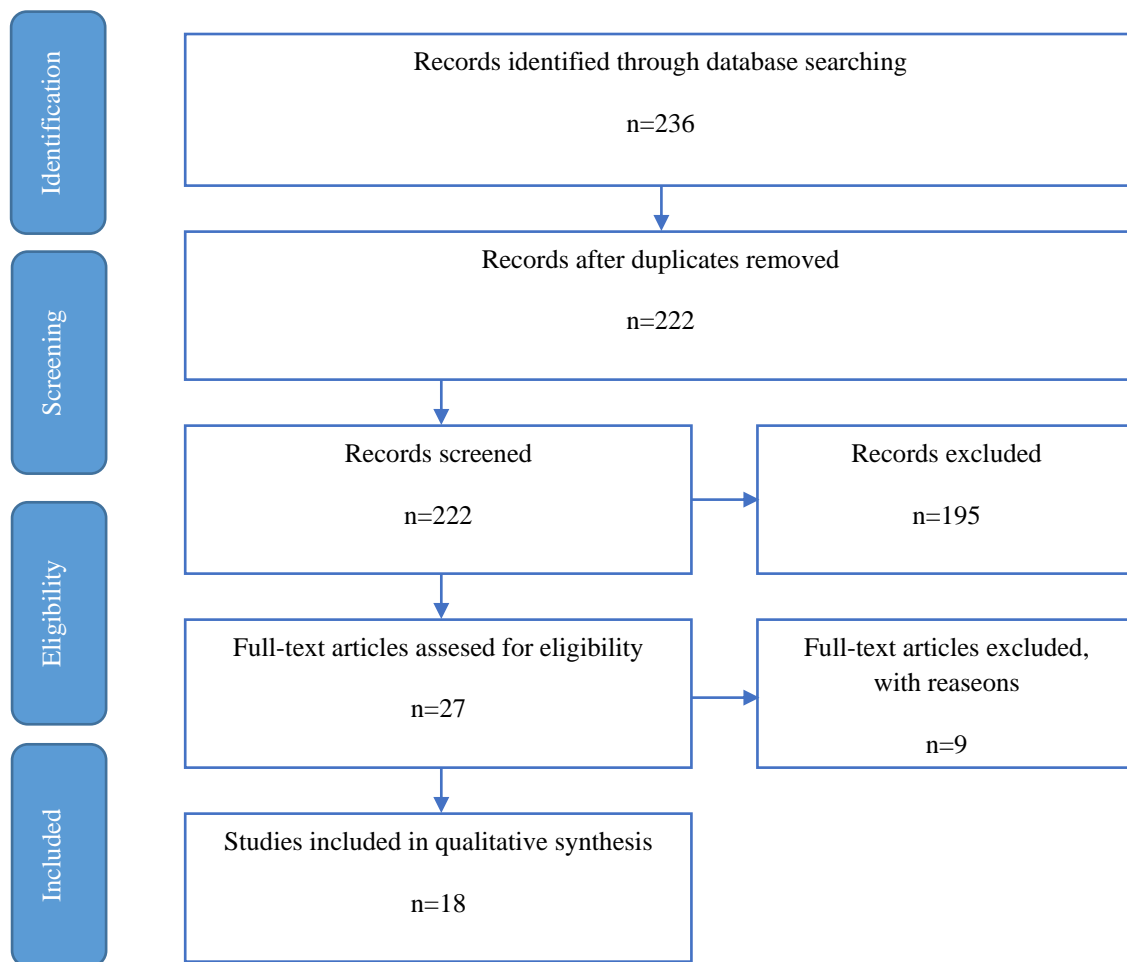


Figure 1. PRISMA flowchart in the process of selecting articles (Liberati et al., 2009)

A total of 236 graduate theses were accessed as a result of a search made by entering the keywords “STEM education,” “STEM,” and “science, technology, engineering, and mathematics” in Turkish. When repeated





Figure 1 shows that the suggestions for researchers are quite diverse. The most common suggestions among these are in the categories of comprehensive research (f=8), 21st-century skills (f=4), and career and interest (f=4). The following are some suggestions for these categories:

“...long-term studies can be conducted to examine the development of creative thinking and critical thinking skills in more detail.” T-2

“...in-depth research can be done using qualitative or mixed methods.” T-12

“...studies can be conducted that comprehensively examine the effects on 21st-century skills.” T-6

“...It is recommended that they conduct studies examining the effects of STEM education on other 21st century skills such as critical thinking...” T-11

“...other researchers can carry out applied research to improve their interests and attitudes towards STEM professions.” T-13

Additionally, it is notable that the category of teachers (f=5), which is in the target group category, is frequently mentioned in the dissertations. This finding indicates that the researchers should conduct more studies with teachers as a sample group.

**[Suggestions for Educators]**

The theme of suggestions for educators consists of 5 categories. 3 of these 5 categories are divided into subcategories. The most common category presented as a suggestion in the dissertations is the lesson (f=20), followed by interdisciplinary collaboration (f=8), guidance (f=6), and assessment and evaluation (f=5) (Figure 2).

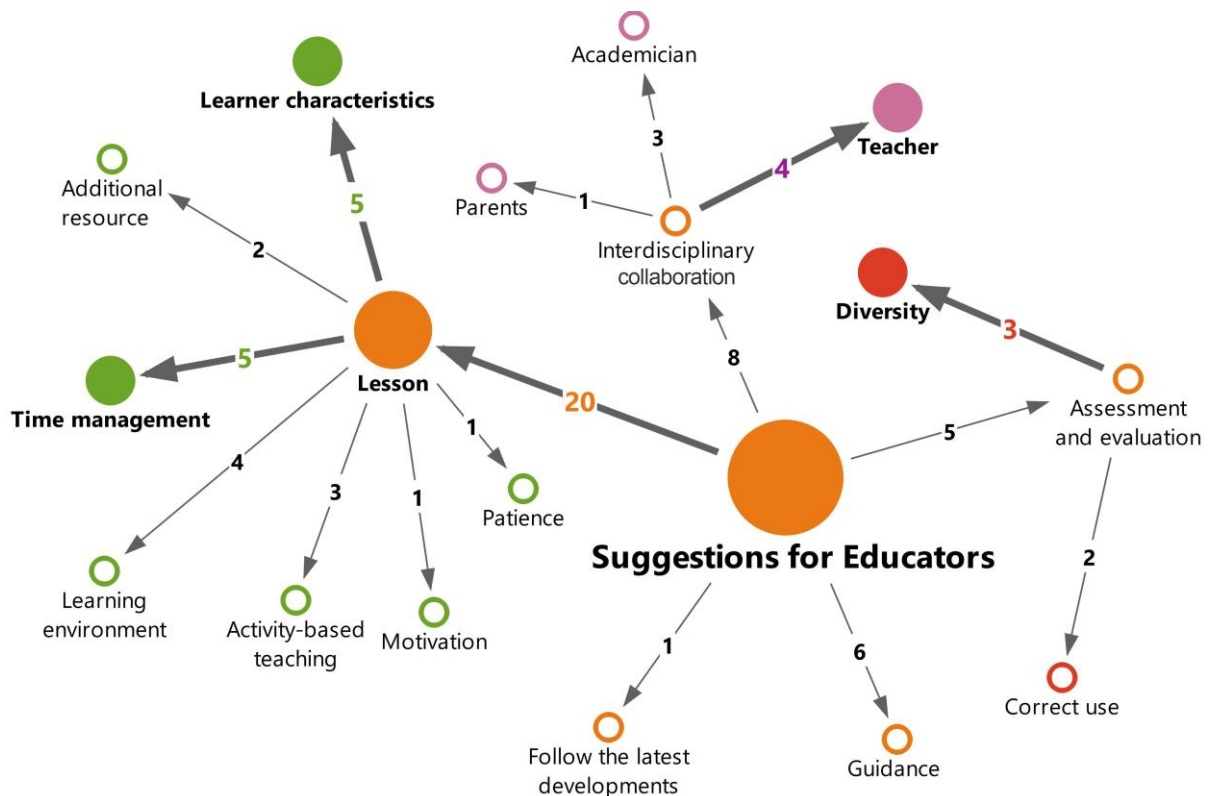


Figure 2. Suggestions for Educators

Two prominent subcategories in the course category are learner characteristics (f=5) and time management (f=5). Some of the suggestions regarding this are as follows:

“When developing lesson plans, flexibility should be provided in terms of time, and students should not have to be divided into 40-minute lesson blocks.” T-3

“...instructors should allow sufficient time for participants to procure the necessary materials and plan and build prototypes.” T-15

“...it is recommended to consider learner characteristics while planning the STEM education process” T-11

The teacher (f=4) component was emphasized more in interdisciplinary collaboration. Besides, the subject of guidance is among the suggestions of the researchers. Some suggestions are as follows:

“To achieve this, it can be suggested that they cooperate with different branch teachers.” T-2

“...it is recommended that the educators who will implement this training should assume the role of a guide in the process and give feedback to the students at every stage.” T-11

### Suggestions for Institutions

The theme of suggestions for institutions consists of 6 categories. Two of these categories are divided into subcategories. In these categories, instructor-focused suggestions (f=29) are the most significant, followed by infrastructure and learning environment (f=12). The theme, category, and subcategories are shown in Figure 3.

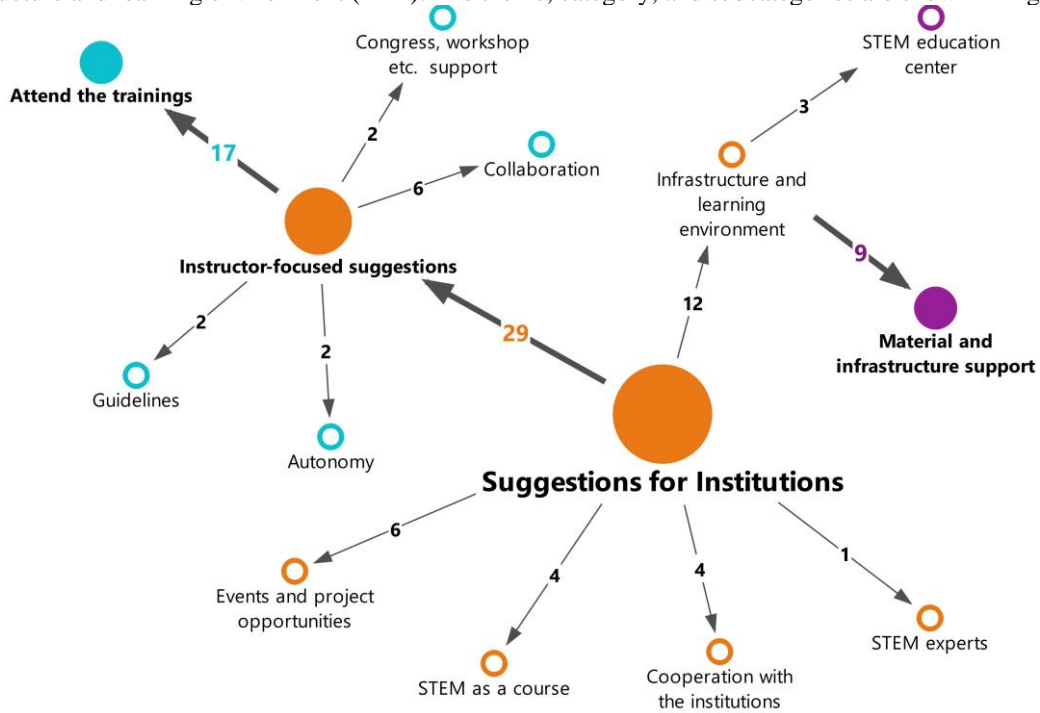


Figure 3. Suggestions for Institutions

Attending the training is the leading category in the instructor-focused suggestions category. Here are some suggestions given in this category:

“Professional development training can be organized to provide teachers with the competencies to raise awareness about the STEM education approach and implement this approach.” T-7

“...it may be more effective for teachers to take these training before service.” T-12

Another remarkable category in suggestions for institutions is material and infrastructure support. In this sense, some suggestions in this regard are as follows:

“... Necessary opportunities and occasions can be provided to teachers so that they can work on different models and projects in cooperation with each other” T-12

“...A share is allocated to the classes where STEM education is applied, and these classes can be equipped with the necessary materials.” T-7

### Suggestions for Curriculums

This theme consists of 3 categories and subcategories connected to 2 of them. Categories and subcategories are detailed in Figure 4.

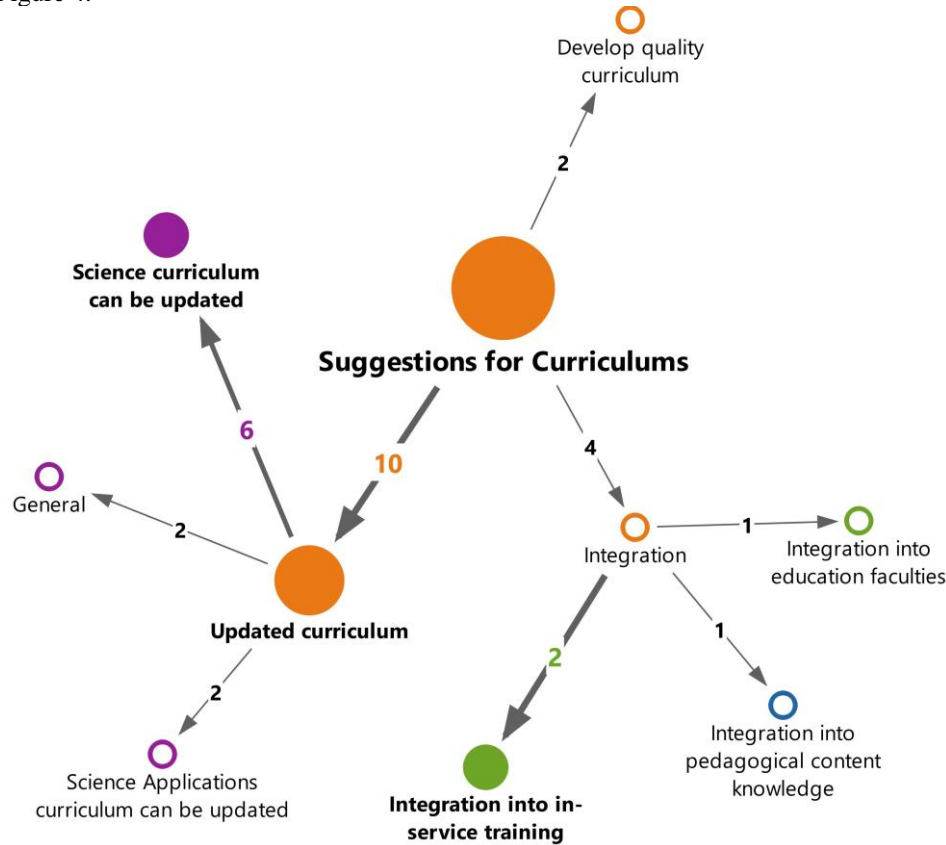


Figure 4. Suggestions for Curriculums

The updated curriculum takes the lead among the suggestions that stand out in the context of curriculum (f=10). The prominent subcategory is science curriculum can be updated (f=6). A few of the direct statements in the suggestions regarding this are as follows:

“Curriculums related to STEM can be developed and updated in accordance with an interdisciplinary approach.” T-7

“...it is thought that it is important to improve the awareness of students in this field and their skills supported by achievements by making the engineering, that is, design phase, more prominent in the science curriculum to be updated, just like in the Next Generation Science Standards.” T-1

### Discussion, Conclusion, and Suggestions

Based on the study findings, STEM education is still popular in graduate studies. To that end, in the Turkish sample, the number of theses in this direction has been on a regular increase in recent years (Çalışkan & Okuşluk, 2021). In this research, the trends in the doctoral dissertations on STEM education between the years 2019-2022 were examined. With the findings obtained, it is aimed to be a guide for new studies to be carried out on STEM education. As a result of the analyzes, the suggestions in the doctoral dissertations were grouped under 4 themes: (1) Suggestions for researchers, (2) Suggestions for educators, (3) Suggestions for institutions and (4) Suggestions for curriculums.

In the theme of suggestions for researchers, future research and different variable categories are shown to be significant. Besides, the most emphasized recommendation in the future research category is the comprehensive implementation of new studies. In the different variable category, 21st-century skills and career and interest subcategories are the most expressed items. The career and interest subcategory is shown as a remarkable finding since some studies, albeit not many, report that it is used in studies on career and interest STEM education (Günbatır & Tabar, 2019). The relevant difference, in this case, may be due to the type of studies analyzed (article, dissertation etc.).

The lesson category is in the foreground in the theme of suggestions for educators. Time management and learner characteristics subcategories under this category are frequently reported suggestions. Moreover, time management is crucial for STEM education. To this end, sufficient time should be given to STEM activities prepared for students. This highlights the importance of time planning, especially for the course. Learner characteristics are also among the prominent findings. Besides, instructors are required to plan lessons considering learner characteristics. Both subcategories are expected to come to the fore for effective STEM education.

In the theme of suggestions for institutions, instructor-focused suggestions and infrastructure and learning environment are prioritized and followed by the subcategories of attending the training and material and infrastructure support. The literature reports that the education given to the trainers in the field of STEM provides positive contributions (Erođlu & Bektaş, 2016; Siew et al., 2015; Wang et al., 2011). Hebebcı (2021) underlined the necessity of eliminating infrastructure and equipment deficiencies in order to provide STEM integration to teachers' educational environments. Many researchers state that the lack of equipment and infrastructure is a key problem in STEM education (Brown et al., 2011; Gebbie, et al., 2012).

The suggestion frequently expressed in the context of the theme of suggestions for curriculums is to update the science curriculum. Curriculums developed based on STEM education positively affect various variables such as academic achievement and attitude (Guzey et al., 2016). Science curriculums in Türkiye were revised in 2005, 2013, 2017, and 2018. The latest version of the curriculum is more functional in terms of STEM education than the previous ones. Additionally, the "Science and Engineering Applications" unit was changed and removed from being the last unit and included in all units in the curriculum (Ministry of Education, 2018).

Some suggestions can be given as a result of the research:

1. In this study, only doctoral dissertations were examined. Comprehensive studies, including master's theses, can be carried out.
2. This research covers the years 2019-2022. Future research can focus on a wider date range.

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