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Factors Contributing to Collaborative Game-Based Learning (CGBL) Effectiveness

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Abstract

In facing the Covid-19 pandemic, the teaching and learning landscape in Malaysian schools has also changed accordingly. The Ministry of Education has introduced Teaching and Learning at Home to take over the previous methods. Conventional teaching methods are unfitting during the 'new norm'. Therefore, teachers need to diversify their instructional strategies and search for various resources in the digital environment - learning in this mode should create a fun digital learning environment. Digital Game-based Learning (DGBL) is a teaching aid that is capable of promoting enjoyment in learning. This article focused on DGBL as a learning method in a collaborative environment called Collaborative Game-based Learning (CGBL). There is a shortage of insight on the factors that support DGBL's efficiency in the digital environment, specifically in CGBL in educational settings. This article employed a systematic Thematic Review (TR) approach to synthesise the literature published from 2016 until 2021 on CGBL in the digital environment. A keyword search was conducted, followed by a filtering process using inclusion criteria from the Scopus, Lens, and Mendeley databases. The author identified 65 peer-reviewed journal papers. Only 34 articles were used to be reviewed after the inclusion and exclusion processes. A TR of these articles identified 95 initial codes, later grouped into 32 codes, and created ten categories from three themes. From the TR results, it is found that the factors contributing to CGBL effectiveness are learning environment, learning motivation and learning strategies. This work provides insight on various parties in considering the implementation of CGBL in Teaching and Learning at Home as one of the appropriate alternative resources and methods.

Keywords: Collaborative game-based learning (CGBL), collaborative digital learning, digital learning, new norm learning, self-directed learning

1. Introduction

The world moves with great uncertainty, complexity, and doubt in the face of the global megatrend or the VUCA world (volatility, uncertainty, complexity, and ambiguity). The Covid-19 pandemic has affected students' learning all over the world, including Malaysia. As a result, the learning session had to continue from home from March 2020 onwards as all schools were closed and students are required to learn from home. The Covid-19 pandemic has caused many changes, especially in education, and therefore, teachers and students are expected to be more prepared to face digital learning (Wibawa, 2018). However, how far can digital learning be implemented effectively? Indeed, a different set of efficacy is needed as digital learning differs from the face-to-face learning environment. During the Movement Control Order (MCO), digital learning is the only possible method available and therefore, teachers need to be better prepared and plan their teaching materials that are suitable to the new environment. They must provide innovative teaching approaches and materials to deliver the teaching and learning process to students effectively. In addition, planning the teaching and learning method in this mode should consider fun environment conditions that are more easily done in the physical environment.

Mat Dawi et al. (2016) found that the distance between educators and students is not a barrier for implementing the learning process. While there has been an ongoing call for integrating technology in education for decades, the current pandemic has increased the need to include emerging technologies in instruction although there has been an ongoing call for integrating technology in education. As institutions struggle to come up with innovative

teaching and course design approaches that can boost the learners' retention and motivation in emotionally trying times (Bahrom, 2013; Sutton & Jorge, 2020; Huang et al., 2020), the conduct of teaching and learning processes should be creatively maintained and offer innovative infusions during interactive sessions with students.

Online learning has been widely used to ensure the success of the Teaching and Learning at Home process during the Movement Control Order (MCO). The Home Learning approach means moving the learning process from the classroom to home (Hussin, 2017). Zhou and Li (2020) asserted that online learning selection should consider teachers' benefits as well. Digital learning is teaching and learning delivered through digital technology (Agatha & Muhamad, 2016). This learning mode comprises words, video, animation, audio, and visual graphics. It is also equipped with group learning facilities with the help of online instructors. Digital learning is carried out regardless of the distance and number of members accessing it. Learning occurs when students and teachers and teaching and learning resources are separated by space and time due to the inability to carry out classes conventionally.

Digital Game-based Learning (DGBL) is one of the digital learning approaches that is getting more attention nowadays (Al-Emran, 2020; Naciri et al., 2020). During pandemic times, the virtual presence might be a good alternative, as it reinforces the connection of virtual learning spaces without physical interactions (Al-Emran, 2020). DGBL includes a method of learning that can effectively increase learning using game playing (Campos, 2018). Using this approach would make it easier for students to use the game as a learning approach. As an input subject content, several observations indicated that children or students could absorb their studies or information about 80%, and it can be done through a simulated approach (Prasetyo & Sutopo, 2018). DGBL describes an approach in teaching where students discover related aspects of the game in a design game. DGBL is a centralised educational study that uses electronic games for educational uses. The DGBL process leverages the game on the computer or gadget as a medium that delivers learning, enhances understanding and knowledge capabilities, and evaluates the discipline of knowledge. These opinions are supported by Wouters and Van Oostendorp (2013), defining digital games for education as a tool on a game approach aimed at supporting, enhancing teaching, learning, delivering, evaluation, and assessment. Prensky (2007) expressed DGBL as computer education and gaming content integration. As opposed to the traditional methods, DGBL has made it possible to combine computer and video games with different educational content to obtain better results. Digital games which require a deeper level of thought are also found to involve mental development. Besides, it provides students with fun learning without compromising the importance of learning concepts.

The significance of integrating computer games as an integral part of the students' careers and lifelong learning skills can be seen through the recent trend in the professional industry. Bughin et al. (2018) recommended ensuring that potential employees are highly trained in new technologies, while also developing interdisciplinary skills to improve critical thinking. In the future, the greatest challenge for people will be to use such a wide variety of knowledge and expertise in looking for new solutions manipulated by emerging technologies (Islam, 2017). The Paradigm of Education 4.0 empowers students to establish their learning style and speed. According to Bartolomé et al. (2018), personalisation and versatility are essential characteristics of Education 4.0. Adaptive learning systems play a crucial role in the Education 4.0 model (Cope & Kalantzis, 2010). Technology is used in the adaptive learning model to speed up learning according to each student's different needs. Besides, Murray and Pérez (2015) found that adaptive systems benefit other facets of the educational process, such as motivation and interaction with the students. Games are now part of a professional training programme in specialised careers such as engineering, military, and medical. Before this, students engaged in games just for leisure and entertainment (Prensky, 2007). For example, soldiers undergoing combat training will now be equipped with a realistic 3D video game; simulation aircraft pilots who have long utilised computer simulations during their preparation; and medical doctors can now perform surgical operations using computer game models and improve electronic medical devices.

As Gunter et al. (2008), an educational game's effectiveness is generally dependent on improving learning to inspire social connections rather than the force of knowledge acquisition. These conditions suggest that, while most people trust DGBL's potential to improve learning motivation, its ability to improve knowledge acquisition effectiveness is questionable. As a result, it is critical to investigate the riddle of DGBL learning effectiveness. A practical way is to understand the factors influencing learners' knowledge acquisition effectiveness in DGBL. According to Mitchell and Savill-Smith (2004), students' distraction generated by game play is a critical component affecting their learning efficacy in DGBL. Nevertheless, this research issue has yet to be studied (Keskitalo et al., 2016).

These show that digital games can become a medium for professional skills training. Thus, incorporating computer games in school education can introduce and familiarise students with their later professional lives.

The combination of computer games in the education system is a strenuous effort of developed countries like the United Kingdom and the United States of America (USA). In an effort to implement computer games in the classroom, sometimes, a specific DGBL curriculum is built. This transformation of the education system was recently achieved kudos to extensive research and development efforts by educational researchers, educators, and developers of educational games.

Although many studies on DGBL have been conducted, very few studies focus on collaborative learning in DGBL being a more practical approach. Therefore, this article will perform a thematic analysis to synthesise literature from 2016 to 2021 on CGBL systematic Thematic Review (TR) to explore factors that contribute to the effectiveness of CGBL in teaching and learning discussed in the publications through the following research question:

RQ: What factors contribute to Collaborative Game-based Learning (CGBL) effectiveness in literature from 2016 to 2021?

The paper ends with some final considerations and future needs. The main contribution of this paper is to indicate the factors that can be considered a guideline for teachers to understand better why they need alternative approaches to apply Collaborative Game-based Learning in teaching and learning in the Covid-19 pandemic era. It is also a reference and guide to the Ministry of Education Malaysia to make this method one of the alternative learning environments that is fun and very effective to students regardless of formal and informal learning.

2. Materials and Methodology

Thematic Review using ATLAS.ti 8 as the tool introduced by Zairul (2020), was implemented because the method of this study applied the thematic analysis procedure in a literature review. Thematic analysis is used to identify pattern and construct themes over thorough reading on the subject (Clarke & Braun, 2013). The following step is to identify the pattern and construct categories to understand the factors that contribute to the effectiveness of CGBL in the education system. This paper's creeds are to analyse and evaluate the results in order to make recommendations for future research. The selection of literature was performed according to several selection criteria: 1) publication from 2016 to 2021; 2) has at least keyword(s) relative to the topic; and 3) focuses on Collaborative Digital Game-based Learning.

Table 1. Search strings from Scopus, Lens.org and Mendeley

Scopus	TITLE-ABS-KEY ("collaborative" AND ("digital game based learning" OR "game-based learning" OR ddbl OR gbl) AND ("effectiveness" OR "success*"))	80 results
	TITLE-ABS-KEY (("Collaborative Game-based Learning" OR cgbl OR (("digital game based learning" OR ddbl) AND (collaborative))) AND (effective* OR success*) AND (factor* OR element* OR component*))	10 results
Mendeley	title:collaborative AND ("digital game based learning" OR "game based learning" OR DGBL OR GBL OR CGBL) AND ("effectiveness" OR "success*")	35 results
	title:collaborative AND ("digital game based learning" OR "game based learning" OR DGBL OR GBL) AND ("effectiveness" OR "success*") NOT proceeding NOT conference NOT reports AND year:[2016 TO 2021]	6 results
Lens	Scholarly Works (101) = ("Collaborative Game-based Learning" OR cgbl OR (("digital game based learning" OR ddbl) AND (collaborative))) AND (effective* OR success*) AND (factor* OR element* OR component*)	101 results
	Scholarly Works (24) = ("Collaborative Game-based Learning" OR cgbl OR (("digital game based learning" OR ddbl) AND (collaborative))) AND (effective* OR success*) AND (factor* OR element* OR component*)	24 results
Filters: Year Published = (2016 – 2021)		

A comprehensive review of research articles was conducted in the first step to determine the existing status of academic insight regarding collaboration in the DGBL. If accessible, the published articles were extracted from the Scopus database using the keyword TITLE-ABS-KEY ("collaborative" AND ("digital game-based learning" OR "game-based learning" OR ddbl OR gbl) AND ("effectiveness" OR "success*")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2016) AND (LIMIT-TO (LANGUAGE , "English"))). The Mendeley database was also used to extract Elsevier publications using the keyword title: collaborative AND ("digital game-based learning" OR "game-based learning" OR DGBL OR GBL) AND ("effectiveness" OR "success*") NOT

proceeding NOT conference NOT reports AND year: [2016 TO 2021]. In addition, searches on Lens.Org were done by using this search string: Scholarly Works (24) = ("Collaborative Game-based Learning" OR cgbl OR (("digital game-based learning" OR dgbl) AND (collaborative))) AND (effective* OR success*) AND (factor* OR element* OR component*) Filters: Year Published = (2016 – 2021).

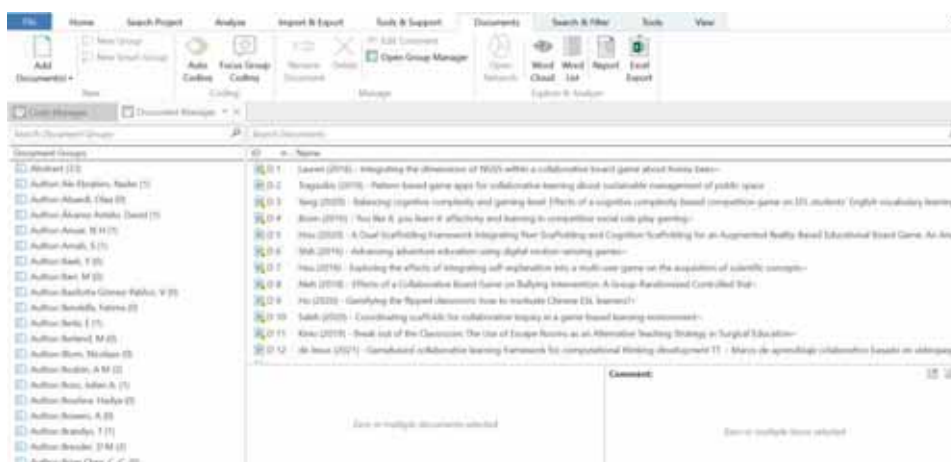


Figure 1. Documents extracted from Mendeley database

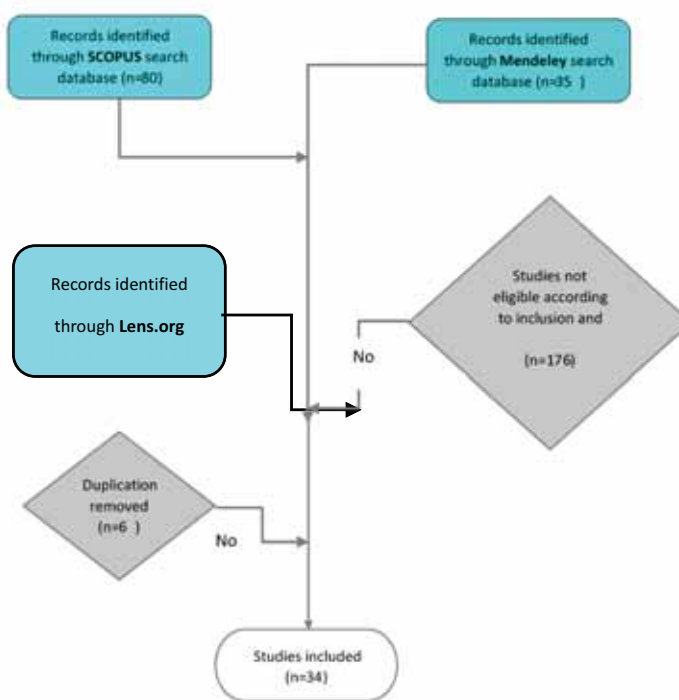


Figure 2. Inclusion and exclusion criteria

These search findings resulted in about 216 publications considering the results from three databases (Table 1). This review was limited to peer-reviewed journals and theses, and after some duplications were found, 176 publications were removed. As a next step, articles have been considered for review that was published during the last five years (2016 until 2021 inclusively). Articles have been regarded as irrelevant if the association with DGBL in education, i.e. an DGBL perceived as medical or computer science, has been removed. Due to the major share of articles focusing on DGBL in the collaboration setting. Next, all 40 metadata were transferred to ATLAS.ti 8 and created as primary documents. After the final screening on each document, three articles were irrelevant to education and were removed from the list. Following the filtering process, another 6 of the 40 articles were removed due to their premature results, duplicates, and anecdotes. Moreover, they did not discuss issues in education. The articles were uploaded in the ATLAS.ti 8 as primary documents, and then each paper was grouped as follows: 1) author; 2) issue number; 3) periodical; 4) publisher; 5) volume; and 6) year of

publication (Figure 1). The articles were analysed according to the year of publication and the discussion pattern. Therefore, the final number of papers to be reviewed was 34 papers (see Figure 2). Word cloud was generated from the 34 articles reviewed (Figure 3). Several categories in the code group were started automatically based on information given in Mendeley. (Figure 4). The classification in ATLAS.ti 8 made the sorting much more manageable and systematic. In the first round of coding, 95 initial codes were produced. Later, the codes were grouped into categories and several themes. In answering the research question on “What factors contribute to Collaborative Game-based Learning (CGBL) effectiveness in literature from 2016 to 2021?”, this contributed to the final three themes. The findings of this review are divided into quantitative and qualitative findings.



Figure 3. Word cloud generated from 34 articles

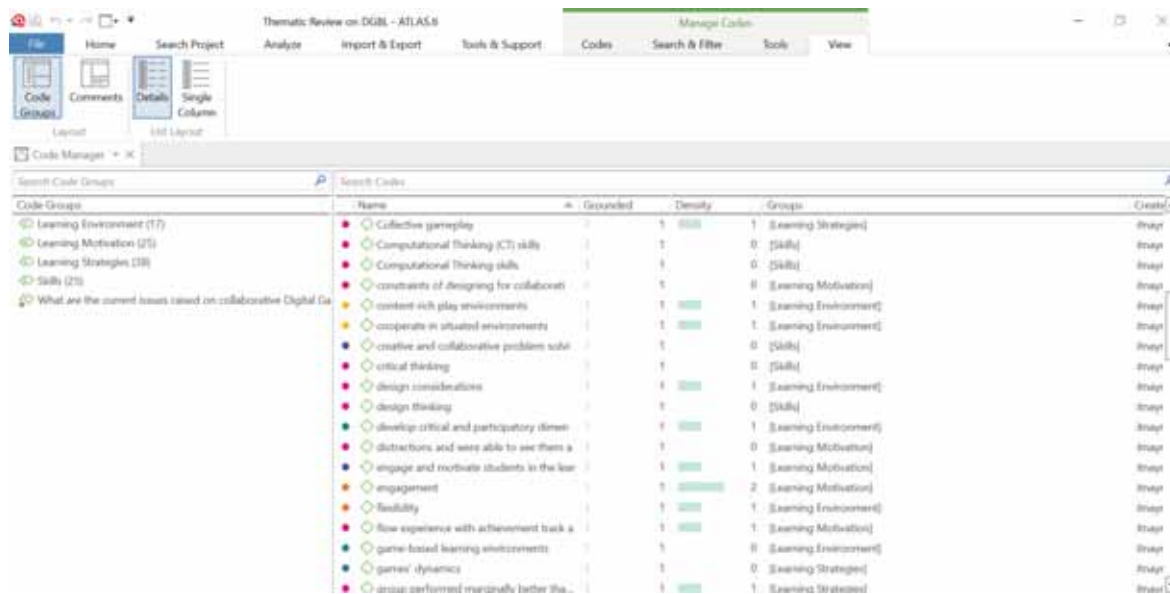


Figure 4. The code group established from Mendeley metadata

3. Results and Discussions

The data are presented in two forms, quantitatively and qualitatively. The quantitative data will explain descriptively about the data obtained and include more on numbers. In contrast, the qualitative data will display the themes that appear from the analysis results in each article. At the end of this section, some of the highlights will be discussed to suggest for the subsequent study.

3.1 Quantitative Data

Database queries were static and the use of the phrase “DGBL” OR “Digital Game-based Learning” was scarce in only research articles to identify the factors. Though the paper was meant for social studies, the journals recorded that the articles were published in various fields. DGBL was afterwards carried out by a critical review of the findings in light of the significant associated pedagogies exercised as alternative learning. Table 2 and Figure 5 below show that the trend of publishing increased from year to year. In 2017, few publications

highlighted the idea of CGBL in their papers. However, when this article was written, 2017 and 2018 recorded only nine publications, which was probably due to some articles that were still in progress, or the pattern of this topic was not popular. In 2019 and 2020, there was a sudden increase in the number of articles on this topic, perhaps because the pandemic that hit the world had opened reviewers' eyes to research other methods of applying teaching and learning at home. This article noticed that most journals involved were from other irrelevant branches of social sciences, such as business and psychology.

Table 2. Paper breakdown according to the authors and years

Author(s)	2016	2017	2018	2019	2020	2021
Lauren, Lutz, Wallon, and Hug	/					
Tragazikis and Gouscos,			/			
Yang, Chang, Hwang, and Zou					/	
Brom, Šisler, Slussareff, Selmbacherová, and Hlávka	/					
Hou and Keng					/	
Shih and Hsu	/					
Hsu, Tsai, and Wang	/					
Nieh and Wu			/			
Ho					/	
A Saleh et al.					/	
Kinio, Dufresne, Brandys, and Jetty				/		
de Jesus and Silveira						/
Hoyos, Sigüenza, Capellán-Pérez, Campos, and Álvarez-Antelo				/		
Chu, Wang, and Wang				/		
Çelik					/	
Cheng, Wang, Cheng, and Chen				/		
Martin and Martinez	/					
Romero et al.				/		
Bressler, Bodzin, and Tutwiler				/		
Li			/			
Magno De Jesus and Frango Silveira					/	
B. Davis, Tu, Georgen, Danish, and Enyedy				/		
Anuar, Mohamad, and Minoi					/	
K. Davis, Boss, and Meas			/			
Asmalina Saleh et al.				/		
Bressler, Bodzin, Eagan, and Tabatabai				/		
Czerwinski, Milosz, Karczmarczyk, Kutera, and Najda			/			
Sousa and Costa			/			
Hussein, Ow, Cheong, Thong, and Ale Ebrahim				/		
Mystakidis and Berki			/			
Turchi, Fogli, and Malizia				/		
Ting, Lam, and Shroff				/		
Hung, Lin, Huang, Yu, and Sun		/				
Emblen-Perry			/			

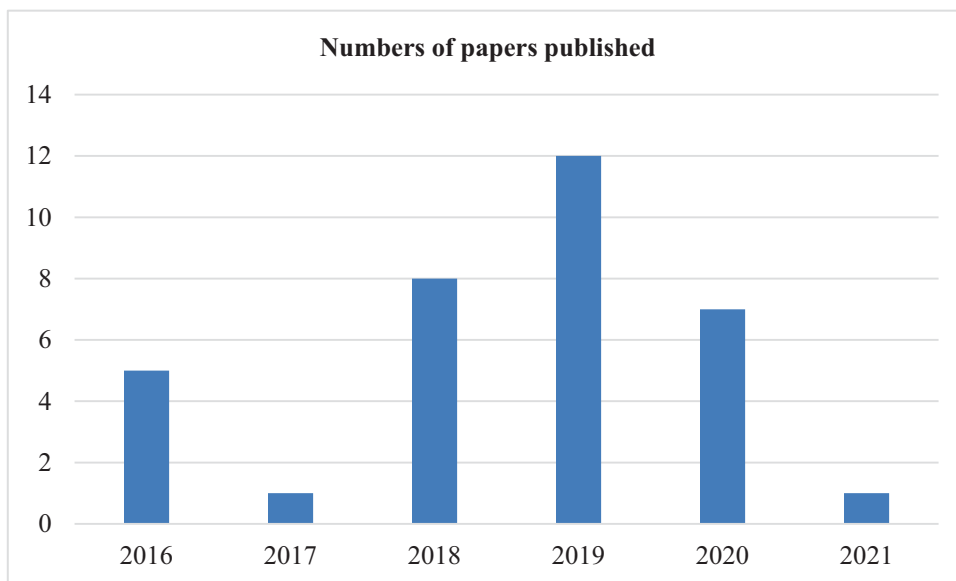


Figure 5. Numbers of the paper published from 2016 to 2021

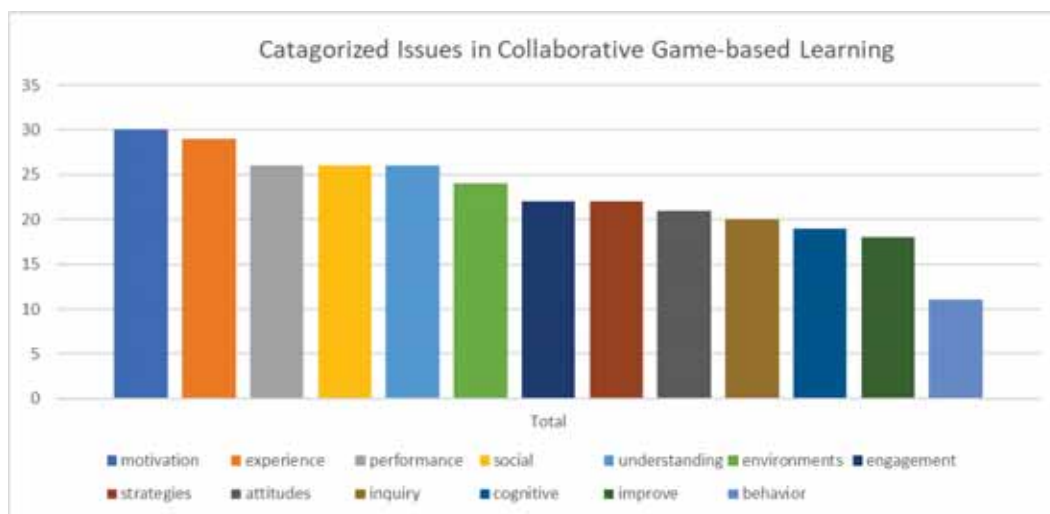


Figure 6. Initial Categorized of issues discussed in the literature

Three main themes are resulting from quotation, and categories scrutiny and scrutiny produced. The themes in examining the effectiveness factors in CGBL are Learning Environment, Learning Motivation, and Learning Strategies. Table 3 shows the breakdown of the publication paper according to the theme produced.

Table 3. Paper breakdown according to the themes generated

Articles	Learning Environment	Learning Motivation	Learning Strategies
(Lauren, Lutz, Wallon, and Hug, 2016)	/	-	-
(Tragazikis and Gouscos, 2018)	/	-	-
(Ahmad, 2017)	-	/	-
(Brom et al., 2016)	-	-	/
(Hou and Keng, 2020)	-	/	/
(Shih and Hsu, 2016)	/	/	/
(Hsu et al., 2016)	-	/	/
(Nieh and Wu, 2018)	-	/	-
(Ho, 2020)	-	/	/

(A Saleh et al., 2020)	-	-	/
(Kinio et al., 2019)	-	-	/
(de Jesus and Silveira, 2021)	-	-	/
(Hoyos et al., 2019)	-	/	-
(Chu et al., 2019)	-	-	/
(Çelik, 2020)	-	-	/
(Cheng et al., 2019)	/	/	/
(Martin and Martinez, 2016)	/	/	/
(Romero et al., 2019)	-	/	/
(Bressler, Bodzin, and Tutwiler, 2019)	-	/	/
(Li, 2018)	/	-	/
(Magno De Jesus and Frango Silveira, 2020)	/	-	/
(B. Davis et al., 2019)	/	-	/
(Anuar et al., 2020)	-	/	/
(K. Davis et al., 2018)	/	/	/
(Asmalina Saleh et al., 2019)	/	/	/
(Bressler, Bodzin, Eagan, et al., 2019)	-	/	/
(Czerwinski et al., 2018)	/	-	/
(Sousa & Costa, 2018)	/	/	/
(Hussein et al., 2019)	/	/	/
(Mystakidis and Berki, 2018)	/	-	/
(Turchi et al., 2019)	-	/	-
(Ting et al., 2019)	/	/	/
(Hung et al., 2017)	-	/	-
(Emblen-Perry, 2018)	-	/	-

Factors contribute to Collaborative Game-based Learning (CGBL) effectiveness in literature from 2016 to 2021

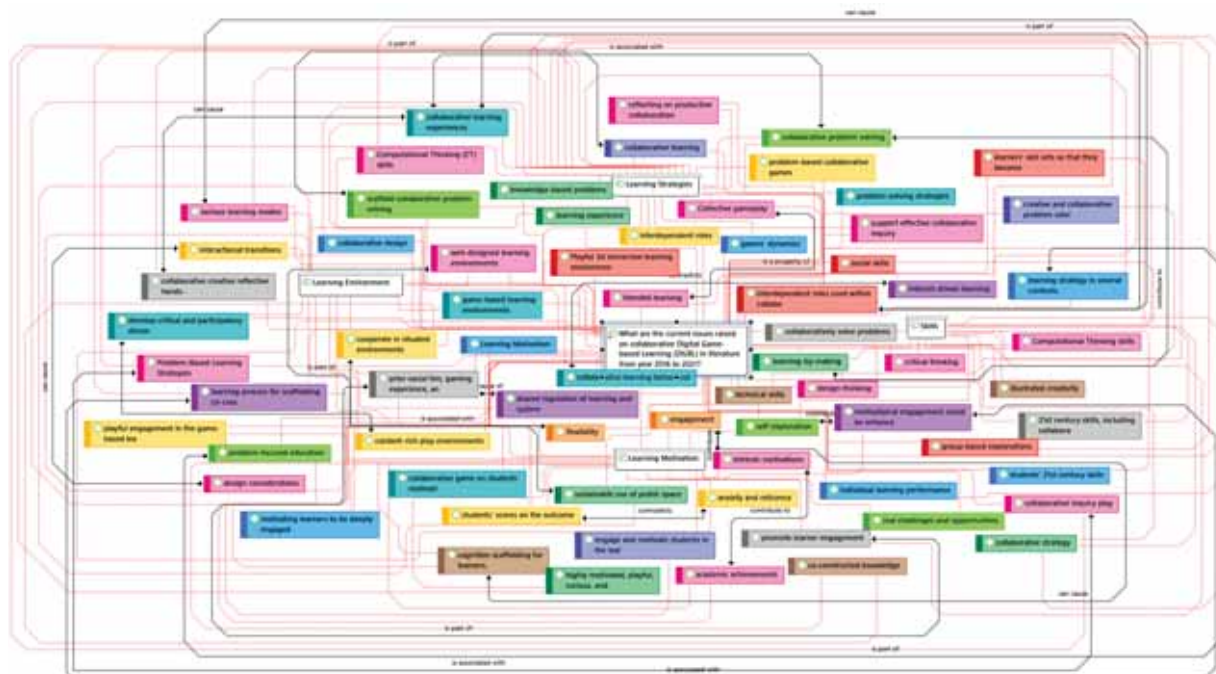


Figure 7. Overall network and how the themes answering the research questions

All the category scrutiny was conducted and there were three main themes that were derived from the research

question. Figure 6 illustrates the overall network that answers the question of the study, “What factors contribute to CGBL effectiveness in literature from 2016 to 2021?”

3.2 Qualitative Data

In this section, the qualitative results are discussed through the themes generated from the research question. Figure 8 is a concept map of the entire findings that refers to each resulting theme and sub-theme. There are three themes derived from the qualitative analysis of this study, namely learning environment, learning motivation, and learning strategies. The relevance of each of these themes is shown in the description in the following sub-section.

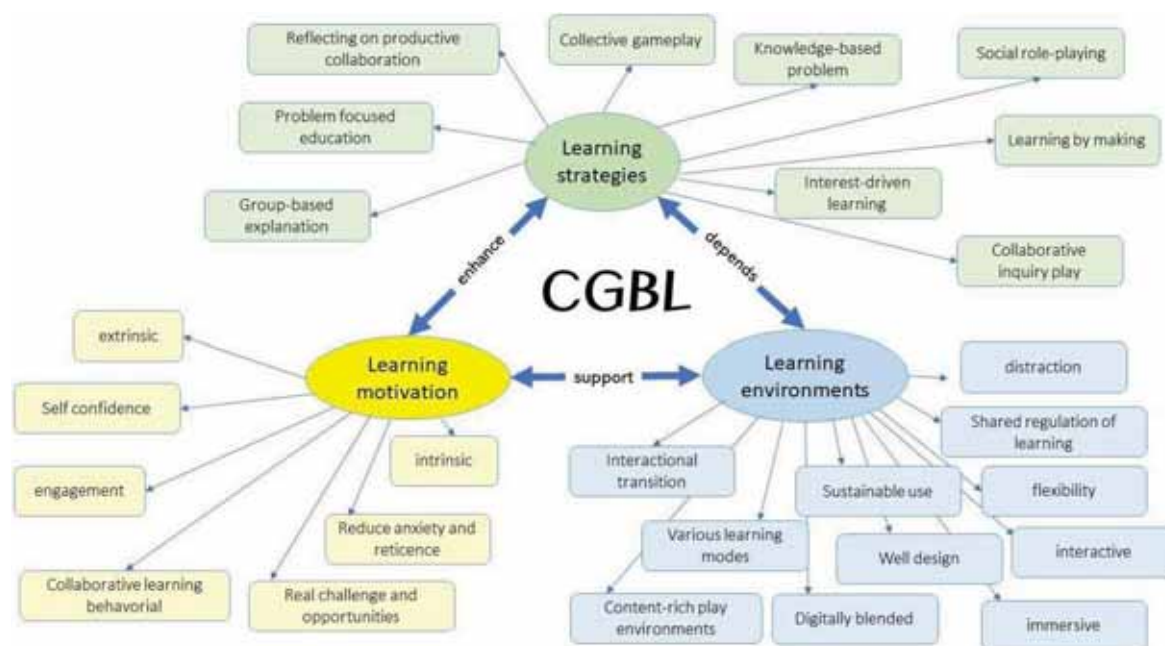


Figure 8. Themes and sub-themes for CGBL factors of effectiveness

3.2.1 Learning Environment

The diverse physical locations, contexts, and cultures in which students learn are referred to as the learning environment. Since students can learn in many settings, including natural settings and outside-of-school settings, the terminology is frequently used as a more realistic or preferred alternative to the classroom, which connotes a room with rows of desks and a chalkboard, for example. A school or class’s culture is also included in this definition. Its guiding ethos and qualities include how people interact with and treat one another and how teachers structure a classroom to support learning.

This concept helps students to learn in many situations. Since students need to learn, the goal is to build a complete learning environment that optimises students’ ability to learn. Unquestionably, there is no one optimal setting for learning. There are countless learning environments, which makes teaching so fascinating rather than a fixed learning environment. Formal learning occurs in the classroom and is organised for students to learn to fulfil course requirements. Informal learning can happen through reading and self-education, activities, interaction, or common activities (Cross, 2007; Selwyn, 2007). Attwell (2007), stated that in the workplace, studying colleagues, informal learning by asking questions, and other uncoordinated and autonomous learning practises accounted for 80% of an individual’s awareness of their task. However, in terms of educational technology, slight attention has been paid to informal learning. Surprisingly, formal learning technology and applications have only been made available to those enrolled on an educational programme or those working for larger enterprises. Likewise, Hall (2009) suggested that formal and informal learning should be related to boosting learning and that when the learner participates in formal and informal learning activities, learning is most effective.

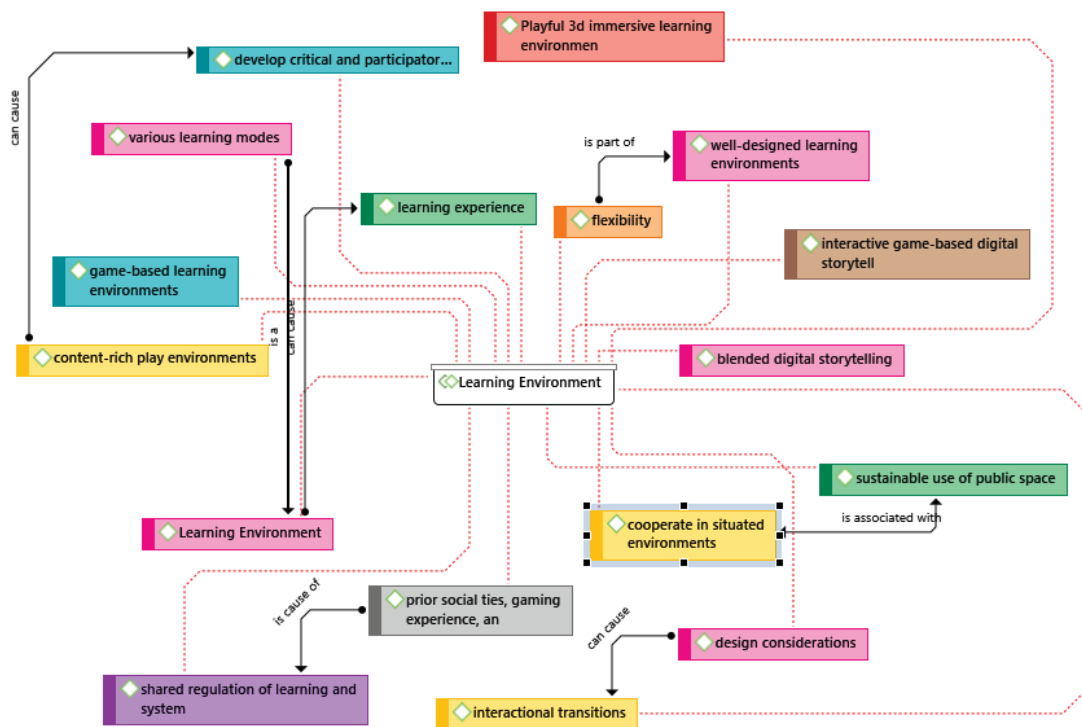


Figure 9. Learning Environment

Lauren et al. (2016) asserted that in carrying out DGBL, environmental activity is flexible to be a factor that contributes to the feasibility of learning activities. Meanwhile according to Cheng et al. (2019), the implementation of DGBL should emphasise the sustainable environment and be used anywhere. In contrast to these opinions (Shih & Hsu, 2016), students should be co-competitive in a comfortable environment. Martin and Martinez (2016) indicated that in implementing games in the classroom and practice in the library, it was necessary to consider well-designed learning environments. Design consideration in activism and teacher instructional game building implementation are crucial (Li, 2018) as a theory adoption and design consideration investigation. Since teachers aim to make learning as effective as possible, they also aim to create an environment for learning that optimises the ability of students to learn. Learning environments have both a direct and indirect influence, or respectively positive and negative influence on learning. Therefore, teachers need to carefully choose or design it such as content-rich play environments (Saleh et al., 2019).

However, the pedagogical discussion is limited to only individual strategies in DGBL. Further research can be carried out to determine the effectiveness of DGBL in collaborative learning according to the different learning environments, i.e. formally and informally, which are appropriate with the current pandemic conditions that have forced students and teachers to carry out learning activities from home.

3.2.2 Learning Motivation

Due to the rapid advancement of computer and multimedia technologies (Hwang & Wu, 2012), various issues of education computer games have been discussed extensively in recent years. Educational computer games, according to researchers, could be an effective technique to provide a more engaging learning environment for obtaining knowledge (Cagiltay, 2007; Papastergiou, 2009; Gunter et al., 2008a). Several studies have found that instructional computer games can improve students' motivation and interest in learning (Burguillo, 2010; Dickey, 2011; Ebner & Holzinger, 2007; Harris & Reid, 2005; Liu & Chu, 2010). Hwang, Sung, Hung, Yang, and Huang (2012) have suggested that well-designed instructional computer games may have a significant impact on students' learning outcomes.

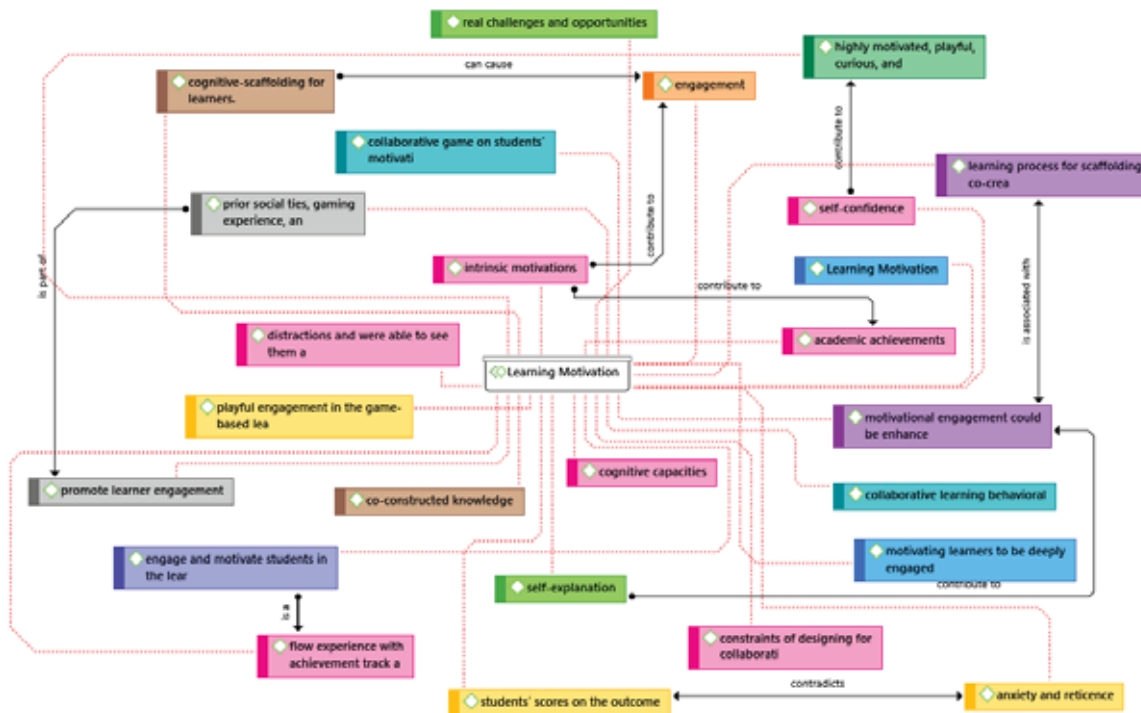


Figure 10. Learning Motivation

Although computer educational games appear to be a viable strategy, researchers have warned that DGBL techniques could have negative consequences if they are not properly designed, such as poor learning results and an increase in players' self-alienating behaviours (Hong et al., 2009; Sung et al., 2012; Provenzo, 1992). One of the most difficult aspects of producing educational computer games, according to Kickmeier-Rust and Albert (2010) is offering help and guidance to learners while balancing learning and gaming while also challenging individual learners' capacities. Charsky and Ressler (2011) used a computer game to conduct a learning activity, which further validated this conclusion. Students' collaborative efforts resulted in a higher level of achievement for all (Chen et al., 2020). Students develop a supportive community by assisting one another, which improves each member's performance. Students' motivation is increased when they have more control over their learning experiences through collaborative learning and play. Control, as previously established, is a powerful motivation. Cooperative learning emphasises students' active participation in the learning process (Yien et al., 2011). Collaborative learning in DGBL gives groups possession of their learning instead of passively accepting information from outside experts. Student empowerment created by the collaborative learning method leads to a positive attitude and increased motivation. It has been shown to develop positive student-teacher attitudes (Ho, 2020).

Besides, lines of communication are opened (Çelik, 2020b; Hung et al., 2017; Jesus et al., 2021; Asmalina Saleh et al., 2019b; Wang, 2020). Students are actively encouraged to explain their actions and thoughts to other students and their teachers. Their involvement increases and learning becomes more personal (Agatha & Muhamad, 2016; Raman, 2015). In addition, according to van Putten et al., (2020), students had more focus when the content was being taught (learners engaged with teachers, asked questions, no evidence of distraction). They were motivated to start with the game-based assignments. Moreover, they had good engagement with peers (providing tips, collaboration, sharing understanding, asking questions, commitment in solving game problems). It is the part of students' enjoyment of working collaboratively (motivated to work with teammates, passion when the teacher introduced group work, revitalizing conversations).

Consequently, students are inclined to complete the game-based activity (active engagement with the game-based worksheet, engagement until the puzzle is solved). Students learn from peers (team members provide tips or reasons for answers, curiosity, and questions). As asserted by Chen et al. (2020), Cheng et al. (2019), and van Putten et al. (2020), although the group or team seemed to rely on each other for support during the learning process, they also tried to complete the work on their own. Based on the observation notes, the

requires all elements of education to be immediately adapted to existing conditions. Although learning is carried out online, it must still follow the educational standards. The choice of learning model should consider the students' needs and include fun learning. A solution that can be applied to online learning during the pandemic is to implement DGBL. The implementation of DGBL can be carried out in CGBL. CGBL can foster learning motivation and student activity to be involved in learning. Besides, the application of game-based learning is able to improve student learning outcomes and creativity.

Based on the themes that were formed from the qualitative findings, three main factors contributed to the effectiveness of CGBL. The learning environment is a critical element in learning, with no exception in the digital environment. However, how can CGBL be included in the virtual learning environment of the current situation? The physical distance imposed by Covid-19 has influenced digital learning (Al-Emran, 2020). DGBL allows educators to customise their teaching tactics and enables students to self-regulate their learning without regard to time or place. Teachers must also devote time to studying how to use technological tools and comprehending how to improve their students' educational experiences. Every classroom is different and full of students with varying degrees of abilities. While this provides an enriching learning environment, it also presents challenges for teachers. Through DGBL, teachers use data to better understand students' needs to adjust tactics and personalise a student's learning experience. In addition, by providing students with CGBL, there is no back row—every student can see the lesson, which presents increased engagement, motivation, and learning. When students are involved in their education, they can be more engaged with the content, delivery, and understanding. Through DGBL, students make their avatars and earn and lose points based on behaviour, engagement, collaboration, and productivity. The interaction not only makes it more fun but also encourages students to uphold classroom values. Although this illustrates the positive effects of game-based learning, there would be great value in seeing how in-game behaviour translates to real-life behaviour in the long term. Although measuring the long-term impact is still on the wish list, researchers can gather quantitative data to evaluate the effects of CGBL.

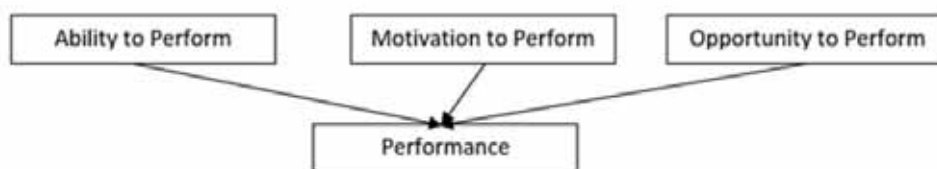


Figure 12. Ability, Motivation, Opportunity (AMO) model

Figure 12 is the AMO model adapted by (Ashford et al., 2014) derived from the AMO theory introduced by (Appelbaum et al., 2000). The results of this review are also in line with the ability, motivation and opportunity AMO model adapted from (Ashford et al., 2014) suggesting that three distinct work system components influence employee attributes and contribute to the company's success. According to the notion, a system that considers employees' skills, motivation, and opportunity best serves the organisation's objectives. When implemented in education, it is in line with how the learning environment, learning motivation, and learning strategies can contribute to performance to ensure the effectiveness of DGBL in applying CGBL in teaching and learning.

According to Ashford (2014), motivation is one of the most critical factors influencing individual efficiency. On the other hand, the AMO model emphasises motivation supported by relevant skills and abilities and appealing job opportunities. This implies that while motivation significantly impacts student performance, it has a minor impact on student attainment. The ability to perform can be associated with a learning environment that explains how the learning environment in CGBL provides opportunities for students to conduct DGBL in various environments. It provides an opportunity for students to experience varied learning environments, especially in virtual learning situations. Students gain a sense of connection, engagement, and well-being by participating in the decision-making process in a group discussion (Appelbaum et al., 2000). This statement refers to learning strategies, and students in CGBL could use a variety of learning strategies.

When moving towards greater integration of online learning environments, several questions have been asked about how students' motivation and learning strategies might impact their achievement in these environments and their preferences. According to Palloff and Pratt (2003), online learning might not match students' ideal learning style. According to Clayton et al. (2010), students want engaging learning environments that promote direct interaction with their professor and fellow students, immediate feedback, spontaneity, and contacts with faculty and students. Considering these criteria, conciseness of students' motivation and learning strategies will

be possible form an effective learning environment for DGBL implementation.

This review paper highlights an approach as a guideline to educators, system developers, policymakers, academics, and stakeholders interested in integrating DGBL into the formal education system. The virtual collaborative strategy could eventually replace the traditional collaborative process. When applying DGBL in a collaborative learning environment, it is crucial to consider whether the games can support collaboration in a virtual learning environment. In addition, learning motivational factors are a significant factor in applying DGBL collaboratively. However, based on the analysis, it is still unclear how CGBL can improve student learning motivation in literature. In practically all aspects of CGBL, a shortage of studies discusses how CGBL can be carried out in the pandemic era. Therefore, this issue should be further delved into to understand how to use DGBL more effectively in the future.

5. Conclusion

Systematic Thematic Review synthesised literature from 2016 until 2021 on CGBL in the digital environment aspects related to CGBL effectiveness. However, there is a shortage of insight into what factors support DGBL's efficiency in a digital environment when applying CGBL in the education system. The results from the thematic review are the themes that exist as a result of the literature highlights. The themes that emerge are the learning environment, learning motivation, and learning strategies, which contribute to the effectiveness of CGBL. These themes are in line with the AMO model introduced by Ashford (2014). This paper provides insight into subsequent research as a guideline to educators, system developers, policymakers, academics, and stakeholders interested in considering the implementation of CGBL in Teaching and Learning at Home as one of the appropriate alternative materials and methods in the new standard on the factors reviewed. There are a few limitations to this study that should be considered when replicating it in the future. First, there is little knowledge of the best practice to integrate CGBL in different learning strategies and learning environments. While this study did not examine aspects of the game itself, future research is needed to explore the extent to which game characteristics concerning students' participation in DGBL are related to their learning outcomes. It would also be useful to conduct painstaking studies on the structure and presentational styles of CGBL and how they interrelate with other instructional contexts, as this would enable detailed study.

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A Counselor's Cultural Identity: Implications from A Multicultural Counseling Perspective in Malaysia

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Abstract

Malaysia is a country with a diversified cultural background, ethnicities, and religions. Islam is the most widely practiced religion, followed by Buddhism, Christianity, Hinduism, other traditional Chinese religions, as well as other indigenous religions. Despite the richness of the cultural landscape, the counseling services in Malaysia seem to be very limited in terms of diversification of multiculturalism. Cultural relevance of counselling theories, adaptation of Western-trained counseling services to suit a Malaysian culture, and multicultural counseling competencies, are among the concerns in the profession. This paper focuses on factors that shape a counselor's identity based on their cultural background, and its implications on multicultural counseling in Malaysia. Among the important factors highlighted in this paper are religious beliefs and values, locus of control, gender, and personality. This paper encapsulates the importance of understanding a counselor's cultural identity for the effectiveness of multicultural counseling in Malaysia.

Keywords: Multicultural, counseling, culture identity, multicultural counseling competency, multi-religious country, Malaysia, gender, personality.

1. Introduction

Malaysia is a country with a diversified cultural landscape, particularly in terms of ethnicity and religion. According to the most recent demographic data (Department of Statistics Malaysia, 2021), the Malaysian population is divided into three major races: Bumiputera (69.7%), Chinese (22.5%), Indian (6.8%), and other ethnic minorities. As Malaysia is a secular state, its residents are allowed to practice their religion freely. Of all the religions in Malaysia, Islam is the most widely practiced religion (61.3%), followed by Buddhism (19.8%), Christianity (9.2%), Hinduism (6.3%), traditional Chinese religions (1.3%), and indigenous religions (0.4%), which are based on the 2020 Population and Housing Census of Malaysia (Department of Statistic Malaysia, 2011).

In contrast to the richness of the cultural landscape presented, the counseling services in Malaysia seem to only represent a low level of cultural and social integration (See & Ng, 2010). Researchers have pointed out that the contemporary status of multicultural counseling in Malaysia remains unclear, due to the lack of studies in this field (Voon & Jaladin, 2017). Besides, Rafidah Aga Mohd Jaladin et al. (2020) have listed a few serious concerns about (a) cultural relevance of counselling theories applied by Malaysian counsellors, (b) the extent of adjustment or modification, made by Western-trained counsellors based on Malaysian's culture, and (c) the status of multicultural counseling practices among professional counsellors. Therefore, it is suggested that there is an imminent need for Malaysian professional counsellors to improve their multicultural counseling competencies. In addition, for the efficacy of counseling to maintain relevance to the intended population, cultural norms must be considered (Khoshbooi et al., 2021)

As the old mantra goes "know thyself", Derald Wing Sue & Sue (2016) stressed that mental health professionals who are culturally competent, are those who are actively learning about their own beliefs, biases, preconceptions about human behavior, preconceived notions, personal limitations, and so on. Therefore, it is imperative for counsellors to examine their own cultural identity. In some psychological literature, cultural identity has been simplified to a single component, such as racial identity, gender identity, and sexual identity. As a matter of fact,

cultural identity is multidimensional, and certain components of a client's cultural identity might influence his/her manner of presenting a problem (Ibrahim & Heuer, 2013). Likewise, a counsellor's interpretation or diagnosis in counseling might also be affected by some aspects of the counselor's own identity, if there is no awareness.

In this paper, the author will discuss the importance of a counsellor's self-awareness of his/her own cultural identity in terms of multicultural counseling. In particular, the discussion will focus on three aspects of identities, namely (1) religious beliefs or values; (2) worldview, i.e., locus of control and responsibilities; and (3) gender and personality.

2. Religious Beliefs and Values

Before diving into the discussion on the counsellor's cultural identity of religious beliefs and values, it is important to be aligned on the definition of spirituality and religion. Although spirituality and religion are often used interchangeably, these terms carry different meanings. Spirituality refers to a state of being attuned with God, or the Divine Intelligence that governs or harmonizes the universe (Richards & Bergin as cited in Cornish et al., 2010). On the other hand, religion is often defined as an organized system of faith, worship, cumulative traditions, and prescribed rituals (Worthington as cited in Cornish et al., 2010). In other words, spirituality is more of an individual practice that involves a sense of peace and purpose, while religion is a specific set of organized beliefs and practices. Examples of popular religions in the world are Islam, Christianity, Hinduism, Buddhism, and Judaism.

As mentioned in the first section, Malaysia is a multiracial and multireligious nation, where most of its people have a religious belief (98.3%). Not only that, researches have also supported the notion that religion is beneficial to one's mental health, of which, around 80% of religion and health research works have studied mental health, and most of them found a link between religion, and a reduced risk of mental illnesses and disorders (as cited in Tan et al., 2020). Therefore, it is crucial for mental health professionals to acquire the spiritual/religious (S/R) competence to provide better mental health services in diverse societies. The Association of Spiritual, Ethical and Religious Values in Counseling (ASERVIC) (2009) have identified 14 areas on competent practice, organized around six categories: (1) cultural and worldview; (2) counselor self-awareness; (3) human and spiritual development; (4) communication; (5) assessment; and (6) diagnosis and treatment (As cited in Cashwell & Young, 2011). The details of the six categories of S/R competent practice can be seen in Diagram 1. Cashwell & Young (2011) highlighted that self-awareness competencies should come before the clinical application of such competencies. This is to say, the counselor's self-awareness is required for a culturally competent practice, and that counsellors are unlikely to respond to their client's spiritual/religious (S/R) concerns well enough without self-awareness. In this section, the barriers for such competencies in S/R counseling will be examined. The knowledge, skills, values, and attitudes required for the competency in S/R issues will be discussed, followed by some guidelines or advice for counsellors on multiple S/R issues.

For a variety of reasons, mental health practitioners may find it challenging to integrate S/R factors, or to address S/R issues during the counseling sessions. To begin with, many mental health practitioners believe they are unprepared to deal with S/R concerns in counseling (as cited in Cornish et al., 2010). This phenomenon is consistent with barriers in multicultural counseling faced by Malaysia's counsellors. According to Rafidah Aga Mohd Jaladin (2013), it has been reported that (a) participant counsellors perceived themselves as less multiculturally competent, particularly when it involves different religions; and (b) many participants find issues such as lesbian lifestyle, premarital sex, or extramarital sex, as culturally sensitive and challenging. Secondly, it was found that even mental health practitioners who believe it is critical to address S/R concerns in psychotherapy, engaged in these practices less frequently, than one might assume (Frazier & Hansen, 2009). A Psychotherapist's resistance in discussing S/R topics may also come up because they have not personally investigated it. Moreover, a psychotherapist may not view S/R issues as a significant factor in their client's lives, since most of them have not indicated that religion is an important factor in their lives (as cited in Cornish et al., 2010). Counsellors who hold different religious belief with their clients may find it challenging to agree on a particular S/R viewpoint, or they may avoid discussing religious and spiritual identities out of the desire to respect the individual's belief system, or avoid it out of fear of being influenced by the client's beliefs. From an anecdote of a Malaysian Experience of Triad Training Model (Hassan & Peh, 2014), a Malaysian Buddhist counselor trainee had reported difficulty to display empathy towards his Christian client, due to his lack of the Bible's knowledge. Also, the therapeutic process of counseling had been impeded due to the trainee's fear of being converted into a Christian by the client.

Culture and Worldview
<ul style="list-style-type: none"> • Describe the similarities and differences between spirituality and religion, including the basic beliefs of various spiritual systems, major world religions, agnosticism, and atheism. • Recognize that the client's beliefs (or absence of beliefs) about S/R are central to his or her worldview and can influence psychosocial functioning.
Counselor Self-Awareness
<ul style="list-style-type: none"> • Explore his or her attitudes, beliefs, and values about spirituality and/or religion. • Evaluate the influence of his or her own S/R beliefs and values on the client and the counseling process. • Identify the limits of his or her understanding of the client's S/R perspective and have knowledge of religious and spiritual resources for consultation and referral.
Human and Spiritual Development
<ul style="list-style-type: none"> • Describe and apply various models of S/R development and their relationship to human development.
Communication
<ul style="list-style-type: none"> • Respond to client communications about S/R with acceptance and sensitivity. • Use S/R concepts that are consistent with the client's S/R perspectives and that are acceptable to the client. • Recognize S/R themes in client communication and address these with the client when therapeutically relevant.
Assessment
<ul style="list-style-type: none"> • Gather information about the client's S/R perspective from the client and/or other sources during intake and assessment.
Diagnosis and Treatment
<ul style="list-style-type: none"> • When making a diagnosis, recognize that the client's S/R perspectives can a) enhance well-being, b) contribute to client problems; and/or c) exacerbate symptoms. • Set goals with the client consistent with the client's S/R perspectives. • Be able to a) modify therapeutic techniques to include a client's S/R perspectives, and b) utilize S/R practices as techniques when appropriate and acceptable to a client's viewpoint. • Therapeutically apply theory and current research supporting the inclusion of a client's S/R perspectives and practices.

Figure 1. Religious and Spiritual Competencies for Counselors (Source: Cornish et al., 2010)

In essence, these barriers and challenges can be reduced if mental health professionals increase their cultural competencies from across three major domains: (1) knowledge; (2) skills; and (3) values and attitudes. To be a S/R competent counselor, one should acquire knowledge of major Western and Eastern religious traditions, and understand the normative components within these belief systems. One must also be familiar with the S/R concepts (e.g., human nature, morality, etc.) and language (e.g., sin, reincarnation, karma, zakat, samsara, etc.) that are employed in these traditions. To foster a brief understanding on the four major religions in Malaysia, Table 1 displays a brief outline of the S/R concepts, and issues relevant in therapy for Islam, Buddhism, Hinduism, and Christianity. Apart from the major religions, counsellors should not overlook the significance of indigenous healing, or alternative therapies in different cultures, because a big number of the world population still depends on alternative and complementary therapies for health and healing. From a Malaysian context, many still believe in alternative therapies, such as treatment from Bomohs, Traditional Chinese Medicine (TCM), Ayurveda, and prayer healing. In fact, studies have shown that a high percentage of Pharmacy students used (57.8%), or had previously used at least one type of Complementary and Alternative Medicine (CAM, 77.6%) (Hassan et al., 2011). Therefore, counsellors must be mindful of the need to respect such cultural belief systems. For instance, if one believes that mental illness is caused by psychological factors, counselling or therapy may be recommended. However, if one believes that abnormal behaviour is caused by other forces (e.g., supernatural), the client may benefit from also consulting a spiritual leader or healer from the client's faith (Cornish et al., 2010; Lim et al., 2018). Even if the counselor and client share a common culture, religion, or spiritual traditions, they might have vastly different S/R beliefs, practices, and worldviews. For example, not all Buddhists are vegetarians, and the consumption of meat is not condemned in Buddha's teachings. For this reason, counselors must make careful cultural assessments (e.g., level of religious orthodoxy, acculturation, intersection of cultural and family issues) before creating a culturally appropriate treatment plan.

Apart from gaining general knowledge about religions, counsellors must also examine what the religion means to them personally. Counsellors should be able to answer existential questions, such as "Who am I? Where did I come from? Where am I going? What does life mean? What is worth living for?" (Helminiak, as cited in

Cashwell & Young, 2011). Only when counsellors acknowledge the spiritual implications of issues such as relationships with God or higher powers, can they effectively explore such issues with their clients. Counselors should always do self-reflection, so as to identify their values and biases, because most of the time our values and biases operate unconsciously. If the counsellor has religious beliefs that are different from what the client has, the counsellor must be mindful of, and try all means to avoid value imposition toward the client. However, it does not mean that one should not be mindful when he/she shares similar beliefs with that of the client, because they might share the same blindspot. Such blindspots, if not identified, might reinforce a client's unhealthy cognitive or behaviour. To conclude, it is of paramount importance for counsellors to become aware of their S/R beliefs, biases, and attitudes. At the same time, counsellors should establish an open and accepting attitude towards the client's belief system, and work within the client's value framework. If there are countertransference reactions that are unresolvable, counsellors should consider referring their clients to other suitable mental health professionals.

Table 1. Major Religions in Malaysia

Beliefs	Islam	Buddhism	Hinduism	Christianity
View of Deity	One God, Allah, creator of all things in the universe. All powerful, all seeing, and all knowing. Each person is individually responsible to Allah.	Buddhists do not worship a God. Siddharta Gautama became the Buddha (“the Enlightened One” in Sanskrit). People pray to good and evil deities.	There is One Supreme God with many forms (male and female, such as Vishnu and Shiva). Dharma is the cosmic law that directs all processes in the universe.	Holy Trinity: Father, Son and Holy Spirit. God: All knowing, loving, Creator. Jesus is the messiah who died to atone for human sins and offer salvation.
Beliefs and Tenets of the Religion	People are inherently good. Humans have free will to choose good or evil. Belief in predestination: much is preordained by Allah. All are to follow the Five Pillars of Islam: profession of faith, ritual prayer five times/day with ritual cleansing, Ramadan fast, palmgiving, and pilgrimage to Mecca.	Each person creates his or her own happiness and is the product of his or her own actions. Karma is created by positive and negative actions that determine the next life, or incarnation. Belief in the “middle way” or “all things in moderation”, so asceticism is rejected. Follow the Eightfold Path.	Humans are divine and the only need to uncover their illusions. All things are holy because they come from a single sacred source and are one. The world is full of change, struggle and suffering. Belief in the Karma, the law of cause and effect. Strong tradition in asceticism.	Only God’s grace can free people from sin. Humans have free will and must choose good over evil. Christians are to follow the Ten Commandments and the teachings of the Gospels. God will provide for those who believe.
View of Life after Death	Good and bad deeds will be reviewed by Allah on Judgement Day and individuals are consigned to Paradise or to Hell.	Belief in reincarnation. Based upon accumulated Karma, assigned to a better new life or a worse one.	Belief in reincarnation. Based upon accumulated Karma, assigned to a better new life or a worse one.	Eternal life after death. After God’s judgement, will be consigned to Heaven or Hell. Christians focus on life after death as the ultimate goal.
Religious Practices	Prayer, meditation, and reading Holy writings. Restrictions: alcohol and products of swine and carrion. The Imam is the prayer leader in the mosque.	Meditation, prayer offerings, working with guru, daily worship, participating in festivals and rituals. Prayer at shrines, temples and family altars. Buddhists are vegetarians and do not kill any form of life.	Meditation, daily prayers, recital of mantras, chanting asceticism, pilgrimages, yoga practice, offerings (flowers, fruits, etc.) and worship of deities. Devout Hindus do not kill any form of life as it may be a reincarnated soul.	Living is a moral life, accepting Jesus and prayer brings one closer to God. Most denominations have two sacraments: baptism and communion. Others (e.g. Catholic) include reconciliation (“confession”), confirmation and marriage.
View of Marriage, Divorce, Roles in Family, Sexuality	Strongly interdependent, extended family structures, Collectivist. Premarital sex prohibited; birth control accepted. No abortion permitted after the fetus is at 120 days gestation (when the	Civil marriage, not religious. Divorce not prohibited. Premarital sex no explicitly banned but beliefs may vary by culture. As there is a strong prohibition against causing any type of harm	Marriage is a sacrament and a religious duty-alliance between families. Marriage arranged. Traditional hindu families are patriarchal. In India, selective abortion may	Fundamentalist Christians, Evangelicals and Catholics do not condone divorce, abortion or premarital sex and they believe that homosexual acts are sinful. They may also

soul enters the fetus). Divorce is undesirable. Homosexuality prohibited. Situational homosexual behaviour may have occurred due to separation of the sexes. Polygamy permitted conditionally for men but is less common in modern life.	or suffering, abortion is not accepted. Individuals make their own choices and accept the accompanying Karma. View on homosexuality is unclear. If divorce occurs, individuals should accept suffering, avoid anger and feel compassion for the partner.	be performed. Premarital sex not condoned. Caste system determines suitable marriage partners, social roles and type of work. Ancient Hindu texts refer to homosexuality as acceptable; in current culture, there is a negative attitude towards homosexuality.	have more traditional gender-role beliefs. Many liberal Protestant churches are more accepting of premarital sex, birth control, abortion, homosexuality and divorce.
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3. Locus of Control

In addition to a client’s social identities and religious beliefs, counselors should also recognize clients as individuals with their own unique experience of the world. This is where the concept of worldview comes in. Worldviews are significantly associated with a person’s cultural background and life experiences, and they impact how people interpret or perceive the world, and their relationship with the world (Koltko-Rivera, 2004). Although, worldview is identified by different names in literature (e.g., philosophy of life, vision of reality), worldview can be defined as follows:

“A worldview is a way of describing the universe and life within it, both in terms of what is and what ought to be. A given worldview is a set of beliefs that includes limiting statements and assumptions, regarding what exists and what does not (either in actuality, or in principle), what objects or experiences are good or bad, and what objectives, behaviors, and relationships are desirable or undesirable. A worldview defines what can be known or done in the world, and how it can be known or done. In addition to defining what goals can be sought in life, a worldview defines what goals should be pursued. Worldviews include assumptions that may be unproven, and even unprovable, but these assumptions are superordinate, in that they provide the epistemic and ontological foundations for other beliefs within a belief system.” (Adapted from Koltko-Rivera, 2000, p. 2, as cited in Koltko-Rivera, 2004).

In other words, the worldview is made up of our attitudes, values, ideas, and conceptions. Not only so, but they also influence how we think, define occurrences in life, decide things, and act. Furthermore, in Malaysian context worldview, authoritarian parenting, which is characterised by high control and rigid limit setting, was found to be connected with a higher internal locus of control in Malay adolescents, rather than being a potentiating factor for external locus of control. This data supports the theory that children's interpretations of parenting approaches are influenced by their cultural setting (Keshavarz & Baharudin, 2013).

It is undeniable that the worldview is a difficult concept. Nevertheless, frameworks like Kluckhohn and Strodtbeck's Value Orientation Model, Coan’s “Basic Assumptions” Model and/or Sue’s Fourfold Loci Model might help to clarify its key dimensions. For instance, Kluckhohn and Strodtbeck’s Value Orientation Model has identified six areas, where the counsellor and client’s worldviews may differ significantly: their ideas about the character of innate human nature (i.e., human nature orientation), their view on the mutability of human nature orientation (i.e., mutability orientation), their perspectives on human beings relations to nature (i.e., “Man-nature” orientation), how they experience and value time (i.e., time orientation), their attitudes toward activity (i.e., activity orientation), and their perspectives on social relationships (i.e., relational orientations) (F. Ibrahim & Heuer, 2016; Koltko-Rivera, 2004). Coan’s “Basic Assumptions” Model proposed essential aspects of worldview, which included voluntarism, determinism, biological determinism, environmental determinism, finalism, mechanism, emphasis on unconscious motivation versus emphasis on conscious motivation, religion, productivities versus spontaneity, relativism versus absolutism, and adventurous optimism versus resignation (Koltko-Rivera, 2004).

Sue (1978) highlighted that cultural blindness would likely continue to exist within the counseling profession if there is no theory on cultural oppression, and its relevance to the development of worldviews. The author posited that, counsellors or any helping professionals who have a different worldview than their clients, and are unaware of the grounds for this difference, are much more prone to view clients through a negative lens, and to engage in cultural oppression. For instance, a Western educated counselor who holds an individualistic view might perceive that his Asian client who holds a collectivistic view, may be passive and ineffective when his client is unable to make career decisions due to the parent's objection to his client’s desired choice. To provide a model

that enables a counselor's better understanding on the key dimensions of worldview, Sue (1978) proposed a fourfold loci model made up of two theoretical frames, which are crucial in the development of worldviews: (a) locus of control; (b) locus of responsibility.

The notion of locus of control was first proposed by Rotter (1966), and it pertains to people's perceptions of their level of control over their lives. It can be conceptualized as having two dimensions; internal and external. An individual who has an internal locus of control (IC) believes that he/she is in control of his/her destiny, and that reinforcements are conditional on our behaviors. In contrast, an individual who holds an external locus of control (EC) believes that life is beyond his/her control, and depends on luck, chance, or other unpredictable mechanisms (Sue & Sue, 2016). Research suggests that high internality is linked with (a) a larger attempt at mastering the environment, (b) reduced predisposition to anxiety (c) higher success drive (d) greater social action involvement, and (e) emphasizing more on skill-determined rewards (Sue, 1978). In general, these are the attributes which are highly prized in an American society, and are the defining characteristic of Western mental health, i.e., people with these attributes are considered psychologically healthier, and vice versa. However, studies revealed that those of color, women, and people from low socioeconomic status have a relatively lower score on internality. If such an I-E dimension is used as a criterion for mental health, people of color, the poor, and female clients would be perceived as having fewer desirable traits. As a result, a counsellor who sees a minority client with a high externality may misinterpret the client as being indifferent, procrastinating, lazy, or does not dare to try. Nonetheless, such a criterion might not be true or suitable to be applied in every culture. An unqualified application of the I-E dimension which neglects the individual's cultural experiences, may bring harm to the client. It is essential to note that externality related to ascribing control to cultural forces, or to powerful others are different from that of ascribing control to chance and luck. For example, a study in Malaysia has shown that people with an external locus of control reported fewer depressive symptoms (Yeoh et al., 2017). In a collectivist culture which emphasizes interdependence among its members, expecting others to take responsibility for one's well being is deemed common. Also, there might be real socio-political challenges that make a minority client realistically think that there is a discrepancy between his/her ability and the achievement. Sue & Sue (2016) suggested, only counsellors who know how to differentiate the meaning of external control dimension can benefit from the I-E continuum, as high externality can be attributed to (a) impersonal forces like luck, (b) cultural practices that are viewed as common and benevolent, and (c) real sociopolitical challenges, such as racism and discrimination.

The locus of responsibility, another key dimension in worldview, refers to the extent to which an individual or system bears responsibility or blame (Jones as cited in Derald Wing Sue & Sue, 2016). An individual who holds an internal locus of responsibility (IR) (a) emphasizes the understanding of an individual's motives, values, feelings and objectives, (b) attributes their success or failure to his/her skills or personal shortcomings, and (c) views success as an outcome related to one ability and effort. Meanwhile, individuals with situation-centered orientation (ER) believe that sociocultural and sociopolitical environments are much more powerful than individuals. The socioeconomic system, not necessarily based on personal attributes, determines success or failure (Sue, 1978). In essence, the former blames the individual, whereas the latter places more emphasis on the system itself. Knowing the locus of responsibility enables counsellors to understand clients' perceptions and behaviors. External locus of responsibility among minorities seems to link with collective social action, civil rights activities, racial-ethnic identity, and better psychological health (Sue, 1978). In other words, minorities with situation-centered orientation are generally much more likely to join collective action, and have a more positive attitude towards their own culture or history. While placing emphasis on the person has its own benefits, defining the problem solely as a personal issue will risk the society overlooking the influence of external factors, and to preserve the social structures which might be unhealthy. Therefore, a counsellor may need to view the locus of responsibility for minorities, or socially devalued groups in a different lens. Placing the blame for one's failure on internal factors might be too harsh, or intropunitive for minorities.

Both the locus of control and locus of responsibility are psychological orientations which are independent of one another. Both can be positioned on the continuum in such a way that they intersect, hereby generating four quadrants: (I) internal locus of control – internal locus of responsibility (IC-IR); (II) external locus of control – internal locus of responsibility (EC-IR); (III) external locus of control – external locus of responsibility (EC-ER), and (IV) internal locus of control – external locus of responsibility (IC-ER). Each quadrant represents a distinct way of looking at life, i.e., different worldviews.

3.1 Internal Locus of Control (IC)–Internal Locus of Responsibility (IR)

Ng (2007) stated that Malaysians are generally diverse based on their mental health views and help-seeking alternatives. Most of the psychiatric patients in Malaysia first sought magico-religious treatment, before seeking

professional care (Ng, 2007). Hence, although multicultural counseling is based on the universal principles of counseling psychology, it is very difficult for many counselors to practice without any recourse toward religion (Siti Aishah & Peh Kai, 2014). As previously stated, people with a high level of internal personal control (IC) feel that they have the power over their destiny, and that their actions have an impact on the consequences. Similarly, people with a high internal locus of responsibility (IR) relate their status and life circumstances to their personal attributes; i.e., success is credited to one's own efforts, while failure is assigned to one's flaws or deficiencies. The American society is perhaps the best example of the IC-IR paradigm.

Since most of the counseling models are from the United States of America, most Western-trained counsellors believe that people are responsible for their own behaviors, and that they can improve their position in life through their own efforts. Consequently, clients are expected to take the burden for change. Nevertheless, such an approach might be inappropriate while working with clients from different cultures. For instance, in Asian countries like Japan, Malaysia and the Philippines, assertiveness (i.e., higher personal control) might be viewed as a source of friction, as more emphasis is placed on preserving harmony (Niikura, 2000). Therefore, an IC-IR counselor needs to refrain from jumping into conclusion and labelling the client's behavior as deviant or negative, when the client holds different locus of responsibility, because the individual/system blame continuum may have a differing meaning for different cultural groups.

3.2 External Locus of Control (EC)–Internal Locus of Responsibility (IR)

Individuals in this quadrant are described as marginal individuals. They are much more prone to accept the dominant culture's idea of self-responsibility, while having little practical control over how they are defined by others. They deny racism exists, believe that their own people's plight is due to laziness, stupidity, and keep clinging to outdated traditions. They also reject their own cultural heritage, exhibit racial self-hatred, accept White social, cultural, and institutional standards, perceive physical features of White men and women as attractive, and believe that their ethnicity is a handicap in Western society (Sue, 1978).

In working with EC-IR minority clients, equal and acceptance relationships between the counselor and client must be stressed. This is because white counselors might be viewed as more competent and preferred than counselors of the client's own race. If unaware of such dynamics, the counsellor might overlook the valuable resources that come with an EC orientation, or reinforce the client's self-hate unconsciously. The approach of focusing on emotion might not be comfortable for EC-IR minority clients because it can expose self-hatred and understanding that they cannot escape their racial and cultural heritage. A culturally sensitive counsellor must (a) assist the client in comprehending the specific dominant-subordinate political forces that have resulted in this dilemma, and (b) assist the client in distinguishing between positive attempts to acculturate, and negative rejection of one's own cultural values (Sue, 1978).

3.3 External Locus of Control (EC)–External Locus of Responsibility (ER)

In the face of oppression, a person with a high level of system-blame and external control might feel helpless and believe that there is little one can do to change the situation. There are two possibilities to why an individual holds an EC orientation: (a) they have given up; or (b) they are trying to placate those in power. Individuals in the former group internalize their powerlessness despite being aware of the external causes of their situation. When marginalized groups learn that their actions have little impact in the environment, they develop a sense of helplessness. As a result, many may simply give up in trying to reach their personal aspirations. On the other hand, the placater conforms due to the need of survival in an oppressive environment. Because the social forces are seen as being too powerful to combat, many placaters choose to keep a low profile, and suffer the inequalities or unfair treatment in silence, yet they might not give up in their attempts to achieve personal goals yet. As direct displays of anger and resentment are risky, these groups of people might be much more inclined to express their feelings indirectly.

EC-ER clients, unlike EC-IR clients, are aware of the political forces which have oppressed them. They might display EC responses as mentioned, e.g., showing respectful or submissive behavior, and do not take the counselor's word that 'they are in control of their own destiny' seriously. Ineffective counsellors might not realize the basis of the client's behaviors, and perceive that the client is passive and lacks motivation. Conversely, a culturally effective counselor would (a) teach the clients new coping techniques; (b) empower them to experience success; and (c) acknowledge their personal and cultural identity (Sue, 1978).

3.4 Internal Locus of Control (IC)–External Locus of Responsibility (ER)

Individuals with a high internal control and system-focus feel that, given the opportunity, they can alter events in their own lives. They refuse to believe that their current situation is the result of a flaw in themselves. External

barriers like discrimination, prejudice, and exploitation, on the other hand, are realistically perceived as impeding their ability to achieve their objectives (Sue, 1978). As described previously, IC orientation is linked with greater self-confidence/efficacy, higher aspirations, etc., and EC orientation is correlated to participation in social collective actions. Hence, this group of people normally feel pride in their racial and cultural identity, and they tend to challenge the unjust treatment / social forces.

In dealing with clients from this quadrant, counselors must be mentally prepared, in the sense that their credibility and trustworthiness might be challenged, especially if the counselors are members who come from cultural groups that enjoy privilege, e.g., higher SES, being White, etc. Besides, it is expected that clients might; (a) not easily disclose themselves; (b) play a more active role in the counseling process and (c) demand action from the counselor (Sue, 1978).

To summarize, the concept of worldview suggested by Derald Wing Sue (1978) offers a great insight into mental health practitioners for understanding themselves, their clients, and predicting the dynamics/possible biases during the session. The client's problem definitions and specific counselling skills are differentially associated with a particular worldview. The IC-ER counsellor may employ more action-oriented approaches, whereas the IC-IR counsellors may be non-directive in terms of their interaction with clients, as the control and responsibility for change lies with the clients. Research has revealed that the IC-ER Asian Americans see their counselors as being much more credible when employing a directive rather than non-directive approach (Atkinson et al., as cited in Derald Wing Sue, 1978). Therefore, counselors who have greater knowledge of their own and their client's worldviews will be able to better grasp a wide range of the client's experiences, challenges, aspirations, and ways of being during the counselling process. A culturally competent counsellor is one who can develop a broader range of responses which are consistent with the lifestyles and values of the culturally different clients. Also, counselors must have a more balanced view of each quadrant of worldview, as each worldview has its positive aspects. For instance, the individual responsibility and achievement of orientation of a quadrant IC-IR, biculturalism, and cultural flexibility of the quadrant EC-IR, has the ability to compromise and adapt to life conditions of the quadrant EC-ER, and collection action and social concern of the quadrant IC-ER, which need not be mutually exclusive. Thus, a counselor plays an essential role in assisting clients to integrate components of each worldview to enhance their effectiveness and psychological wellbeing (Sue, 1978).

4. Gender and Personality

The term 'gender' has varied meanings in different cultures, and it evolves with time. The most common definition is the one stated by Goof, Gilbert and Scher (as cited in Cornish et al., 2010), which defines gender as "psychological, social, and cultural features and characteristics frequently associated with the biological categories of male and female" (p. 376). Most civilizations have traditionally been patriarchal, meaning that men have had a greater access to, and control over resources than women, resulting in a greater authority. The inequality of power between gender, although it is lower today, still exists in today's world. To illustrate, women are still paid less for equal jobs, and women are still expected to be responsible for the house chores and child-care, even when both partners are working.

In Malaysian context, men are supposed to be more involved in traditionally masculine household activities (i.e., home repairs and family administration) and women are expected to be more involved in traditionally female household chores, according to traditional gender norms (i.e., childcare or shopping). As a result, these findings confirm that as men's feeling of masculinity declines, they are more likely to participate in domestic duties and contribute more to housework (Endut et al., 2020)

From a patriarchal viewpoint, the idea that men and women are diametrically opposed has been reinforced. For instance, females have always been linked with the body (e.g., sexuality, childbirth, emotionality), whereas males have always been associated with the mind (e.g., intellect and rationality) (as cited in Cornish et al., 2010). Girls are expected to be obedient, excellent moms, selfless, reliant, and trustworthy. On the contrary, pressure is placed on boys to be outgoing, independent, and assertive. Despite a substantial amount of evidence indicating that the differences in men's and women's traits and aptitudes are minor, and that similarities are more common, many still obsess with the differences. Books such as 'Men Are from Mars, Women Are from Venus' have gained significant popularity. This kind of distorted perceptions and social expectations can ultimately harm both men and women, because not all men are powerful or competitive, and not all women are emotional or less competent. The inability to meet all the gender role demands have resulted in psychological distress, such as paranoia, depression, and psychoticism (Robinson-Wood, 2017).

To be competent with respect to therapeutic practice with people from different genders, it is recommended that mental health practitioners gain an awareness of the gender role socializations and stereotypes across cultures.

Practitioners need to review their own values and attitudes towards different genders. Mental health professionals who are unaware of the significance of gender in their own lives or in society may accidentally support the status quo, alienate the client, or unduly perpetuate their sense of pathology (Good et al. as cited in Cornish et al., 2010). There are also possibilities where they unintentionally impose their own, unexamined gender expectations on their clients. Besides, they may fail to see how gender fits within a woman's multiple identities, and impose a one-size-fits-all image based on their own cultural values. Without the correct understanding of a client's context, mental health practitioners might misdiagnose and put the blame on clients over things that might be out of their control. Counselors must also recognize that there might be variability within each gender group. Hence it is crucial for counselors to learn and explore gender identity models. Some of the examples of gender-specific models are the Key model (Scott & Robinson, 2001), Downing and Roush's (1985) feminist identity development model, and Hoffman's (2006) model of feminist identity (as cited in Hays & Erford, 2017).

5. Conclusion

Culture evolves over time, so do the cultural identities and the efficacy of counseling to maintain relevance to the intended population, cultural norms must be considered. The formation of cultural identity is very complex, and involves many aspects, apart from the three dimensions that were discussed in this paper, i.e., religious beliefs, worldview, and gender. As a guideline, counselors should refer to the Tripartite Development of Personal Identity, to identify the characteristics that are entirely unique to an individual, for example, other traits that are common within the client's cultural group, and the universal characteristics that are common to everyone. Nevertheless, counselors should always remember that we are not able to give our clients things that we do not have. Therefore, counselors should always search within themselves, how culture shapes and influences their opinions, assumptions, and beliefs. Only then can counselors avoid harm to the client through countertransference, or value imposition, and be much more culturally competent.

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Address Trainee Counselors' Perplexities: Integrating Predictors of Self-Efficacy into Counseling Ethics Education

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Abstract

The process of addressing ethical perplexities is challenging and there is insufficiency of clear solutions and proper resources to resolve the ethical quandaries. Thus, this study aims to identify the greatest predictor of trainee counselors' self-efficacy in addressing ethical perplexities. The greatest predictor of self-efficacy is expected to enhance the existing counseling ethics education curriculum and pedagogy. A quantitative methodological approach was administered through questionnaires. There were 148 trainee counselors selected through simple random cluster sampling and they were all students from private universities in Malaysia. The data gathered were analyzed using correlation and multiple regression analyses. Correlation analysis recorded the highest coefficient of r value which was a substantial relationship between self-efficacy and multicultural competence. Next, multiple regression analyses indicated that the three predictors which are multicultural competence, religiosity, and spirituality were predictive of self-efficacy. However, the strength of prediction varied. Multicultural competence had the most powerful prediction on trainee counselors' self-efficacy, followed by spirituality, and religiosity. These findings revealed the importance of the three predictors in enhancing trainee counselors' self-efficacy, addressing ethical quandaries, and developing pedagogic counseling education. The process of preparing and developing intuitive counseling professionals is worthy of attention in the counseling training and practice, specifically in addressing ethical perplexities. Thus, the three predictors should be integrated into the counselor education curriculum and pedagogy at all levels. Cultivation of these three predictors in all trainee counselors would build their level of self-efficacy and help in their survival during counseling dilemmas, leading to successful counseling sessions.

Keywords: self-efficacy, multicultural competence, religiosity, spirituality, counseling ethics education, ethical perplexities

1. Introduction

The process of developing intuitive counseling professionals is worthy of attention in the counseling training and practice, specifically in addressing ethical perplexities. The counseling professionals should be mindful of the codes of ethics to ensure they remain alert to the possibility of misbehaviors in counseling. For instance, trainee counselors learn to utilize ethical decision-making models when dealing with clients and at the same time, they also may be negotiating boundary-crossing issues with their counseling educators (Burns, 2019). In agreement with what Burns (2019) mentioned, trainee counselors and counselor educators should always refer to the code of ethics as it governs the principles of ethical behaviors and ethical judgements for misbehaviors which are addressed to the counseling professionals. Thus, trainee counselors need a well-designed counseling ethics education curriculum and pedagogy encompassing ethical principles and codes of ethics to ensure deliveries of effective counseling.

1.1 Ethics in Counseling

Ethics involves evaluation of human behaviors. It is vital to categorize those human behaviors either as 'rational' or 'irrational' (Mohd Jaladin & Lau, 2013). The decision-making process requires ethical guidelines and moral reasoning abilities. Ethics also refers to standards and guidelines established to regulate the counseling profession. According to Mullen et al. (2014), it is an interactional process which requires counseling

professionals' knowledge and confidence in making ethical decisions. In the Malaysian context, counseling professionals are required to adhere to the standard ethical guidelines and yardstick set by local entities such as Board of Counselors (Malaysia), International Counseling Association of Malaysia (PERKAMA International), MOE, and international bodies such as American Counseling Association (ACA), and American Psychological Association (APA). Above all, registered counselors in Malaysia are protected by Malaysian Counselor Act 1998 (Act 580) and the written law provides a guide to legal and ethical practice in counseling within the Malaysian setting. The Malaysian Counselor Act 1998 (Act 580) highlights eight different sections: (a) Preliminary; (b) The Malaysian Counselors Advisory Council; (c) The Board of Counselors; (d) Registration of Counselors and Practicing Certificates; (e) Body Corporate Practice as Counselors; (f) Disciplinary Proceedings; (g) Offences and Penalties; and (h) Miscellaneous (Counselors Act 1998 [Act 580] and Regulations, 2016; Mohd Ishak et al., 2012). The Act clearly states the responsibilities of counselors and misbehaviors that are considered offensive (Mohd Ishak et al., 2012). Furthermore, the Act assists counselors throughout the counseling process and establishes the role of counselors in the community (Mat Rani et al., 2017).

Besides the Malaysian Counselor Act 1998 (Act 580), the registered counselors in Malaysia are guided by the Counselors Code of Ethics. The Counselors Code of Ethics is used to consider ethically acceptable professional behaviors when delivering counseling services (Mohd Ishak et al., 2012). It also provides standard guidelines as the basis in overcoming ethical dilemmas in counseling and concomitantly, navigate counselors' helping profession (Mohd Ishak et al., 2012). The Counselors Code of Ethics consists of eight primary sections: (a) Counseling Relationship; (b) Confidentiality and Privacy; (c) Professional Responsibility; (d) Relationship with other Professionals; (e) Evaluation, Assessment, and Interpretation; (f) Supervision, Training, and Teaching; (g) Research and Publication; and (h) Resolving Ethical Issues (Board of Counselors [Malaysia], 2016). All the eight sections are a set of fundamental ethical guidelines that support the mission of the Board of Counselors (Malaysia) and define the functions of counselors.

1.2 The Present Study

This study targeted trainee counselors and limited literature reviews or research on trainee counselors' efficaciousness in addressing ethical perplexities warrants further research. According to Mullen et al. (2014), ethical and legal dilemmas are seen as a complex system and covers various branches of counseling. To date, there is insufficiency of clear solutions and proper resources to resolve the ethical quandaries (Hill, 2004; Zakaria & Warren, 2016). Therefore, this study revealed the idea of incorporating multicultural competence, religiosity, and spirituality into the counselor education curriculum and pedagogy to develop trainee counselors' skills in addressing ethical and legal perplexities. According to Ledoux et al. (2019), influence of multicultural competence, religiosity and spirituality under professional and ethical standards may impact individuals' care choices, health, and care delivery. A similar concept is applied in the present study. Multicultural competence, religiosity, and spirituality are expected to impact trainee counselors' choices in addressing ethical and legal perplexities efficiently.

2. Literature Review

Multicultural competence is associated with the differences between counselor and client and those differences can be the result of traumatic life events, socialization, or ethnic environment (Gladding, 2013). In the context of current study, multicultural competency is defined as counselor's self-perceived awareness, knowledge, and skills about various cultures. According to Owen et al. (2010), one's multicultural competence leads to positive results and guides counselors in the counseling process. A counselor's responsibility of being multiculturally competent besides being empathy, non-judgmental, ethical, and so forth can be very challenging. This challenge requires counselors to be prepared and be efficacious in the aspect of multicultural counseling competency (Harun et al., 2014). Counselors who have a strong foundation in multicultural competency would be able to expand their self-efficacy in providing positive counseling outcomes (Harun et al., 2014).

On the other hand, religion refers to an individual's behaviors, thoughts, and experiences which results from a search for sacredness that gets support and validation from a society (Post & Wade, 2014). Dalmida et al. (2012) explained further that religiosity is associated with worship that is organized by a group of people. According to Oren and Possick (2009), religiosity is beneficial during the time of stress. In the context of counseling, stress is defined as perceived pressure that is beyond one's coping ability (Gyllensten et al., 2005). Thus, perceived religiosity is crucial to help counselors cope with challenges and guide them to address legal and ethical perplexities. This would be the main focus of the current research where religiosity is measured as an influential factor that affects counselor's self-efficacy in addressing legal and ethical perplexities. Meanwhile, spirituality is a person's search for purpose and meaning of life which involves transcendence. The researchers found

correlations between spirituality and many other aspects of lives such as job satisfaction and moral development (Curry et al., 2015). It is empirically proven that spirituality would contribute to the overall well-being of trainee counselors including being efficacious in addressing ethical and legal perplexities. On the contrary, there are even situations where human beings encounter problems due to misinterpretations of religious and spiritual elements (Ahmad et al., 2013).

The process of integrating these three domains which are multicultural competence, religiosity, and spirituality would help prepare trainee counselors to address ethical perplexities effectively by enhancing their self-efficacy beliefs. The process of incorporating multicultural competence, religiosity, and spirituality could be one of the solutions to overcome ethical perplexities in the future. The Council for Accreditation of Counseling and Related Educational Programs aspires counselors to gain experience in six areas and one of them is human growth and development. In line with the aspiration, the present study focused on multicultural competence, religiosity, and spirituality which can be classified under the area of Human Growth and Development

Multicultural competence, religiosity, and spirituality are important elements that should be instilled by every counseling professional in providing professional counseling services, specifically when addressing ethical and legal perplexities in counseling. There are counseling professionals who could not afford to digest multicultural competence, religious, and spiritual values due to their surroundings and social modeling which is accumulated with the spectrums of classism, caste system, and racism (Curry et al., 2015). Racism is defined as domination that occurs when a superior racial group is used to prescribe social status of other racial groups (Claire & Denis, 2015) whereas caste system refers to humans' power in society and their position in the division of labor (Riswan, 2014). The spectrum of social classes is divided into three classes which are lower class, middle class, and upper class (Riswan, 2014). Finally, classism refers to a system that ranks people based on economic status, level of education, job, and family lineage (Brantley et al., 2003).

People who work for the dominant group are being controlled, work for wages, and make the dominant group's living. Thus, counseling professionals need to be aware of personal and professional challenges by mastering counseling skills, acquiring knowledge, and building capabilities to meet the expectations of the counseling profession (Chin & Kok-Mun, 2010) specifically in the new norm. Therefore, it is important for trainee counselors to have elements of multicultural competence, religiosity, and spirituality as they are essential in building confidence that can be applied when addressing ethical challenges.

The term efficacious stemmed from the Social Cognitive Theory (SCT), a theory coined by Albert Bandura. Bandura defined self-efficacy as a person's ability to accomplish a new or challenging task and this was again highlighted by Curry et al. (2015). Bandura also revealed that people who have a high level of self-efficacy will not view ethical perplexities as problems; but see them as challenging activities that need to be overcome (Sawyer et al., 2013). This statement answers the objectives of current research. Efficacious trainee counselors would be able to overcome challenges such as ethical dilemmas and practice to overcome these issues by cultivating multicultural competence, religiosity, and spirituality. Furthermore, SCT predicts methods on how behaviors can be modified (Pei-Hsuan & Schallert, 2008). For instance, the application of SCT would help trainee counselors who are not capable of facing ethical and legal perplexities to have some modification on their behaviors. The trainee counselors would need to modify their behaviors from being unconfident to efficacious trainee counselors and pertinent behavior modifications can be done by cultivating multicultural competence, religious, and spiritual values.

In addition, self-efficacy is defined as individuals' perception of their capability to achieve targeted goals. If trainee counselors' target is to achieve the goals of counseling sessions, then the trainee counselors are expected to be efficacious specifically when addressing ethical and legal perplexities. The efficacious beliefs hopefully can be obtained gradually upon the practice of multicultural competence, religiosity, and spirituality. For example, understanding of values, self-awareness, and self-recognition are the sub-branches of spirituality and a true human recognition leads to self-efficacy beliefs (Karami & Imani, 2014). Thus, cultivation of spirituality helps trainee counselors to understand about self-recognition, subsequently enhancing their self-efficacy beliefs in addressing ethical and legal perplexities. Karami and Imani (2014) added that efficacious people make attempts to achieve success and do not capitulate despite the challenges and consequences encountered. This supports what SCT revealed. SCT suggested that efficacious individuals will believe in themselves, believe in their own abilities, create behaviors to achieve expected results, and make efforts or take initiatives to apply desired behaviors.

Furthermore, Warren et al. (2012) studied the use of bookmarks in teaching counseling ethics. They reported that bookmarks could be used as a toolbox to measure trainee counselors' cognitive development. The bookmark

activity can enhance the cognitive development of trainee counselors, creates understanding of the ethical awareness, and builds competencies in ethics. Thus, this demonstrates how cognitive development, specifically in the context of social cognition, can affect trainee counselors' ethical decision-making process. Bandura even stated the influence of psychological and neurophysiological theories in the construct of 'self' where 'self' is seen as an object. However, Bandura always would not want the dualism to separate self as an agent from self as an object (Martin, 2004). According to him, every individual is an agent when he or she is executing a course of action. Thus, the current research emphasizes self-efficacy, whereby the researchers believe that efficacious trainee counselors are the agent of actions taken during the ethical and legal dilemma and they could be influenced by the three influential factors which are multicultural competence, religiosity, and spirituality.

In the light of such views, Bandura (2011) reported that Western theories cannot be generalized to non-Western cultures. For instance, social modeling is influenced by individuals' observational learning regardless of the culture that they are living in. In contrast, efficacy belief varies across cultures due to the reasons to which they have put and the way in which they are expressed. Thus, the researchers believe that the current study focusing on self-efficacy in addressing ethical and legal perplexities among trainee counselors' in Malaysia would be interesting as the country is well-known for its multiracial, multilingual, and multicultural aspects. Furthermore, the Western-based theory which is SCT disclosed that self-efficacy beliefs are the groundwork of how people feel, what people think, how they make decisions, and how people motivate themselves (Burney, 2008). This shows that the whole human makeup involves interactions of environment, behavior, and personal (see Figure 1). These interactions resemble the selection of multicultural competency, spirituality, and religiosity as influential factors in the current study.

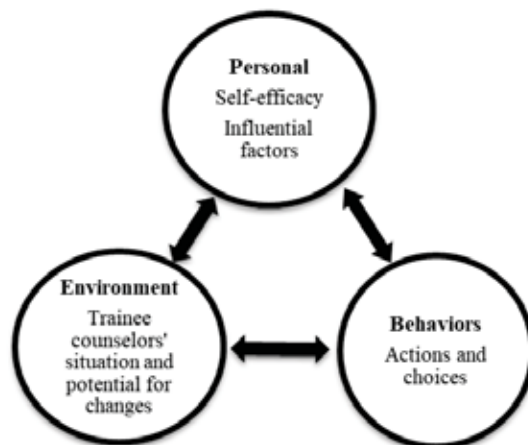


Figure 1. Interactions among personal, behavior, and environment

3. Methodology

3.1 Participants

The targeted participants are trainee counselors who are pursuing their Masters in selected private universities in Malaysia. The sample size was calculated using Cochran's (1977) formula and required 148 trainee counselors, for a population size of 243, assuming an alpha level of .05. Surveys were distributed to 148 trainee counselors consisting of four sections and 77 items. The participants were selected through simple random cluster sampling. The researchers believe that education institutions established a few years back with smaller number of trainee counselors as compared to public universities would experience challenges in having robust discussion and solutions to ethical quandaries. Furthermore, there are limited studies conducted on this research area involving trainee counselors from private universities.

3.2 Measures

The researchers developed a questionnaire consisting five sections and five instruments: Section A (Demographic Background); Section B (Spirituality Index of Well-Being); Section C (Religious Commitment Inventory); Section D (Multicultural Counseling Knowledge and Awareness Scale); and Section E (Ethical and Legal Issues in Counseling Self-Efficacy Scale). The details of each instrument are as follows:

3.2.1 Spirituality Index of Well-Being (SIWB)

The SIWB is a 5-point Likert type scale. The responses range from 1 (strongly disagree) to 5 (strongly agree). SIWB measures participants' perceptions of their quality of life in terms of spirituality. SIWB is made up of two

subscales: (a) self-efficacy subscale; and (b) life-scheme subscale. The alpha coefficients of the subscales were .83 and .80 respectively. In addition, SIWB consists of 12 items in which item 1 to item 6 measures self-efficacy; meanwhile item 7 to item 12 is related to individuals' life-schemes. The whole SIWB scale had an alpha of .87 (Daaleman & Frey, 2004; Daaleman et al., 2002). The internal reliability of SIWB as computed by Frey et al. (2005) was .79. Furthermore, this instrument claims good construct validity, convergent validity, and discriminant validity (Daaleman et al., 2002; Frey et al., 2005; Yi -Hui et al., 2015).

3.2.2 Religious Commitment Inventory (RCI-10)

The RCI-10 consists of 10 items and it is a self-report inventory that measures individuals' religious commitment. The 5-point Likert type scale which ranges from not at all true of me (1) to totally true of me (5) measures to what extent trainee counselors address their religious beliefs. Furthermore, RCI-10 is divided into two parts which are intrapersonal religious commitment consisting of six items and interpersonal commitment consisting of four items. Items 1, 3, 4, 5, 7, and 8 are under the umbrella of Intrapersonal Religious Commitment (IARC) subscale and the remaining items make up the Interpersonal Religious Commitment (IERC) subscale. Furthermore, RCI-10 has strong internal consistency, construct validity, and discriminant validity (Worthington et al., 2003). The three-week test-retest reliability values for the RCI-10 scale, IARC subscale, and IERC subscale were .87, .86, and .83 respectively. This instrument has strong psychometric characteristics (Miller et al., 2013).

3.2.3 Multicultural Counseling Knowledge and Awareness Scale (MCKAS)

The MCKAS consists of 32 items. MCKAS measures an individual's perceived multicultural competence based on two factors: (a) multicultural knowledge with 20 items; and (b) multicultural awareness with 12 items. Coefficient alpha for the multicultural knowledge scale was .92 and .78 for the multicultural awareness scale. A total of 20 items makes up the Knowledge subscale while 12 items make up the Awareness subscale. The scale is a 7-point Likert type scale and the responses range from not at all true (1) to totally true (7). A total of 10 items in MCKAS need to be reverse scored which are items 1, 4, 7, 10, 11, 18, 20, 24, 25, 26, 29, and 30 (Ponterotto et al., 1996). MCKAS recorded a good construct, criterion-related, and content validity (Chao, 2015).

3.2.4 Ethical and Legal Issues in Counseling Self-Efficacy Scale (ELICES)

This instrument was developed by Mullen et al. (2014). The ethical and legal competence is one of the most difficult competencies that a researcher can define and measure (Hang Jo, 2016). The ELICES consists of 23 items. It is a (0) Cannot Do At All to (100) Highly Certain Can Do response Likert type scale. Items 5, 6, 9, 11, 12, 13, 14, 16, 17, 18, 21, 22, and 23 make up the first factor, items 1, 3, 4, 7, 8, 10, and 19 make up the second factor, and finally items 2, 15, and 20 make up the third factor. The ELICES measures trainee counselors' self-efficacy in addressing ethical and legal quandaries across three different factors:

- (a) counseling self-efficacy in terms of general ethical and legal perplexities;
- (b) self-efficacy for suicide, neglect, abuse, and violence; and
- (c) self-efficacy for counselor development and well-being.

4. Results

Pearson correlation analysis as reported in Table 1 indicated a positive association between spirituality and participants' self-efficacy in addressing ethical perplexities ($r = .241, p < .05$). Referring to Guilford's rule of thumb, correlation r value between 0.20 and 0.40 would reflect a weak correlation. Therefore, the strength of the relationship between self-efficacy and spirituality is weak. Next, religiosity is positively correlated with participants' self-efficacy in addressing ethical and legal perplexities ($r = .163, p < .05$). The relationship strength formed between self-efficacy and religiosity was almost negligible due to the small r value (< 0.20). Next, multicultural competence is positively related to participants' self-efficacy in addressing ethical and legal perplexities ($r = .418, p < .05$), which were also significant at $p < .01$. The r value between .40 and .70 reflects a substantial relationship between self-efficacy and multicultural competence.

Table 1. Correlation coefficient of the predictors

Predictors of Self-Efficacy	Sig. (2 tailed)	r
Spirituality	.003	.241
Religiosity	.047	.163
Multicultural competence	.000	.418

Multiple regression analysis findings as reported in Table 4 indicated that all the three factors were predictors of self-efficacy. The researchers found a significant regression equation, [$F(3, 144) = 17.9, p = .004$] for the predictor of spirituality, followed by religiosity [$F(3, 144) = 17.9, p = .007$] and multicultural competence [$F(3, 144) = 17.9, p = .000$], with an R^2 of .272 respectively (see Table 2 and Table 3). R^2 was .272 which means only 27.2% of the variances predicted respondents' confidence in addressing ethical and legal perplexities. The regression analyses showed that spirituality ($\beta = .210, t = 2.90, p < .05$), religiosity ($\beta = .199, t = 2.72, p < .05$), and multicultural competence ($\beta = .452, t = 6.27, p < .05$) have significantly predicted participants' self-efficacy in addressing ethical and legal perplexities. However, the strength of prediction varied. Multicultural competence has the highest beta coefficient ($\beta = .452$), followed by spirituality ($\beta = .210$), and religiosity ($\beta = .199$). Multicultural competency was the greatest predictor of trainee counselors' self-efficacy and it could be used by counseling professionals to address ethical and legal perplexities in counseling. The regression equation formed was $y = 2.92x + 2.37x^2 + 12.8x^3$.

Table 2. Model summary of multiple regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.521 ^a	.272	.257	9.84

Table 3. Analysis of variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	5209.569	3	1736.523	17.921	.000 ^a
1 Residual	13953.128	144	96.897		
Total	19162.697	147			

Table 4. The coefficients of multiple regression

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Constant	-5.52	10.3		-.537	.592
Spirituality	2.92	1.00	.210	2.90	.004
Religiosity	2.37	.873	.199	2.72	.007
Multicultural Competency	12.8	2.04	.452	6.27	.000

5. Discussion

There is a positive relationship between self-efficacy and spirituality. The results highlighted that trainee counselors would become more efficacious when they are more spiritual. Spirituality motivates trainee counselors in dealing with the challenges of addressing ethical and legal perplexities by improving their self-efficacy (Abou-Amerrh, 2013; Cashwell & Watt, 2010; Hamzah et al., 2010). Spiritual participants would have strong internal strength, aware of how to react to any environment, and able to make ethical decisions. The internal strength would be an agent that trainee counselors can lean on during the period of ethical decision-making (Lietz & Hodge, 2013).

Furthermore, spiritual values help in the growth of self-efficacy beliefs in every trainee counselor, who would revolutionize the beliefs into effective actions (Karami & Imani, 2014). Thus, the relationship between self-efficacy and spirituality proves the capability of trainee counselors with spiritual values to address ethical and legal perplexities efficiently. Moreover, Oman et al. (2003) mentioned that spirituality is an agent that is associated with greater well-being, able to reframe a distressing condition, promote effective coping behaviors, increases the level of self-efficacy, and provides an inspirational passage. Thus, based on what spirituality is associated with, participants or trainee counselors will be able to address ethical and legal perplexities in counseling. This could be due to the participants' behavior modifications that result in successful reframing of challenging issues. The research conducted by Oman et al. (2003) suggested that participants who were exposed to spiritual resources such as inspirational readings and repetition of holy words reported an increase in their level of efficacious beliefs in dealing effectively with several caregiving tasks. A similar concept could be applied in the current study. Participants who have scored high in their level of spirituality would also score high in their level of self-efficacy.

The researchers also found a significant relationship between religiosity and self-efficacy. However, the

relationship strength is weaker compared to spirituality. The results revealed that trainee counselors would become more efficacious if they are religious. Robinson and Wicks (2012) found that religious beliefs helped trainee counselors in making decisions efficiently. The value of religiosity would positively affect participants' cognition while self-efficacy would positively reframe participants' behaviors, which eventually would influence participants' ability to address ethical and legal perplexities efficiently. In this case, the participants are not required to resolve the ethical issues by themselves. Instead, they may utilize the support and advice provided by their religious groups which will boost their self-efficacy to overcome ethical issues in counseling (Stanley et al., 2011). However, the participants should make sure that their clients' confidentiality is protected.

The value of religiosity provides a platform for trainee counselors to improve their idiosyncrasies, attitudes, and behaviors (Ault, 2010; Garfield & Isacco, 2013; McCree et al., 2003; Plante, 2008). Religiosity involves participants' participation in religious activities such as charity, prayers, religious services, and church choir. Individuals need validation from a chosen religion group to be called as a member of the group. The religious group would provide participants with more knowledge and experiences to enhance understanding of every aspect of their lives including self-efficacy. The understandings which lead to improvements in the behaviors of participants would assist in boosting their level of self-efficacy. Subsequently, the increased self-efficacy would help participants in understanding their clients better and deal with ethical issues efficiently.

Oren and Possick (2009) stated that the value of religiosity is useful when individuals are facing difficult situations which lead to stress. Stress is perceived as a condition that is beyond the individuals' coping ability (Gyllensten et al., 2005). Thus, participants who are facing ethical and legal issues would be having stress and this is when the participants would apply self-efficacy to overcome the ethical issues. Hence, it is convincing that religiosity helps in boosting participants' self-efficacy which eventually becomes one of the coping strategies used to overcome ethical issues in counseling.

The third correlation analysis recorded a positive relationship between self-efficacy and multicultural competence. This relationship is the strongest among all the relationships. The results revealed that multicultural competent trainee counselors will be able to address ethical and legal perplexities efficaciously. The greater the value of multicultural competency in trainee counselors, the better they deal with ethical issues. Multicultural competency involves trainee counselors' knowledge, awareness, and skills. Participants who could utilize their multicultural skills, knowledge, and awareness using appropriate channels or methods would be able to digest ethical and legal perplexities in counseling. This process would prove the participants' improved self-efficacy due to maximized capabilities in applying the essence of multicultural competence.

Those participants who have scored high in their level of multicultural competency would have deep affection towards their own culture and the culture of others. They understand the culture of others, have an urge to learn the culture of others, and accept other cultures equivalent to their own. The acceptance would increase the participants' level of self-efficacy as they are confident in what they are dealing with and subsequently find ways to overcome ethical perplexities in counseling.

The analysis of determining the factors that predicted participants' self-efficacy in addressing ethical and legal perplexities is the most important analysis in the current study. In essence, this analysis is the backbone as it answers the main objective of the study. The findings revealed that all the domains have significantly predicted trainee counselors' self-efficacy in addressing ethical and legal perplexities. The domains: (a) spirituality; (b) religiosity; and (c) multicultural competency have predicted trainee counselors' self-efficacy in addressing ethical and legal perplexities. These domains could serve as principles that guide people's living and be used as cognitive weapons to promote self-dignity which provide opportunities to people to perform a task more effectively. Spirituality, religiosity, and multicultural competency are the cognitive weapons that would modify the participants' behaviors, subsequently providing them with opportunities to accomplish tasks efficiently. The behavior modifications include changes from being ineffective to effective and diffidence to improved self-efficacy.

However, the power of how much each factor has predicted trainee counselors' self-efficacy varied. Multicultural competency has a large prediction on trainee counselors' self-efficacy in addressing ethical and legal perplexities. Next, spirituality has the second large prediction on trainee counselors' self-efficacy, followed by religiosity. Garfield et al. (2013) mentioned that domains such as religiosity and spirituality are effective coping behaviors that assist counselors in making decisions during the period of the ethical and legal dilemma. As Bandura (2011) and Burney (2008) stated, self-efficacy is the groundwork of all human beings' behaviors. When the domains improve trainee counselors' coping behaviors, subsequently it also enhances their self-efficacy.

The changes in coping behaviors with enhanced self-efficacy would eventually enhance the level of confidence

in trainee counselors and prepare them in addressing ethical and legal perplexities. For instance, trainee counselors who have a low level of self-efficacy and unable to deal with ethical issues in counseling would have options to modify and improve their behaviors by cultivating multicultural competence, spirituality, and religiosity values. The cultivation would help them enhance their level of self-efficacy and eventually help them to face the ethical issues efficiently. Thus, the researchers believe that multicultural competence, spirituality, and religiosity are vital in building the level of self-efficacy in all trainee counselors.

6. Conclusion, Limitations, and Recommendations

Multicultural competence, spirituality, and religiosity are important domains and should be integrated into the counselor education curriculum and pedagogy at all levels. These domains can be viewed as requirements for the survival of society. Thus, cultivating these three predictors in all trainee counselors would build their level of self-efficacy and help in their survival during counseling dilemmas which would lead to successful counseling sessions. Self-efficacy should be seen as one of the important components in maintaining the quality of counseling services. The ability of trainee counselors to face ethical issues in counseling would reflect their professionalism as trained counselors. The professionalism of trainee counselors would build confidence and trust in every individual, eventually would increase the number of individuals seeking help from trainee counselors and registered counselors. The effort to develop and prepare trainee counselors should start from education institutions where trainee counselors are trained. The researchers recognized a number of limitations. The sample was recruited from three private universities. However, there was a limited number of trainee counselors studying at masters' level in Malaysian private universities. . Thus, the sample size was smaller and the results represented a smaller group of students compared to the bigger number of counseling students studying at masters' level in public universities. Next, there were limited previous studies conducted to examine trainee counselors' self-efficacy in addressing ethical perplexities. The future research may include trainee counselors from both private and public universities to generate and generalize results from a bigger population size. Upon integration of the multicultural competency, spirituality, and religiosity into the counseling ethics education pedagogy, an experimental research design can be implemented to test effectiveness of the new pedagogy.

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Relationship Between Leadership, Resilience, and Competence Amongst Police Officers in Klang Valley, Malaysia

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Abstract

Excellent human resource development prioritizes organizational performance development elements. Organizational performance in Malaysia's public sector is a concept that still needs to be explored. To date, improvements to leadership quality in order to enhance employee competence is one of the areas of study that has become the focus of researchers in the field of human resource development. In fact, leadership quality is also influenced by a person's self-resilience to changes – one such example is police officers' competence in order to perform their duties well. This study aims to assess the relationship between self-resilience and the leadership qualities of police officers. The study involved the Royal Malaysia Police of the state of Selangor. The study which used a simple randomized quantitative method involved 105 respondents comprised of police officers and other members of the force. Findings of the study indicate highest positive relationships between leadership and competency, resilience and competency, and resilience and leadership, with r values between 0.791 to 0.864. However, the relationship between leadership quality based on education level and length of service (work experience) was not significant. This study shows that there are several elements in human resource development and performance management that can be improved by emphasizing on the leadership aspect in order to improve the competencies of police officers in Malaysia.

Keywords: competency, leadership, police officer, resilience

1. Introduction

The ever-changing and increasingly complex structure of organizations has challenged all companies to develop their respective human resource potential. Human resource development has become an important element in excellent organizations in line with the current world's challenges (Rami et al., 2021) as well as the 12th Malaysia Plan which one of its aims is to enhance human resource research and development (RMK-12, 2020). Even in the 11th Malaysia Plan (RMK-11), human resource development is seen as a critical factor in generating and sustaining Malaysia's economic growth (11th Malaysia Plan, 2015; 12th Malaysia Plan, 2020). The Human Development Report (2019) also explained that the development of human resources is an important element that needs to be given more serious attention through programs and action plans formed holistically and comprehensively to ensure the best quality of human resources (The United Nations Development Program, 2019). Up until the third quarter of 2019, civil service posts have shown an increase of 0.1 million from the 1.6 million in 2018, and this covers the federal civil service, federal statutory bodies, state civil service, state statutory bodies, and local authorities (Statistics Malaysia, 2020). As much as 62% of the total size of civil service posts are in health, education, as well as the security forces sectors (Maidin. 2019). As of 31st November 2019, the Royal Malaysian Police (PDRM) recorded 114,688 posts which is 7.64% of the 62% of the total civil service posts aforementioned, and this percentage includes all departments, contingents, formations, brigades, and districts (PDRM, 2019). However, the most worrying issue is when a total of 51,668 police officers had stated that misconduct still exists in PDRM – this fact has affected PDRM's services and forced the organization to become an agency focused instead on addressing the issue of misconduct through the establishment of the 2020 Independent Police Conduct Commission (IPCC), according to the outcome of a questionnaire analysis. The 2020-2024 *Pelan Antirasuah Polis Diraja Malaysia* (PAPDRM) listed that the risk of corruption is at 11.48, followed by the risk of integrity at 4.36 (PDRM, 2020).

1.2 Police Officers' Competency

Competencies in the context of PDRM focus on the chronology of promotion which is earned based on 22 sub-criteria contained in 5 main competency criteria. Other human resource management functions, on the other hand, are implemented selectively in bits and pieces (PDRM, 2015). However, an analysis of the PAPDRM questionnaire data showed that although various approaches have been implemented by PDRM, misconduct still exists within police personnel, a fact that has affected the organization's quality of service (PDRM, 2020). This is because the element of competency in the career development of a police officer is highly dependent on the factor of reputation or good relationship with superior officers (Haase, 2007; Hogget, 2018). This statement is supported by Tasriff *et al.* (2016) and Ahamada *et al.* (2018), who stated that employee competency profiles are usually based on individual strategies as opposed to strategies undertaken by organizations. This indicates that organizational strategies need to be strengthened in order to ensure that employee competencies are at the best level (Tasriff *et al.*, 2016; Ahamada *et al.*, 2018; Lin & Kim, 2019).

1.3 Leadership Quality

Leadership quality has been seen to have huge implications on career development, especially in terms of employee competencies. It has a significant relationship with flexible leadership quality and aligns with the achievements targeted by organizations in various sectors (Aziz *et al.*, 2020). Flexibility is defined as being parallel with internal trends intended to make the right changes in order to develop the competencies needed by an organization (Charles, 2013). On the other hand, a flexible leadership style refers to the way leaders interpret situational clues and adjust their decisions, behaviors, and actions to achieve desired goals (Good & Sharma, 2010; Baron *et al.*, 2018; Yukl & Mahsud, 2010; Yukl, 2012). In fact, career development has a significant relationship with competencies in job performance (Arifin *et al.*, 2020) and leadership roles and qualities (Bakri *et al.*, 2009). Quality leaders must have complete information in order to make decisions and ensure that the decisions made are fair and able to provide satisfaction to employees involved without being influenced by other sources (Mansor & Hamzah, 2015).

1.4 Resilience

The level of resilience in a leader is a key factor in ensuring that leadership qualities can be practiced effectively (Becker, 2002). It is also highly important in organizations that are always in unforeseen situations and need to make urgent decisions in accordance with the passage of time (Dirani *et al.*, 2020). According to Southwick *et al.* (2017), a leader's self-resilience is seen through the way he adapts when dealing with issues and problems that arise. Various factors can influence a leader's self-resilience - it starts from the leader's own self and is based on the experience and environment of the individual as well as how these elements are developed and implemented in organizational leadership.

To ensure that employees have the quality and competence that organizations need, there should be processes to help employees remain competitive in a healthy way (Rusilowati & Maulida, 2020). Organizations should focus on healthy competition amongst employees which can be created through competency determination and positive career development as both do enhance organizational productivity (Hasan *et al.*, 2020). Competency planning and assessment allows employees to know their own qualifications in order to pursue the next steps in their careers (Salleh *et al.*, 2007). However, there are still various issues involving police officers' competency, more so in delivering services and performing assigned tasks. According to Filstad and Karp (2020), this is because currently, it is standard practice for the police to 'take care of each other', therefore explaining why promotion or competency is based on reputation factors or good relationships with superior officers rather than job performance (Haase, 2007; Hoggett, 2018).

Filstad and Karp (2020) stressed that in security forces, leaders should always be prepared and professional in ensuring their subordinates' competency in order to maintain the continuity of difficult and challenging tasks as a team. Police officers should always be given the space and opportunity in career development with the aim of enhancing their competencies. Therefore, research into police leadership quality requires more attention that is based on the understanding of the development of police officer competencies through leadership. Dirani *et al.* (2020) stated that the quality of leadership is portrayed as being able to respond to unforeseen changes in new or challenging situations, and this factor highly affects employee competencies. Thus, leaders should be able to adjust their own competencies in order to respond professionally in reference to other elements under human resource development in order to pursue the best competencies and remain competitive.

As mentioned earlier, a leader's self-resilience is seen through the way they adapt in dealing with issues and problems that arise in an organization. Various factors can influence a leader's self-resilience; nonetheless, it starts from one's own self and is based on the individual's experience and environment as well as how these

elements are developed, implemented and translated into leadership qualities needed by an organization (Southwick et al., 2017; Becker, 2002). Self-resilience's influence on leadership quality can also help improve employee competence, therefore enabling employees to perform quality work which in itself is a form of direct support to the organization in order to grow sustainably (Helmi et al., 2020). A study on the effect of leader personality on self-resilience found that employees evaluate the emotions of relationships with leaders who share the same leadership values (Campbell & Kodz, 2011).

This study combined two theories, namely the Competency Motivation Theory (Hartes, 1981) and the Resilience Theory (Kaplan et al., 1996) with a model, namely the Transformational Leadership Model (Ha-Vikström, T., & Takala, 2016) to structure the research framework. The Competency Motivation Theory emphasizes on the element of competence in police officers. This element requires the direct involvement and support of department heads and supervisors. This theory sees organizational support as an essential element in determining employee competencies, not just employee strategies in ensuring career development.

The primary purpose of this study is to look at the relationship between self-resilience in leadership and the quality of competence possessed by police officers in the Selangor contingent. Past studies on security forces have shown that the competency assessment elements for the career development of police officers are highly dependent on reputational factors or good relationships with superior officers (Haase, 2007). This statement is supported by Tasriff et al. (2016), and Mahmood et al. (2018) who mentioned that employee competency profiles are based on individual strategies instead of strategies undertaken by organizations. Organizations therefore need to implement additional strengthening on their organizational strategy in order to ensure that their employees' competencies are at the best level (Tasriff et al., 2016; Mahmood et al., 2018). Although this study is not the first conducted on the police profession, it still has its attraction as it involves the competency levels of PDRM police officers, the principal enforcement agency in Malaysia that is constantly faced with various pressures and unforeseen situations. Based on the existing gaps identified above, the authors propose the following competing hypotheses:

H1= There are significant differences in the impacts of leadership quality, competency, and self-resilience on the level of education

H2= There are significant differences in the impacts of leadership quality, competency, and self-resilience on the year of service

H3= There are significant relationships between leadership quality, competency, and self-resilience

2. Methods

The study was conducted at the Serdang District Police Headquarters, Selangor since the number of public officers in the Serdang District Police Headquarters are greater compared to other districts in the State of Selangor. The total population of police officers in Serdang Districts are 1100. This study used the quantitative research approach and stratified random sampling method to ensure that the selected sample reflects the characteristics of the population studied. Sample selection was conducted on police officers with the ranks of ACP up to Konst/S. The sampling was randomly carried out using a simple computerized random number. Data were collected using a questionnaire distributed via Google Form. The researcher managed to collect data around 105 respondents. The dependent variable in this study is competency, while the independent variables are leadership quality and self-resilience. There were three sets of instruments used to measure every variable; the first is the Career Competencies Indicator (CCI) instrument which involves measuring the competencies of police officers, while the second is the Multiple Leadership Questionnaire (MLQ) which measures leadership quality. Additionally, self-resilience was measured using The Connor-Davidson Resilience Scale (CRQ) from the perspective of department heads and supervisors. A five-point Likert scale was used as the answer scale for all instruments. The questionnaire contains 66 items and is divided into 4 sections namely Section A (Demographics), Section B (21 items from the CCI), Section C (20 items from the MLQ), and Section D (25 items from the CD-RISC). After the data collection process, the findings of this study were then analyzed using SPSS version 26.0. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to fulfil the determined objective. Inferential analyses such as the independent t-test and ANOVA were used to determine any differences between the sociodemographic variables. Pearson correlation was used to determine whether there are relationships between variables. Table 1 shows the results which prove the high reliability of instruments measuring the variables. Competency, leadership quality and self-resilience demonstrated high values of Cronbach alpha ranging from 0.987 to 0.989. These numbers reveal that items employed in this study possess high internal consistency as each set of items are closely related to each other as a group.

Table 1. Reliability test

Variable	Cronbach Alpha, α
Competency	.987
Leadership Quality	.989
Self-Resilience	.987

3. Results

3.1 Respondents' Demographics

The demographic profile of the selected sample population included age, rank, level of education, and years of service. The sample was spread out among all age groups: ages 21-30 had 26 respondents (24.8%), ages 22-24 years had 45 respondents (42.9%), 25 respondents (23.8%) were between 25-29 years old, and 9 respondents are aged 51-60 (8.6%). Among these respondents, 47 (44.8%) are INSP/P - ASP, 36 (34.3%) are Kongs/S – KPL, 16 (15.2%) are Sarjan, 5(4.8%) are DSP-SUPT, and 1(1%) is ACP and above. Regarding the respondents' level of education, an almost equivalent number represented all categories - 56 (53.3%) possess tertiary education certification, while 80 (46.7%) finished their secondary education. In terms of years of service, 42.9% (45) have less than 10 years of service, 30 (28.6%) have between 11-20 years of service, and 26 (24.8%) have 21 years and above.

Table 2. Demographic Respondents

Variable	Frequency (n)	Percentage (%)
Age		
21-30 years old	26	24.8
22-24 years old	45	42.9
25-29 years old	25	23.8
51-60 years old	9	8.6
Rank		
Kongs/S - KPL	36	34.3
Sarjan - SI	16	15.2
INSP/P - ASP	47	44.8
DSP - SUPT	5	4.8
ACP and above	1	1
Level of Education		
Secondary	49	46.7
Tertiary	56	53.3
Years of Service		
10 years and below	45	42.9
11-20 years	30	28.6
21 years and above	30	28.6

3.2 Respondents' Levels of Leadership Quality, Competency, and Self-Resilience

The results shown in Table 3 prove that most respondents have high levels of competency, leadership and resilience as these elements accounted for 85.7%, 76.2% and 89.5% of the respondents, respectively. These results indicate that there exists high levels of competency, leadership and resilience amongst the police officers of the Klang Valley area.

Table 3. Summary of Descriptive Analysis

Variable	Frequency (n)	Percentage (%)	Mean	SD
Competency				
Low	7	6.7	4.061	0.885
Moderate	8	7.6		
High	90	85.7		

Leadership					
Low	7	6.7			
Moderate	18	17.1	3.961		0.924
High	80	76.2			
Resilience					
Low	6	5.7			
Moderate	5	4.8	4.119		0.851
High	94	89.5			

3.3 Comparison of Competency, Leadership and Resilience for the Different Levels of Education Groups Using the Independent Sample T-test

One of the focal points of this study is to inspect if there is any relationship between the respondents’ level of education with competency, leadership and resilience. Based on the independent sample t-test performed in Table 4, the results conclude that there is no significant difference found between competency, leadership and resilience and the respondents’ level of education. The results of the findings contradict the findings of previous studies done by Freifeld (2013), Mansor et al. (2015), and Dimopoulos (2020), who asserted that the quality of a leader is seen in career experience as it is able to contribute to producing the best performance and achievement in an organization.

Table 4. Comparison of competency, leadership and resilience for the different levels of education groups using the independent sample t-test

Variables	Level of education	n	Mean	t value	p
Competency	Secondary Education	49	3.909	-1.667	0.099
	Tertiary Education	56	4.195		
Leadership	Secondary Education	49	3.855	-1.095	0.276
	Tertiary Education	56	4.053		
Resilience	Secondary Education	49	3.953	-1.890	0.062
	Tertiary Education	56	4.264		

Mean scores are based on a Likert scale of 1 – 5, where 5 is the highest.

Significance at the 0.05 level (2-tailed).

3.4 Comparison of Competency, Leadership and Resilience for Differences in Length of Service (Years) Using the ANOVA Analysis

The length of one’s service has become a major thing in almost every issue, including competency, leadership and resilience. This study noticed that the respondents’ length of service does not have any significant difference on their competency, leadership and resilience. The result is inconsistent with findings by Freifeld (2013), Mansor et al. (2015), and Dimopoulos (2020) who asserted that a leader’s quality is seen by having the knowledge needed to be able to contribute in terms of giving the best performance and achievement to an organization.

Table 5. Comparison of competency, leadership and resilience for differences in length of service (years) using the ANOVA analysis

Variable	Year	N	Mean	F	p
Competency	10 years and below	45	4.032	0.348	0.707
	11-20 years	30	3.994		
	21 years and above	30	4.173		
Leadership	10 years and below	45	3.794	2.184	0.118
	11-20 years	30	3.928		
	21 years and above	30	4.242		
Resilience	10 years and below	45	4.039	0.704	0.497
	11-20 years	30	4.084		
	21 years and above	30	4.272		

Mean scores are based on the Likert scale 1 – 5, where 5 is the highest.

Significant at the 0.05 level (2-tailed).

3.5 Relationships Between Competency, Leadership and Resilience

Finally, Table 6 presents the Pearson correlations on the elements of competency, leadership and resilience. Notably, the highest positive relationships are observed between leadership and competency, resilience and competency, and resilience and leadership, with r values between 0.791-0.864. These findings coincide with the findings of Ibrahim (2017) who stated that career development strategies are able to determine the culture of organizational development in creating and improving competencies amongst employees to be in line with organizational aspirations. This is to ensure that there are no inconsistencies in work procedures set by the organization, and also to ensure that all employees comply with work procedures that have been set so as to guarantee the best quality of service is given to an organization (Southwick et al., 2017; Dirani et al., 2020).

Table 6. Correlation analysis

	1	2	3
Competency	1.000		
Leadership	0.791**	1.000	
Resilience	0.864**	0.808**	1.000

**Significance at the 0.01 level (2-tailed).

4. Discussion and Conclusion

After presenting the results, you are in a position to evaluate and interpret their implications, especially with Generally, based on this study’s analysis, a majority of the respondents are 22-24 years old, hold the rank of INSP/P, have completed the tertiary level of education, and have 10 years of service. For the correlation analysis, the findings indicate that the relationships between leadership quality, competency and self-resilience are positively significant. The results of this study can be used to further develop ideas related to leadership as presented by Dirani et al. (2020) who highlighted ideas related to the behaviors of organizational leaders and its influence on followers. Ethical leadership indeed plays an important role in influencing the behaviors of police officers to support organizational commitment. Leaders should always provide the space and opportunity in career development in order to enhance the competencies of police officers and allow them to remain relevant (Filstad & Karp, 2020). Dirani et al. (2020) also stated that a characteristic of a quality leader is to have self-resilience which is defined as having a way of thinking that is easily adaptable when in unforeseen situations and is able to make urgent decisions. These important qualities indicate that this element is necessary in addressing the current challenges faced by organizations in crisis situations as these environments are highly unpredictable, even over time. The transformational leadership theory suggests that leaders who exhibit human-oriented behaviors, justice, power-sharing, concern for sustainability, ethical guidance, role clarification, and integrity will be more successful in influencing police officer competence (Filstad, 2020). This study also contributes to knowledge on the theories used, namely the leadership theory and competency theory, which forms the main framework of this study. The findings of this study can also help the PDRM in selecting qualified police officers whose promotions are not only based on seniority but also according to their level of competence. In other words, police officers must be appointed to higher ranks or placements on the basis of their competencies as shown in the findings of Haase (2007), Hoggett *et al.* (2019), and Filstad and Karp (2020) rather than by using current police practices such as ‘taking care of each other’ or reputational factors such as maintaining good relationships with superior officers. Specifically, PDRM can use the findings of this study to plan, build, and improve their career development programs to further enhance the competencies of its police officers. The results can also be used as a guide to improve the quality of service and work among PDRM police officers. It is important to ensure that the services provided by PDRM can be one that brings pride to the country based on an excellent organizational culture that helps form a team that not only prioritizes its customers, but also the performance of the services provided. The study findings also add to the body of knowledge, especially in the fields used by PDRM leadership practitioners and policymakers of the Security and Public Order in Malaysia. Overall, the human-oriented dimension and ethical guidance should be taken as important elements in planning PDRM’s competency management. Although this study is not the first to be conducted in the police profession, it still has its own attraction for the relevant parties to study the issue in more detail as PDRM police officers make up the main enforcement agency in Malaysia which always faces various pressures and unforeseen situations

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The Gender Differences in the Relationships Between Self-Esteem and Life Satisfaction with Social Media Addiction Among University Students

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Abstract

Recent evidence indicates an elevated risk of social media addiction among university students. This research was designed to enhance the understanding of social media addiction among university students by investigating the relationships between self-esteem, life satisfaction, and social media addiction, with the possibility of gender differences in the relationships. 288 university students (103 males, 185 females) from the Faculty of Educational Studies at Universiti Putra Malaysia (UPM) done the Social Media Addiction, Rosenberg Self-Esteem (RSES), and Life Satisfaction Scales. Results showed that self-esteem and life satisfaction accounted for 64% of the total variance in social media addiction. Life satisfaction was a significant factor in increasing the possibility of social media addiction. On the contrary, there were no significant differences in life satisfaction and self-esteem, the latter exhibited no association with social media addiction. Furthermore, males were much more addicted to social media than females. An understanding on gender differences may be helpful for clinicians to expand suitable therapy by taking into account these findings, meanwhile, the statistically significant differences between the variables may contribute to predict student addiction levels in social media. The results of this study are obtained from Malaysian university students and possible generalisation to other populations should be verified by further studies.

Keywords: life satisfaction, self-esteem, social media addiction, university students

1. Introduction

Social media addiction is increasingly recognised as a serious, worldwide public health concern. The overuse of social media has caused a critical issue for the new generation in recent years, especially among university students. An increase in the amount of time and energy spent on social media might lead to an addiction. The growing utilisation of portable electronic devices, for instance smartphones and tablets, has also become one of the reasons why the prevalence of social media addiction is increasing (Yu et al., 2016). Apart from spending a long time on social media, individuals who are addicted to social media will experience disabilities and negative effects in certain areas of life, for instance, leisure, socialising, financial, cognitive as well as physical spheres (Odaç & Çelik, 2017). Excessive use of social media causes behavioural addiction, detachment from real life, decline in academic achievement, cyberbullying, and a host of other social and mental abnormalities (Prabhakararao, 2016). Likewise, intrapsychic conflicts are common among those who are engaged in social media, e.g. modification, and interpersonal conflicts, e.g. relationship problems (Griffiths & Kuss, 2017).

The usage of social media had a notable increase globally due to the COVID-19 lockdown period in 2020, involving a total of 3.96 billion users and approximately 51% of the world's population (Hootsuite & We Are Social, 2020). Looking back to Malaysia, social media users increased 4.1% from the previous year, which approximately reached 26 million users (Hootsuite & We Are Social, 2020). A research done by Gao et al. (2020) during the pandemic of COVID-19 in Wuhan, China illustrated that mental health problems was highly associated with exposure to social media. The more frequently the users engage in social media, the higher the prevalence of detected mental health problems. Despite the fact that the consequences of social media have been widely reported, some researchers have argued that social media use is not predictive of mental health issues (Berryman et al., 2018).

According to Malaysian Communications and Multimedia Commission (MCMC) in 2020, there were 88.7%

Internet users reported in Malaysia and most of them were 20 – 25 years old, occupying 34.1% of the total, which became the highest number of users as compared to other age groups. The age range of university students is between 19 and 23 years old which belongs to the 20s group. They are labelled as heavy social media users. Overuse of social media can be more troublesome for youth because their intellect and interpersonal skills are still emerging (Hilliard, 2020). The average daily social media consumption time is 2 hours and 58 minutes for Malaysians, with an average of 8 hours and 5 minutes daily consumption time on the Internet (Hootsuite & We Are Social, 2019). The activities in social media may allow individuals to induce mood modification or bring them a pleasant feel (Griffiths & Kuss, 2017). They will normally increase the amount of time and effort in social media in order to achieve and keep the pleasant feel. The inability to monitor the excess usage of social media has contributed to a range of negative effects, for example decline in academic performance, inappropriate interaction between students and teachers online, and cyberbullying (Lau, 2017).

The relation between social media addiction and self-esteem has been widely researched (Bozoglan et al., 2013; Andreassen et al., 2017; Hawi & Samaha, 2017; Ahmad et al., 2018; Hou et al., 2019). A cross-sectional study done by Andreassen et al. (2017) with a large number of samples in Norway demonstrated that lower self-esteem is associated with higher scores of addiction. The findings indicated that people used social media in order to attain higher self-esteem or escape from lower self-esteem. According to Bozoglan et al. (2013), lower self-esteem was found to affect the addiction, which increased the screen time in social media. In line with the studies above, Hawi and Samaha (2017) concluded that the addiction was reported to be negatively correlated with self-esteem and the latter became the mediator of the connection between addiction to social media and life satisfaction. Self-esteem and social media addiction have an unambiguous relationship. The study carried by Hou et al. (2019) among 232 students found that the connection between social media addiction and psychological well-being was mediated by self-esteem. Results in that study indicated that lower self-esteem was partly responsible for the negative relationship between the two stated variables.

The findings in previous studies indicated the negative association between self-esteem and social media. Other researchers, however, who looked at the relationship between these two variables among 240 private university students in Klang Valley, Malaysia, found a positive association among them (Ahmad et al., 2018). These intriguing findings highlight the relevance of social media in boosting self-esteem, with social media assisting students in doing so. Students with a higher level of self-esteem indicate to consume more time on social media because they are frequently exposed to pictures of others and feel satisfied with themselves.

Life satisfaction is also closely related to the addiction on social media among the youth. A number of authors have reported analyses of trends in life satisfaction and social media addiction that demonstrated different findings. A descriptive study performed by Sahin (2017) reported that university students with less satisfaction towards life were more easily addicted to social media. In the same vein, Longstreet and Brooks (2017) in their research noted that the two variables were negatively correlated. The findings showed that the more students were addicted to social media, the less happy they were with life.

On the other hand, a research done by Bozoglan et al. (2013) among 384 university students argued that there was no connection between addiction and life satisfaction. Life satisfaction only affected the addiction via loneliness and self-esteem. Similarly, Hawi and Samaha (2017) found no direct connection between social media and life satisfaction, as the latter served as a structure for accessing the overall quality of life. However, Zhan et al. (2016) pointed out a different view, which concluded the positive association among social media and life satisfaction. The study claimed that social media provided social benefits to students, which would make them have a positive evaluation of their life. The contradicting results between these studies had yielded the interest for the current researcher to study the connection among life satisfaction and social media addiction; and this research gap should be filled.

Until date, numerous studies conducted to demonstrate the prevalence of social addiction among Malaysian university students and the data indicated that almost half of the students who are addicted to social media spend more than two hours on social media for various reasons (Moghavvemi et al., 2017). Zaremohzzabieh et al., (2014) revealed 3 themes of social media addiction which is: compulsion to check social media, high frequency usage and using social media to avoid offline responsibility. Many past research, however, have not prompted linear associations between self-esteem, life satisfaction, and social media addiction among Malaysian university students, and have also ignored the possibility of gender differences in the associations. Therefore, the precise mechanism that accounts for self-esteem and life satisfaction with social media addiction remains to be delineated. Consequently, this study is designed to examine the possible effect of gender differences in the links between self-esteem and life satisfaction in connection to the addictive level in social media among Malaysian university students. The objectives of this study were stated as follow:

- i. To investigate the gender differences in the relationship between life satisfaction and social media addiction level in university students.
- ii. To investigate the gender differences in the relationship between self-esteem and social media addiction level in university students.
- iii. To investigate the gender differences in the relationship between life satisfaction and self-esteem in university students.
- iv. To investigate the statistically significant relationship between life satisfaction, self-esteem, gender, and social media addiction level.

2. Method

2.1 Research Design

This study was carried in a correlational way. A questionnaire was used to obtain quantifiable data. This study was best suited with the intent of correlational research to illustrate the connection in university students with life satisfaction and self-esteem towards social media addiction.

2.2 Population and Sample

The sample size was decided based on Krejcie and Morgan's (1970) table. In the Faculty of Educational Studies, Universiti Putra Malaysia (UPM), 291 students out of 1,291 undergraduate students were selected randomly to answer the questionnaires.

2.3 Instrumentations

Demographic data of the respondents were collected in the designed demographic form. Using the already developed tool via Google Form, data for life satisfaction, self-esteem, and level of social media addiction of the respondents were gathered. The respondent's demographic information consisted of gender and age. The remaining parts were made up of the Satisfaction with Life Scale (SwLS), Rosenberg Self-Esteem Scale (RSES), and Social Media Addiction Scale-Student Form (SMAS-SF). The estimated time to complete this survey was approximately 5-8 minutes.

Life satisfaction of respondents were measured using SwLS, which was developed by Diener et al. in 1985. The purpose of SwLS is to justify the level of satisfaction with the life of individuals. It contained five items rated on a 7-point Likert-type scale. The respondents were required to rate from the range of 1 (which presented strongly disagree) to 7 (which presented strongly agree).

The self-esteem of the respondents was evaluated by the RSES scale, which was developed by Rosenberg in 1965. RSES contains five positively and negatively worded items. Data would be coded on a 5-point Likert-type scale ranging from 1 (which represented strongly disagree) to 5 (which represented strongly agree). Ten items were examined in the scale. RSES allows respondents to deal with general feelings about themselves. The highest score that can be obtained is 30, whereby higher scores indicate higher self-esteem.

SMAS-SF is a newly developed assessment scale from the Social Media Addiction Scale (SMAS) by Sahin in 2018. It is designed specifically for university students to assess the extent of social media addiction. SMAS-SF consists of 29 items. Tolerance, communication, problems, and information were tested in virtual context based on the assessment. The assessment included a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). All items in the assessment were positive and 145 is the highest point that respondents could obtain. Positive points are connected with the addiction.

2.4 Pilot Test

In this study, a Cronbach's alpha coefficient test was conducted three months prior to the data collection. As a rule of thumb in the research field, the typical number of samples to collect data from is accumulated to 30. A Google form is created and distributed to 30 respondents to answer. 30 undergraduate students of the Faculty of Educational Studies, UPM filled in the online questionnaire. The reliability of each scale is being tested with Cronbach alpha coefficients to see whether they are reliable. According to the rule of thumb for interpreting alpha coefficients for Likert scale questions, it was reported that the three variables had good internal consistency. All of the values were above .7 with life satisfaction (.78), self-esteem (.81), and social media addiction (.96). The scale used for each variable was consistent and reliable based on the result obtained.

2.5 Data Analysis

After the data in Google Form were obtained, the needed data were conveyed to the Statistical Package for Social Science (SPSS) version 22, which is widely used by quantitative research researchers. The correlation

coefficient produced in decimals after the variables were correlated was somewhere between 0.00 and +1.00 or -1.00. The coefficient was then checked. An independent sample T-test was performed to assess if there was a significant difference between males and females in terms of life satisfaction, self-esteem, and social media addiction. Meanwhile, multiple regression was employed to examine how well life satisfaction and gender could predict social media addiction in university students.

3. Results

Table 1 shows the variables that were measured in the study. The variables included gender and age of the respondents, median of self-esteem, and median of social media addiction. Descriptive statistics and inferential statistics are discussed and tabulated in the following table.

The number of female respondents surpassed male respondents, with 185 (64%) females and 103 (36%) males. 14% of the respondents were aged 19, 7% of the respondents were aged 20, 55% of the respondents were aged 21, 6% of respondents were aged 22, and 19% respondents were aged 23. The number of respondents aged 21 was accounted for as the highest of the total.

Table 1. Descriptive statistics of the respondents

Variable	n	%
Gender		
Male	103	36
Female	185	64
Age		
19	40	14
20	19	7
21	160	55
22	18	6
23	54	19

Table 2 details the mean scores and standard deviation for life satisfaction, self-esteem, and social media addiction. The mean of life satisfaction was 24, which indicated the respondents were slightly satisfied with their life. The self-esteem of respondents achieved a median of 17, which elicited the average level of self-esteem for respondents was slightly above average. Meanwhile, the median of social media addiction was 82, which elicited that the average level of social media addiction for respondents was slightly above average.

Table 2. Mean scores and standard deviation for life satisfaction, self-esteem, and social media addiction.

Variable	Median
1. LS	24
2. SE	17
3. SMA	82

Note. LS=Life satisfaction, SE=Self-esteem, SMA=Social media addiction

The correlation between life satisfaction, self-esteem, and social media addiction is demonstrated in Table 3. The life satisfaction and addiction obtained a correlation coefficient ($r = \text{of } .121^*$, $p < .005^*$) with a significance of .039. The association between these two variables was weak. The coefficient of correlation between self-esteem and addiction was $-.013$ with a magnitude of .826. This result revealed that the relationship was not significant. The association between the two independent variables indicated a close relationship, with a correlation coefficient ($r = \text{of } .505^{**}$, $p < 0.01^*$), significant at .000.

Table 3. Correlations between three major variables

	1	2
1. SMA		
2. LS	.121*	
3. SE	-.013	.505**

The analysis of gender differences on self-esteem and social media addiction in Table 4 presented no significant

difference in the respondents' gender on self-esteem, $t(203) = 1.26, p = .210$ and life satisfaction, $t(289) = 1.36, p = .174$. On the contrary, male respondents ($M = 87.28, SD = 21.86$) were significantly different from females ($M = 77.80, SD = 21.13$) on social media addiction, $t(289) = 3.64, p = .000$.

Table 4. (t) test results for the differences between the mean score of the genders on the variables

Variable	Gender	M	SD	t	df	Significance
1.LS	Males	23.47	5.40	1.26	203.30	.210
	Females	23.67	4.90			
2.SE	Males	17.17	3.85	1.36	289	.174
	Females	16.52	3.91			
3. SMA	Males	87.28	21.86	3.64	289	.000**
	Females	77.80	21.13			

Note. * $p < 0.05$, ** $p < 0.01$.

Table 5 presents the combination of variables that predicted social media addiction from life satisfaction, self-esteem, and gender, which was found to be statistically significant, $F = 6.54, p < .001$. Life satisfaction, self-esteem, and gender significantly predicted social media addiction. The adjusted R^2 value was .054. This indicated that 5.4% of the variance ($R^2 = .064; F(3, 287) = 6.54, p < .001$) in social media addiction was explained by the model. According to Cohen (1988), this is a small effect size. Life satisfaction and gender statistically predicted social media addiction.

Table 5. Model summary for life satisfaction, self-esteem, and genders predicting social media addiction

Variable	B	SEB	β
LS	.689	.283	.161*
SE	-.621	.371	-.111
Genders	-9.33	2.60	-.206*
Constant	81.77	6.82	

Note. * $p < .05$

4. Discussion

According to the tabulated research findings, the life satisfaction and social media addiction in university students had a substantially positive relationship. Surprisingly, the results indicated there was a positive relationship between the level of life satisfaction and addiction to social media. The positive relationship between life satisfaction and social media addiction marks a contradicting result with the previous studies. Most of the previous findings observed there was a negative relationship or no relationship between the two stated variables (Buda et al., 2020; Sahin, 2017; Longstreet & Brooks, 2017; Hawi & Samaha, 2017; Bozoglan et al., 2013)

A possible explanation for this might be that the respondents in this study achieved life satisfaction through social media. University students had been restricted from returning to university since 2020 due to covid pandemic and the implementation of Movement Control Order (MCO) in Malaysia. These results may be attributed to the fact that the students rely on social media to study, interact with lecturers and friends, maintain relationships with each other, as well as expand their social environment. These online activities contributed to their sense of identity and belongings in life. Their satisfaction with life increased when the social support they perceived through online was more than offline (Zhan et al., 2016). Also, this condition would happen when the students garbled their real life with social media (Aksoy, 2018).

Furthermore, the results indicated the connection between self-esteem and addiction to social media did not exist. This finding was unexpected because most of the previous research specified a negative correlation between these two variables (Ahmad et al., 2018; Hawi & Samaha, 2017; Andreassen et al., 2017; Bozoglan et al., 2013) This result has not previously been described in the literature. The researcher attributed this result could be explained by both the level of addiction and self-esteem of the respondents in this study is moderate. The result

could be different if the research was implemented for students who have been identified as addicted to social media. The current research might produce the first empirical finding that self-esteem has no association with addiction to social media, but there are other variables such as fear of missing out, sense of belongings, loneliness or eagerness to get attention from others.

According to the tabulated research findings, males did not differ significantly from females on life satisfaction, $p = .210$ and self-esteem, $p = .174$. The obtained result was similar to several previous studies that revealed there were no gender differences in both variables (Joshi, 2018; Chang et al., 2017; Jovanović et al., 2017). While a few studies presented that gender differences did take place (Cabras & Mondo, 2017; Al-Attayah & Nasser, 2016). Gender differences might be affected by several factors, for instance background, race, ethnicity and socio-economic status of the respondents. On the other hand, the average scores of social media addiction on males and females revealed significant differences, in which the average score of female respondents, $m = 77.80$, was significantly lower than the score for males, $m = 87.28$. Similar findings were also discovered in previous research, which reported gender played an important role in developing social media addiction (Andreassen et al., 2017; Salarvand et al., 2018; Azizi et al., 2019; Simsek et al., 2019; Steinsbekk et al., 2020). Most of the findings illustrated that females tended to have higher scores in addiction than males (Andreassen et al., 2017; Simsek et al., 2019; Steinsbekk et al., 2020). On the contrary, some studies that included Iranian university students found males scored a higher level of social media addiction as compared to females (Azizi et al., 2019; Salarvand et al., 2018). The findings in this study might lead to a cross-cultural discussion that Malaysian students are similar to Iranian students, in which the prevalence of social media addiction level in males is higher than in females.

Based on the charted research findings, the combination of variables to predict social media addiction from life satisfaction, self-esteem, and gender was statistically significant, which indicated that 5.4% of the variance in social media addiction was explained by the model. Most of the current studies only predicted one variable from another and no single existing study adequately predicted the variable model. Although the findings on the present model indicated a small effect size, it is acceptable in psychological research as well as the effect under investigation can make itself be felt over time (Abelson, 1985). Future research

There has been a limited amount of research in Malaysia on social media addiction and life satisfaction towards students. These results supported the first milestones of Malaysia's toward identifying, monitoring, and preventing social media addiction. The present results are significant in at least two major respects, namely the relationship between the two variables, and the predictor variables for social media addiction. Identifying the predictor variables and reasons buried under the addiction is a must before the research can proceed to the practical aspect, for instance, counselling services and prevention programmes, which will be discussed in the practical implication. As knowledge expands, the roots and effects of social media, as well as the possibilities to control its occurrence and prevent its negative consequences, will be better understood by both counsellors and individuals.

At the same time, the practical implication for this research is the possibility of the relevant prevention programmes and interventions to be discovered. University counsellors may be able to design and implement the relevant prevention programmes, for instance, promote a way to self-check and how to reduce the usage of social media. These prevention programmes allow the university students to be aware of their surfing time on social media and seek help if necessary. Apart from that, the results in this study reflected the level of social media addiction among university students is above average and the addiction will continue to become a massive issue. The development of young adults will affect the global circumferences. It is important to yield the attention of the society to younger social media users before the condition becomes irretrievable. The relevance of gender differences in social media addiction level from this study raises the awareness to pay sustained attention to male students as they achieved a higher addiction level than female students. This point of view is in line with Hawi and Samaha (2017), who expected the problem of social media only to aggravate and has to be investigated from time to time. For this purpose, the present study gives valuable information regarding university students and their pursuit of social media.

Several limitations are also identified. This study is a cross-sectional study in correlational design, which provides the prevailing condition in the targeted population. The cause-effect relationship does not exist. For an in-depth study, a longitudinal study involving the same group of people is needed to detect the developments and changes in life satisfaction, self-esteem, and social media addiction. The unexpected outcome of zero correlation between self-esteem and social media addiction limits the significance of this study. It is recommended to expand the size of the target population to more universities, as well as other faculties, to obtain clearer, representative, and significant findings. Furthermore, future research might need to include the screen time and the type of social media used by the respondents. It would be interesting to correlate virtual tolerance, virtual

communication, virtual problem, and virtual information factors as specified by Sahin (2017). The data obtained from the relationship might help researchers to determine and have a clearer understanding on the directionality of the correlations.

5. Conclusion

With the continued growth of technology, social media addiction among university students will only continue to aggravate. This study's results indicated a weak positive relationship in life satisfaction and addiction and no existence of relationship between self-esteem and addiction. This may bring a new prospect of addiction in the context of Malaysian university students. The relationship between these variables may still need to be investigated in future research. Technology is growing rapidly, and the association between the variables may be weak in this study. Nevertheless, it might change from time to time. A weak relationship might become mild, and a mild relationship could become strong. The age of social media users might become younger and younger as they can easily access social media. Studies concerning life satisfaction, self-esteem, and social media addiction, in other words, still deserve attention. Future research is needed to account for the varying age groups and other potential self- and other-oriented variables such as level of narcissism, cultural effect, and self-efficacy.

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Information and Communication Technologies and Sustainable Livelihood Opportunities: A Study of Information Behavior Among Malaysian Youth

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Abstract

Information and communication technology (ICT) is a significant instrument for youth empowerment, since it allows instant interaction, thus enabling information needs and community development. This study aims to explore the cumulative knowledge on how youths use ICT as an essential part of their daily lives. A quantitative study was carried out and the data were analyzed by the structural equation modeling technique (SEM). The results confirmed that information needs and sharing have a positive influence on the sustainable livelihood of Malaysian youth. However, the findings also reveal that there was no significant relation between two of these predictors (i.e. information seeking and information source) and the sustainable livelihoods of Malaysian youth. Due to its unique perspective, this study contributes to the existing literature on youth information behavior in ICT environments.

Keywords: ICT, Sustainable livelihood, Youth, Information behavior, Malaysia

1. Introduction

Information and communication technology (ICT) is an efficient tool to increase livelihood opportunities. The youth of today have stated that having access to ICT is an important priority in their lives (Brown et al., 2016). This is not surprising; as digital natives in this technological age, youths are assumed to have interest in hi-tech gadgets and the latest technologies. ICT is employed not just as an uncomplicated tool for communication, but also as a method to help them decrease global deficiencies and inequalities in socio-economic circumstances and situations (Sobeih, 2007). It should be noted that ICT can enable youth to access information and knowledge on a range of topics that could directly affect them, such as healthcare, education, and employment. The information enables them to gain employment and advance towards more sustainable livelihoods. Additionally, ICT is used as a solution to gather relevant information for youth marginalization to alleviate poverty, which leads to an investigation into what and how much information is needed.

The nexus of information, such as use, need, searching, storage, and sharing combined with ICT usage, is referred to as information behavior (Fisher & Julien, 2009). According to Williamson and Roberts (2010), information behavior is embedded in social communication with a large amount of information transfer arising from relational communication. Subsequently, the collection and sharing of information are performed in groups, by individuals who provide knowledge with individuals who are reliant on this knowledge. Saunders et al. (2017) stated that this has provoked the term human information behavior, which refers to the behavior of people who nourish their information needs by seeking and sharing information.

Indeed, information behavior shows that the growth of ICT has influenced information access through the use of ICT by youth, since they consider ICT to have all the information they require. In an online context, youth information behavior research aims to capture a variety of young engagements in information activities for a variety of livelihood purposes. The advancement of ICT has offered a view that youth have come up against a situation where they are faced with information and therefore have evolved into a more knowledgeable society. Currently, knowledge is power. To generate a knowledgeable and well-informed society, there should be enough

foundations or channels to access that knowledge. The community is continuously viewed as having updated knowledge and information, enabling them to easily access information. Nowadays, the younger generation spends a considerable amount of time on ICT usage (Silva et al., 2018); hence, it has been a key interest to investigate youth's information behavior by using it. In recent years, a number of studies have looked into the youth's long-term sustainable livelihood in Malaysia (e.g., Soh & Omar, 2017). There have, however, been no studies explicitly looking at the information behaviour of Malaysian adolescents. The current study intends to bridge this gap by examining the relationship between information seeking, sources, need, and sharing, as well as sustainable living. The present study addresses the call for more research to evaluate whether sustainable livelihoods are associated with Malaysian youth information behavior and the extent to which ICT influences such behavior.

2. The Current Study

In Malaysia, 43% of the total population falls under the youth classification (Ming et al., 2012). This population has valuable capabilities and is uniquely beneficial for the growth of the country. They are supposed to drive economic and community developments, especially in low-income households and communities in need of economic development. Despite these high expectations for the Malaysian youth, there are many concerns about their healthcare, well-being, and future direction. Recent local studies have indicated several areas of concern including engagement in at-risk behaviors, healthcare, character development, employability and vocational readiness, development, social isolation, empowerment, and leadership development (Lee, 2012; MYI, 2011). According to Dahalan et al. (2013), the big question on development is whether Malaysian youth have the sustainable livelihood opportunities to function as successful globally competitive adults who not only can survive but also succeed in leading a fully developed Malaysia. Certainly, information is essential for the youth to respond to the sustainable livelihood assets and challenges in their community. They need information for effective decision-making to improve their livelihood activities as well as develop both their community and themselves. Without information, they would remain in the same state without growth or development.

Malaysian youth have identified ICT as a catalyst for change. This includes changes in lifestyle, information handling, and exchange of information, learning approaches as well as developing social and economic conditions (Ahmad et al., 2012). ICT usage can assist youths to access knowledge and information on selected subjects that significantly affect them, such as education, well-being, healthcare, and services. Additionally, ICT may benefit them and lead to sustainable livelihoods through the acquisition of required information and knowledge. Their building capacity depends largely on the amount of information they can capture via technologies. As youth accumulate increasing amounts of information, they can respond to external stimuli more quickly and effectively, therefore transforming to improve their sustainable livelihood and communities. Accordingly, they require, search for, and use information in all aspects of their livelihood activities. At this point, their information activities, along with their ICT usage, must change to a new reformed structure by passing through information needs, searching, and related behaviors; thus, the developing role of information is directed to a new rationale for the purpose and meaning of ICT in the Malaysian society.

In recent times, studies that highlight the effects of ICT on sustainable livelihood in communities have grown in number (Blake & Garzon, 2012; Kivunike et al., 2013; Makoza & Chigona, 2012; Sæbø & Thapa, 2012). Some studies also revealed that information access attained through ICT usage offers social and economic empowerment to all, including deprived populations, improved their skills, and connected many institutions that were involved in sustainable livelihoods (Mbuyisa & Leonard, 2017). Adera, Waema, and May (2014) argued the value of ICT as a component to eradicate poverty when the possible information was recognized as an intentionally growing source that must be merged as a regular component of the development planning practice. Many researchers have also applied the sustainable livelihood (SL) framework, which only provided an image of the needs and problems of such communities, and focused on what marginalized people lack. In the context of information technology, the SL framework also ignored initiating factors of information knowledge and communication. Besides, the persistent view has been that ICT did not directly influence the SL framework (Gigler, 2014). It is then appropriate for us to explore the unique ways in which ICT is employed to address the main catalysts for information and knowledge that depicted the ICT roles in the lives of Malaysian youth. Thus, this study aims to fill the knowledge gap in this area of research by gaining a deeper understanding into the information behavior factors that potentially influence the sustainable livelihood of Malaysian youth.

3. Literature Review and Hypothesis Development

Based on previous studies, this study provides an account of how ICT was employed by youths to enhance information as an imperative part of their daily lives. Additionally, the study emphasizes the positions of four

predictor sub-groups, namely, information source, information seeking, information need, and information sharing.

3.1 Information Source

Young people use information frequently as part of their daily lives. Information linked to work, leisure, household, wellbeing, income and a host of other subjects, is sought from a wide range of information sources. In this study, an information source refers to something that stores information. Recently, a number of these sources are becoming increasingly digitalized and youths now are especially exposed to the rich graphic information provided by digital media. A growing number of studies indicate that youths team up to solve problems using Wikipedia and different reality games as well as share and circulate information by YouTube, social networking sites (SNSs), podcasting, and photo sharing sites (Kirschner & De Bruyckere, 2017). In addition, Sarka and Ipsen (2017) described that Generation Y grew up alongside the World Wide Web (WWW) and that the Web was raised with Generation Y. Other studies showed that Generation Y students grew up around the Internet and the Web at a very young age (Kim, 2018). In Malaysia, there has been a massive fall in the proportion of youth who do not use Internet access for seeking information in the past five years, from 67 percent in 2007 to 2 percent in 2012; this implies how fast Malaysian youths have evolved to utilize the World Wide Web as an information source (Ming et al., 2012). Also, the results of the previous study provide us with evidence that Malaysian young adults aged 20 to 24, also known as Generation Y use the Internet and social media technologies for teaching and learning processes as well as sharing information. Additionally, they are aware of and interested in social and political issues around them (Yusop & Sumari, 2013).

The Malaysian Youth Index (2011) indicates that the Media Penetration score of 87.4 for 2011 was a little higher than the 2006 score of 84.8 and 2008 score of 85.0. Malaysian youth continue to be vastly involved with media and ICTs of dissimilar types. For instance, scores for the traditional forms of media such as TV, radio, newspaper, and computer remained high but quite unchanged as compared to 2006 and 2008, showing that the younger generation still depends on them as vital sources of information. However, Internet use revealed significantly higher scores than the previous Index, showing the stable growth of youth exposure to global media and ICT.

Thus, the study of the relationship between development and ICTs has currently been redeployed to evaluate if there is a causal connection between information sources and youths' sustainable livelihood. It has been recognized that maximizing the advantages of the use of information sources may ease the achievement of development causes (Brown & Grant, 2010).

3.2 Information Seeking

The present study discusses the information-seeking process as a part of the larger information behaviors of youths with regards to their livelihood opportunities and does not attempt to consider it separately. Information seeking is one of the most common online activities for young people and can lead to extra information networks, which may develop their sustainable livelihood. Information and knowledge-seeking among youth have varied significantly as they wish to pursue virtual information (Omar et al., 2012). Youths use ICTs to search for information about livelihood opportunities available to them. According to Jayasundara (2021), it is the main activity of life and people seek information to broaden their understanding of the world around them. In addition, many academic disciplines are concerned with understanding how people search, the ways used to get access to all information, and reasons that restrain or inspire information-searching behavior. Johnson and Case (2012) illustrated information-seeking as a mindful attempt to obtain information as a reply to a need for information. Kassim and Katunzi-Mollel (2017) also explained information-seeking as a way of recognizing, selecting, and placing the possible information sources that could fulfill the information needs of a person. Adeola (2014) stated that it is a technique that ICT users can use as both senders and receivers. In this study, the greatest important feature when seeking information, sources of sustainable livelihood information concerning their usefulness and relevance to the youth work are required for information seeking.

3.3 Information Need

Facts of the information behavior suggested that ICT development has influenced access to information in the manner that young people use ICT since they consider ICT to have all the info they need. The need for info is one of the reasoning needs of humankind. According to Agarwal (2017), information need is frequently recognized to originate from an unclear realization of something required and as settling in placing the info that is a factor to recognition and comprehension. Thus, it takes into account that there is a condition to know the users' needs for the aim that the origin of any information behavior is understood to be the idea of information need. It is divided into many groups including the need to explain the information gained, the need for new information, and the need to verify known information (Cerdan et al., 2017).

For marginalized populations like youths in growing nations, information needs can affect not only their way of life but also their existence. As a result, it's critical to look at the intricate relationship between information needs and the survival of local communities. Young Malaysians who have access to the proper information can develop the skills, knowledge, and confidence they need to actively engage in community affairs. Furthermore, as ICTs become more widely available in Malaysia, further research is needed to examine how these newer information resources are enhancing the unique information requirements of young Malaysians. As a result, a better knowledge of youth's ability to use ICTs at various levels is critical for identifying appropriate methods and organizations for the transmission of important information.

3.4 Information Sharing

The livelihood information system must be able to communicate information horizontally across communities at the same level as well as vertically between communities at other levels. Vertical systems perform well among a few highly incorporated communities with compatible information systems (Duncombe, 2014). Horizontal systems succeed in settings where numerous diverse communities form a frequently changing network of followers who desire to share actual certain information (Duncombe, 2014). In today's highly networked settings, a new actual model for information sharing is required, with more sharing processes operating in a loose but compatible global information network. It enables the sharing of big quantities of quality data between youths and their communities. Youths need capacity building, not just in using ICTs but in sharing information in a way that assists their livelihoods. The opportunity to reorganize information networking and grow local solutions to the development of problems stems from the possibility of improved collaborations. Community knowledge partnerships can grow around collective objects, and information can be swapped between youths and communities that share these. Partnerships based on information sharing can assist to exceed more formal institutional obstacles to replace. Partnerships can assist to improve a large range of new political, economic, and social networks that can signify different opportunities to youths according to their livelihoods. Information sharing thus signifies a method that provides opportunities to youth and communities. Partnerships can be improved to control these opportunities for short-term and shared benefits or longer developmental term and societal change. Partnerships can also improve methods to deal with the problems of connectivity and incorporate external and local knowledge; can directly benefit marginalized communities, especially youths (Zhan et al., 2016). This method could change the conventional method of a 'one-way' flow of information from a systematic, rich core of information to remote marginalized information communities, with active information-sharing partnerships consisting of a two-way flow of information at every level. The current study sought to examine the following hypotheses.

Hypothesis One: There is a relationship between information sources and sustainable livelihood.

Hypothesis Two: There is a relationship between information seeking and sustainable livelihood.

Hypothesis Three: There is a relationship between information need and sustainable livelihood.

Hypothesis Four: There is a relationship between information sharing and sustainable livelihood.

4. Research Methodology

4.1 Participants and Procedure

In this study, the cross-sectional survey design was used for data collection. A multi-stage random sampling technique was utilized for this research and data was acquired from the four districts of Cameron Highlands, Kuala Perlis, Batu Pahat, and Petaling Jaya located in Peninsular Malaysia. The present criteria for the participants were that (a) they should be ICT users and (b) participants' age must be between 18 and 24 years. According to the Malaysian Youth Council, people aged between 15 to 40 years old can be counted as youths whilst the United Nation and Commonwealth Secretariat have their own criteria as they classify those aged between 18 to 24 years old as youths (Azimi & Zanariah, 2007). A total of 400 questionnaires were distributed among Malaysians of which all 400 valid questionnaires were returned. For the structural equation modelling (SEM) studies, Kline (2016) recommended that 200 or extra participants would be suitable and Ho (2006) recurred that in SEM the sample size must be adequately large. For this study, 400 samples were sufficient to meet the conditions of SEM. All participants were knowledgeable about the aim of the research. Furthermore, they were notified that their responses in this study were completely voluntary and anonymous and that they could withdraw from the survey at any time.

The study employed a quantitative research study via self-administered questionnaires. The data was analyzed using SPSS software, version 21, and Amos software, version 22. Means and standard deviations were then applied to illustrate the five constructs. Besides, the SEM method, i.e., individual constructs, the measurement

model, and the structural model was used to evaluate the direct associations among constructs.

4.2 Research Instruments

In this study, the constructs were assessed on a 5- point Likert scale (strongly disagree to strongly agree). Measurement items relating to each construct were developed based on a review of items in previous studies with proven reliability and validity. Mostly, the reliability of items was proved preliminarily with 40 respondents. Information sources were assessed by a seven-item scale, with Cronbach's alpha value of 0.805 (Hassan, 2011; Ito et al., 2009). Information seeking was measured using a six-item scale, with Cronbach's alpha value of 0.850 (Murgatroyd, 2011). Information need was assessed by seven items adapted from Bashir et al. (2011). The Cronbach's alpha value was 0.768. Information sharing was assessed by a nine-item scale-revised from Chiu, Hsu, and Wang (2011) and Park et al. (2010) and previous literature review. The value of coefficient alpha was 0.80. Lastly, sustainable livelihood was measured with five sub-constructs. The sub-constructs for sustainable livelihood are human, social, financial, physical, and natural assets. Sustainable livelihood items were adapted from Yassin et al. (2014), and Petrosillo et al. (2013), with Cronbach's alpha value of 0.837.

4.3 Ethical Statement

The study was authorized by the ethical committee of Universiti Putra Malaysia (Serdang, Malaysia). The participants were told about the study's goals, as well as the fact that participation was completely voluntary and anonymous, and that they may opt out at any moment. All of the subjects gave their written informed permission.

5. Analysis and Results

A total of 400 Malaysian youths from the four districts participated in this study (male = 61%, $n = 244$, and female = 39%, $n = 156$), aged from 18 to 24 years (mean = 20.76, $SD = 2.25$). With regards to race, the participants were Malay (79.7%, $n = 319$), Chinese (10.5%, $n = 42$), Indian (4.5%, $n = 18$), and others (5.3%, $n = 21$). In addition, in terms of educational achievements and background, 35% ($n=140$) and 3.8% ($n=15$) had obtained education at high school (SPM/STPM) and secondary levels (PMR/SRP/LCE), respectively, while about 1.3% ($n=5$) of the respondents did not have any formal education. 1.3% ($n=5$) of them only completed primary education and 18.8% ($n=75$) had a skill certificate. 21.5% ($n=86$) of the respondents had diplomas and 18.3% ($n=74$) were degree holders.

In addition, data analysis on job status revealed that 8.8% ($n= 35$) of the respondents were working as contract workers and 5% ($n=20$) were self-employed, and 40.7% ($n=163$) had permanent jobs. This result also indicates that most of the respondents were unemployed and made up 45.5% ($n=182$) of the total population. After the respondents were requested to provide their demographic information at the beginning of the survey, they were asked about their access to the Internet at home and to identify the type of Internet connection provider. The result displayed that almost all respondents who took part in the study indicated that they had access to the Internet. 65% ($n= 260$) of them said they had a wireless connection, while 16.8% ($n= 67$) used ADSL connection, 7% ($n=28$) used cable to access the Internet at home and 2.2% ($n=9$) used fiber optics to have Internet access. Only 6.5% ($n=26$) and 2.5% ($n=10$) reported being connected at the public center and using satellite, respectively. Notably, wireless was the most widely used connection among these youths with ADSL connection also being significant.

In developing the validity of the overall measurement model, the study recognized five latent constructs, and the measured items were assigned to these latent constructs. However, the sustainable livelihood construct was examined by a CFA parceling (sums or averages of items) approach because the construct had multi-item scales. A CFA parceling method was implemented to decrease the number of items as fit statistics is influenced by the number of items (Shi et al., 2019). Furthermore, Yang, Nay, and Hoyle (2010) stated that the parceling method has been understood to be necessary when there are more than 12 items in a construct and the indicators reflect a one-dimensional construct. Thus, this study considered the sustainable livelihood constructs as a five-factor scale, with subscales measuring human, social, financial, natural, and physical (Zaremohzzabieh et al., 2014). The construct reliability was measured by studying the item and composite reliabilities. Instead of composite reliabilities, this study stated Cronbach's alpha values as implied in Table 2. In this study, the convergent validity along with the discriminant validity was considered to assess the measurement validity. The convergent validity was proven by assessing the average variance extracted (AVE), which implied the total of variance clarified by a latent construct. Table 1 illustrates that the convergent validity for all constructs met the minimum criterion of 0.50, signifying that all the separate constructs clarified the amount of the variance. In this study, the results revealed that the five constructs displayed adequate discriminant validity and a possible difference among the variables and constructs; meanwhile, Table 1 shows that the AVE for five constructs was greater than the squared coefficients (r^2) for each pair.

Table 1. Construct inter-correlation, mean, and standard deviation.

	1	2	3	4	5	Mean	SD
1. Information Sources	0.50					3.54	1.069
2. Information Need	0.292	0.519				3.45	0.639
3. Information Seeking	0.290	0.251	0.507			3.82	0.737
4. Information Sharing	0.287	0.162	0.242	0.574		3.22	0.797
5. Sustainable Livelihood	0.282	0.178	0.228	0.552	0.544	3.435	0.563

Note. The square roots of the average variance extracted (AVE) are the diagonal elements (in bold). Correlations between constructs are off-diagonal elements. The diagonal elements should be bigger than the off-diagonal elements for discriminant validity

Table 2. Measurement model resulting from CFA.

Constructs and indicators (items/parcels)	Standardized Factor Loading	AVE	Composite Construct Reliability	Cronbach's Alpha
Source of Information		0.500	0.833	0.805
Digital books ^b	—			
Search Engines	0.712			
Multimedia production tools (e.g., PowerPoint, video editing, and digital recording)	0.676			
Broadcasting tools (e.g., publish a podcast, upload to YouTube)	0.719			
E-mail	0.723			
Any chatting software (e.g., MSN, Skype)	0.704			
Digital learning games, computer/video games ^b	—			
Information Seeking		0.513	0.754	0.850
Information is instantly accessible. ^b	—			
Low-cost information is accessible (or free) ^b	—			
The information is current. ^b	—			
From my PC, I can access and download the information.	0.536			
A recognised expert or authority has authored or supported the content.	0.827			
To suit my information needs, the data has been packed and filtered.	0.753			
Information Need		0.520	0.811	0.768
Always the information needs of local users are made accessible online	0.697			
The online information on livelihoods is up to date	0.814			
The information on the Web page about livelihoods is adequately available.	0.704			
The information is more relevant to the livelihoods of local communities	0.660			
Livelihoods information provided is locally useful and valuable. ^b	—			
Useful information on livelihoods is only available in the English language. ^b	—			
I trust the information that I received from ICTs is reliable and accurate ^b	—			
Information Sharing		0.573	0.923	0.80
In online communities, I frequently share livelihood information with others	0.691			
I am one of the active participants and contributors in online communities	0.773			
I make a conscious effort to spend time being involved in activities that contribute livelihood information to the online community	0.801			
In an online community, I try to create and share livelihoods information with others	0.787			
In online communities, others find my information-sharing contributions to be beneficial.	0.764			
In online communities, my contributions to the livelihood information enable others to create new livelihood opportunities	0.717			
In the online communities, I am a knowledgeable contributor to the sustainable livelihood of local communities	0.788			

In online communities, the information I share with others have a positive impact on their livelihoods and incomes	0.759			
I feel the value of my information-sharing efforts is of larger value to the online community.	0.726			
Sustainable Livelihood		0.533	0.773	0.837
Human asset ^b	—			
Social asset	0.640			
Financial asset	0.790			
Physical asset	0.752			
Natural asset ^b	----			

^a $\chi^2 = 502.181$, $df = 242$ ($\chi^2/df = 2.075$), $p = 0.000$, GFI = 0.872, IFI = 0.927, TLI = 0.916, CFI = 0.926, RMSEA = 0.060. ^b The item was deleted after confirmatory factor analysis

5.1 Structural Paths and Hypotheses Testing

This model includes information sources, information seeking, information need, and information sharing as exogenous variables, and sustainable livelihood as an endogenous variable. First, the structural model was tested for model fit. The results implied a good model fit ($\chi^2 = 502.181$, $\chi^2/df = 242$, AGFI = 0.872, GFI = 0.844, CFI = 0.909, RMSEA = 0.060, TLI = 0.916) with two indices (CFI and IFI) exceeding the cut-off value of 0.90. The RMSEA value was cut to between 0.03 and 0.08, which is within the recommended range of adequate values (Hair et al., 2013). Since the model has displayed a good fit for the data in this study, the results of the hypothesis testing could be measured with confidence. Table 3 presents the path and parameter estimates related to the structure model. Based on the findings, the path coefficients in the model indicate that the relationship between information sources and sustainable livelihood was hypothesized as not significant at $p > 0.05$ (H1). The result also showed that hypothesis H2 was rejected; which assumes no relationship between information seeking and sustainable livelihood. It can be seen from the data in Table 3 that two positive associations exist between information sharing and information need and sustainable livelihood among Malaysian youth. The findings of this study indicate that information sharing and information needs are valuable predictors of sustainable livelihood. These variables explained 59.0% of the variance in sustainable livelihood.

Table 3. Analysis of the structural model.

Hypotheses	Path	Standardized Estimate	Decision
H ₁	Information sources → sustainable livelihood	0.068	Rejected
H ₂	Information Seeking → sustainable livelihood	0.078	Rejected
H ₃	Information need → sustainable livelihood	0.138	Supported
H ₄	Information Sharing → sustainable livelihood	0.611	Supported

$R^2 = 0.59$; ^a $\chi^2 = 502.181$, $df = 242$ ($\chi^2/df = 2.075$), $p = 0.000$, GFI = 0.872, IFI = 0.927, TLI = 0.916, CFI = 0.926, RMSEA = 0.060.

6. Discussion and Implications

The study used ICT to study the information behavior of Malaysian youth. The study aimed to investigate the function of ICT to determine the information behavior of Malaysian youth through its implications on sustainable livelihood opportunities. Four hypotheses were examined in the study. Based on the results, three hypotheses were supported. It was found that information need had a positive and significant relationship with a sustainable livelihood. The findings were consistent with previous studies (Lwoga, 2014; Yohannis et al., 2017). Ahmed et al. (2009) noted that information needs were largely centered on the problems of daily life and the earning of livelihoods. In another study, Khan (1997) stated that young people in the United States and the United Kingdom needed information to improve their lives, which included consumer information, information on transportation, personal finances, time, and weather.

Furthermore, the relationship between information sharing and sustainable livelihood was supported in the present study. The findings demonstrated that information sharing was directly influenced by the youth's sustainable livelihood and this was consistent with previous research findings (Hertzum & Hansen, 2019). This meant that information sharing was one of the most popular online activities for Malaysian youths and can provide an additional information channel, which may enhance their sustainable livelihood. The results also evidently displayed that the youth in this research shared information to resolve their everyday problems. It can

be suggested that they exchanged information to solve their daily problems. The youth requested information from others and were willing to share what they know; thus, increasingly create information collectively or collaboratively. The continuous youth engagement in collaborative problem solving was facilitated by exchanging network-related comments or actions to provide livelihood information (Serrat, 2017). As Avgerou (2010) stated, many telecenter users informally shared the information they found on the Internet with friends or family members, most often about homework, entertainment, or other information needs.

Similarly, Yohannis et al. (2017) established that ICT, such as the telecenters, specified an extra shared space for communities to share information about employment and other accessible opportunities. They allowed information sharing on the main results happening in their communities. The results from previous studies revealed that people used mobile phones to support their business operations in terms of their agricultural production and livestock expansion. For instance, by accessing business information such as prices of materials and services, communicating with customers and suppliers, interacting with business support organizations, and so on (Baro & Endouware, 2013; Makoza & Chigona, 2012; Martin & Abbott, 2011; Sey, 2011; Sife et al., 2010). These studies frequently referred to information flows involved in markets and participants. Another example of the transformative nature of telecenters can be seen in Tanzania, where a country dweller is capable of bargaining with a middleman to get better values and stipulate local products according to marketplace demands, which is made likely by the telecenter staff who provide market information in the local language (Malanga & Banda, 2021).

In contrast, the findings revealed that there was no link between knowledge seeking and sustainable livelihood. While the information was essential to the Malaysian population, the youth were found to be unaware of where to seek information. The results of this study also discovered some problems encountered by youths while searching for livelihood information. These issues, according to Julien (2004), include not knowing where to get information, being overwhelmed by the options, and being unable to articulate a query. Some youths, on the other hand, lacked fundamental critical thinking and information literacy skills. Critical thinking has received a lot of attention in the literature since it is crucial to the learning process and cognitive growth, which includes searching for information. When the Educational Testing Service (ETS) examined 6,300 pupils in a literacy evaluation study, Çoklar et al. (2017) found that they lacked critical thinking abilities. The evaluation was carried out by evaluating students' capacity to identify, access, manage, integrate, produce, and convey knowledge in a high-tech environment using their key skills. Xu and Pratt (2018) argued that youths' critical thinking and cognitive skills were insufficient due to a lack of reading. Young individuals may know how to use a computer, but they may lack information literacy.

Then, the argument made was that youth, who did not use effort to find information, would find it problematic to analyze information critically or select which information to use for their livelihood purposes. While information sources were essential to the youth population, respondents were found to be unaware about maximizing the benefits of increased access to information and a wider choice of information sources that could contribute to livelihood decision-making. Therefore, Hypothesis 1 was also rejected. The independent information behaviors of Malaysian youth were inconsistent with the interaction between today's youth and the digital age information sources. In this way, the features of information behavior in the digital era match the nature of information sources. The youth prefer the dynamic, flexible, and interactive nature of information sources or technologies, which support the patterns of remixing and tinkering with continual modification and extermination (Castells, 2013). In summary, the relation between youth and information sources is reciprocal. The nature of information sources and technologies has an impact in shaping youth information behaviors. On the other hand, Malaysian youth can choose and reproduce based on their needs, and their behavior patterns that lead to the development and thriving of the resources that fulfill the needs; thus, this research offers several practical implications.

From a practical perspective, this study utilized solution modeling and innovative socio-technical design development to tackle the challenges of usability, validity, interoperability, reliability, and reliability of youth-made information under situations of uncertainty. It must also be counted as a standing practice to understand the Malaysian youth and if possible their information needs to design and develop portals, websites, information literacy training programs, online education and training, and web-based information retrieval systems that have become the needs of the youth. As youth further identify the difficulties involved in information searching, information specialists should intervene by directing youth to search for meaning from a greater understanding of the obtained information. Finally, information needs can be amended by providing relevant content in the native language and translating the English or global contents into the Malaysian language. This enables the majority of the youth to take advantage of the obtainable information online.

7. Conclusion

There is no doubt that ICT plays a very important role in all features of Malaysian youth endeavors and that their online information actions have positively impacted the economic, political, and social lives of their communities. The study revealed the link between ICT and information behavior that enables Malaysian youths to explore and enhance the information of how ICT is employed by the youth as an imperative part of their daily lives. Additionally, the position of four predictor subgroups were emphasized, namely, information source, information seeking, information need, and information sharing. Based on the SEM analyses, the findings confirmed that information sharing had a positive influence on the livelihoods of Malaysian youths. The study showed that respondents have a strong need for sharing information and working together in many information activities related to their livelihood needs. These respondents were involved in information behavior more consistently when they felt a sense of community.

In addition, the study results revealed that there was a significant relationship between information needs and the sustainable livelihoods of Malaysian youth. This finding also concluded that information needs can assist youths to obtain information and knowledge on a variety of subjects that clearly affect them, such as education, well-being, healthcare, and employment. Then, the knowledge and information can be applied towards developing sustainable livelihoods. Contrary to our expectations, the results presented that there were no significant associations between two of these predictors (information seeking and information source) and the sustainable livelihoods of Malaysian youth. Overall, 59% of the variance in the sustainable livelihoods of Malaysian youth was accounted for by the predicted variables.

The application of the findings encourages the growth of resource strategies, including ICTs, for young Malaysians to be able to engage in their capacity development towards sustainable livelihoods. This study also contributed to an existing body of literature on youth information behavior in ICT settings from a new perspective. The study results delivered a practical base for the growth of relevant library and information services for youth in modifying information behavior. Additionally, the results are a valuable resource for Malaysian policymakers and information managers by helping them to better comprehend the role and position of information behaviors in supporting the sustainable livelihoods of youths as well as further emphasizing the vital role of this context in ICT. ICTs are essential in ensuring that young people have a secure future. To assist young people in a systematic and successful way, the future studies must establish a clear understanding of ICT plans and their roles in livelihood of young people. ICT initiatives can be created to respond specifically to young poverty and the demand for a sustainable livelihood based on these suggestions. In addition, 41% of variance is not explained by this study and it can be a task for future studies to look for other possible factors that can affect sustainable livelihood.

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Understanding and Readiness in Facing IR 4.0 Future Skills Transformation among UPM Trainee Counsellors

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Abstract

Industrial Revolution (IR) 4.0 refers to the integration of technology within a particular industry, which encompasses big data, data analytics, cloud computing, robots, artificial intelligence, as well as Internet of Things (IoT) technologies. This study aims to assess the understanding of trainee counsellors of IR4.0 future skills, and to investigate how trainee counsellors improve their overall understanding of IR4.0 and its readiness. The qualitative research design employed in this study involved semi-structured interviews. Four trainee counsellors were chosen through convenient sampling and interviewed in 15-20 minute sessions. The findings indicate that trainee counsellors have a strong grasp of IR4.0. The respondents acknowledged, however, that their comprehension of IR4.0 in connection with future counselling professions is only modest, owing to the institution's lack of formal educational exposure. Consequently, the respondents' readiness to face IR4.0 is dangerously low, with the majority expressing worry towards their adaptability in future career development. Finally, the study concluded that educational institutions are vital in teaching and equipping students to confront the global challenges presented by IR4.0. This study is important because it aids researchers to analyse information on the understanding, readiness, and effect of IR4.0 on future skills among trainee counsellors. Additionally, it helps educational institutions in recognising the essential role of IR4.0 adoption in teaching and learning, as well as the implementation of the necessary measures to increase the readiness for training counsellors in tackling IR4.0.

Keywords: Industrial Revolution 4.0, trainee counselors, undergraduates, future skills transformation, future skills knowledge, career transformation

1. Introduction

Industrial Revolution (IR) 4.0, announced by Germany in 2011, was envisioned as automation and data exchange in manufacturing technologies, facilitated primarily by multidisciplinary engineering facilitations that coordinate into a seamless connection. IR 4.0 is crucial in integrating and combining intelligent devices, human actors, and processes across organisational stages to create technological data-driven, systematic, and agile value chains. This may be accomplished by utilising technologies such as cyber-physical systems, the Internet of Things (IOI), big data and analytics, augmented reality, cognitive computing, and smart factory (Tay et al., 2018).

The Malaysian economy is steadily transitioning from labour-intensive to capital- and technology-intensive, which considerably enhances the relevance of the development of human resource policy, especially in the education and training sectors. To tackle the challenges of IR4.0, all students enrolling in Higher Education Institutions (HEI) must transcend their comfort zones and prepare for this new age, especially trainee counsellors. The quality of educators, including lecturers, instructors and counsellors, are crucial to equip future generations in tackling IR4.0. Educators are expected to have the experience and capacity to adapt and adopt the technological developments connected with IR4.0. Conventional literacy linked with reading, writing, science, and mathematics must be complemented with new literacy, including data literacy, technology, and human resources (Johari et al., 2021; Lase, 2019).

According to Abdullah et al. (2020), the recent topic of unemployment in Malaysia is mostly due to a lack of IR 4.0 skills among graduates of (HEI), which leads to unemployment. As a result, more efforts should be made to create graduate work competency preparedness of skill needed in line with IR 4.0 problems, ensuring that graduates are competent with IR 4.0 employment demand. In this context, trainee counsellors play significant

roles, as they are soon-to-be teachers and counsellors in schools or colleges, where they will be instrumental in shaping the future abilities of school students and college students. The success of these aims relates to bringing creative and helpful counsellors to schools who can enable the students to learn new knowledge and motivate them to accept the changes of IR4.0.

Therefore, it becomes important to explore the understanding and readiness of trainee counsellors in facing IR4.0, in accordance with the technical developments that are the advent of IR4.0. This research explores participants' opinions towards their readiness and knowledge regarding future competencies. The study expects that the participants would draw comparisons of the present career transition with their prior expertise. This research is of specific relevance to the Department of Guidance and Counselling (G&C) in the domain of education as it indicates that higher-level counsellors with high comprehension of IR4.0 may provide a better teaching and learning process to future generation trainee counsellors.

1.1 Current Study

The expansion and influence of IR4.0 have swiftly transformed conventional infrastructure-people systems into modernised systems that demand a professional workforce with cross-functional capabilities and advanced competences to manage new integrated processes and information technology (IT) systems (Sima et al., 2020). Thus, the primary problem is to ensure that new personnel entering the IR4.0 era have all the required automation, digital, and information technology skills, as well as the soft skills essential to manage and utilise the requirements of smart systems.

Educational competence, technology commercialisation skills, globalisation capacity, future strategy expertise, and counselling competence are the qualities that must be acquired by the educator. The national education system's major agenda is to produce educators and counsellors with high competence, knowledge, and abilities in order to contribute to effective learning among school students. According to Sima *et al.* (2020), the adoption of new technology has an impact on both workers and companies. To contribute to the realisation of IR4.0, it is essential that the educational system is adjusted to meet the new development needs of society. The primary human capital issues in IR4.0 are on adapting talents and human activities to diverse industrial needs as a result of process divergence. As a result, human capital plays a major role in a working environment and are prone to employment and educational redirection.

In today's rapidly changing technological world, the IR4.0 has emphasised the need to redesign the educational system, with a particular emphasis on transforming global learning and teaching methods. According to Abdul Kadira, et al. (2020), students' knowledge and preparation for IR4.0 are at an alarming level. Students, particularly trainee counsellors, should be prepared to execute and manage IR4.0's digital integration. This is critical to develop future workforces that are competent, knowledgeable, and skilled. Thus, the following research questions helps to accomplish the objectives:

RQ₁: What is the trainee counsellors' understanding of IR4.0 future skills?

RQ₂: How do trainee counsellors develop their understanding of IR4.0 and its readiness?

1.2 Literature Review

Artificial intelligence, machine learning, and automated technologies, along with data science, are used to govern a network of interconnected systems in IR4.0. In today's era of globalisation and digitalisation, formal education has become the key standard in the recruiting process. Career readiness comprises a set of abilities linked to success, comprehension, and personal attitude that must be acquired by counseling graduates to potentially get and keep the desired employment. Career readiness is closely connected with the capacity of counseling graduates to apply the abilities gained at the university and turn them into a meaningful contribution at a job. Universities and colleges are mainly responsible for training students for future jobs (Supian et al., 2020). However, the primary issue that impacts the job preparedness among counseling graduates in Malaysia is the absence of soft skills, which may be described as skills and qualities that represent the personality and attitudes of an individual.

Additionally, the graduates are typically faced with a skills gap issue when it comes to IR4.0 development. In Malaysia, there is a difference in opinion about the readiness of students or graduates to join the workforce. Employers and fresh graduates have divergent views on the main employability skills that the industry urgently needs. Graduates have said that they are prepared to join the labour market, but the employers reject this notion. Additionally, the industry argues that student interns lack critical thinking, oral communication, active listening, creativity, and innovation abilities (Supian et al., 2020).

IR4.0 has transformed the characteristics of a traditional workplace, and graduates are now required to acquire

skills that are relevant to these industrial demands. Therefore, students must be equipped and taught to enhance their readiness to confront IR4.0 and its demands. It is also important to modify and enhance the education in order to match with the demands of industrial sectors within the context of IR4.0. To fulfil these ideals, educators, especially those in higher learning institutions, play a vital role in training and producing high quality graduates and increase graduates' understanding and readiness by enhancing the teaching and learning (Abdullah et al., 2020).

Hence, the trainee counsellors at UPM have to be ready and have a complete grasp of IR4.0 before joining the working sectors. The trainee counsellors must establish a firm basis to face the increasingly uncertain job environment. If more persons are being retrenched due to the lack of skills, and students do not acquire the needed competence linked to IR4.0, the concern on how graduates would be able to join the labour market later would arise (Manonmani et al., 2020).

Pedagogy or teaching technique is continuously changing because of the changing learning environment and technology. The important aspects of IR4.0 such as internet of things (IOT), big data, artificial intelligence, and cognitive computing should be critically employed in the teaching and learning process. Lai et al. (2020) argued that knowledge, attitude, and the abilities of educators are essential in the application of IR4.0 in the teaching and learning process. This generates a requirement for education sectors to equip future educators with thorough awareness of IR4.0 and their importance in the industry.

The understanding and readiness for IR4.0 is the key determinant of future transformation skills among trainee counsellors. Understanding IR4.0 allows these future counsellors to offer superior counselling services to future generations and incorporate technology into the administration of counselling. IR4.0 is mostly used as a teaching tool in education and learning. As a result, the knowledge of IR4.0 alone is seldom adequate to prepare trainee counsellors with future transformation capabilities. This understanding must be supported by both the readiness to confront the IR4.0 challenges, as well as the technical capabilities necessary to implement IR4.0 technology (Zulnaldi & Majid, 2020).

According to Halili et al. (2021), IR4.0 in education entails a paradigm shift away from conventional passive learning pedagogies towards a more advanced and contemporary model that includes more advanced and modern digital technology to improve customised learning. Trainee counsellors are required to be prepared to adapt to a changing environment, ready to utilise their current talents, and rapidly acquire new ones in order to participate fully in society. As a result, higher education institutions must review and assess the extent to which their existing programmes offer training and real-world insights to graduates entering the workforce, as well as the steps they need to take to expand beyond theoretical and academic teaching (Pu et al., 2021; Tay et al., 2018).

Research has been performed to measure the degree of readiness and understanding among trainee counsellors of University Putra Malaysia (UPM) in facing IR4.0. The trainee counsellors are the major focus in this research as they are the future counsellors that play key roles in the implementation of IR4.0 in future generations.

2. Methodology

In order to determine the optimum research design for this study, a qualitative research approach was used. Descriptive and narrative study data was deemed the best way to elicit relevant findings to the research questions, based on the research objective and questions (Merriam, 1998). Semi-structured interviews were utilised to gather data because they enable the respondents to express themselves in their own words. Online face-to-face interviews were employed to collect the qualitative data.

The focus of this research was on the students attached to the UPM, Faculty of Education, Guidance and Counselling (G&C) Study department. Third-year undergraduates were chosen for this study. The entire population of undergraduates in this school is around 25 individuals in the third-year (final year) Bachelor of Education and Counselling (Guidance and Counselling) class. However, convenient sampling was then employed in order to select the undergraduates to be interviewed. Upon reaching a saturation threshold, a total of 4 undergraduates were interviewed, with each session 25-30 minutes in duration. The major aim of the interview session is to comprehend the respondent's viewpoint, ideas, and experiences on the topics being raised.

2.1 Instrument

In qualitative research, the person of the researcher is critical for the quality of the scientific knowledge and for the soundness of ethical decisions in any research project. By conducting interviews, the importance of the researcher as a person is magnified because the interviewer himself is the main instrument for obtaining knowledge.

Furthermore, the interview protocol is important to the researcher to increase the quality of the interview

questions necessary for the study. In this study, the researcher sent the interview questions to an expert to acquire feedback on the interview protocol and enhance the reliability, anticipate the respondents’ answers, and ensure understandability.

They are experts in the field of counselling and qualitative research. After receiving the feedback on the interview protocol, the researcher made the appropriate amendments. The semi-structured interview was guided by an interview protocol as listed below:

1. What is your understanding of IR4.0 future skills?
2. What are the IR4.0 future skills needed in a counselling job, practice, and career?
3. How do you develop understanding towards IR4.0?
4. How can IR4.0 readiness be enhanced among trainee counsellors?

2.2 Sample

The participants in this study were recruited through convenient sampling, or more specifically, a call for research volunteers. The announcement contained details about the current study, as well as how volunteers would be involved in data collection. Most importantly, those who volunteered were required to confirm that they are third-year students from the Counselling Department in the UPM Education Faculty. Separate online interviews were also conducted. Throughout the 25- to 30-minute long interviews, the interview protocol was continuously used as a reference.

The following table depicts the profile of the four participants involved in the present study. It is important to note that all the participants derive from the same class and faculty.

Table 1. Interview participants’ profile follow

Item	Details	University	Total
Gender	Male	UPM	2
	Female	UPM	2

3. Results and Discussion

By analysing the interview data, the research questions were addressed and clarified. The study topics address the trainee counsellors’ understanding of IR4.0 future skills and the process through which they gain understanding and readiness for IR4.0.

3.1 Interview Sections

The interview is divided into four distinct sections. The first section assesses the respondents’ understanding of IR4.0 and its relationship with future skills, whereas the second section assesses the respondents’ understanding of the relationship between IR4.0 and future career skills. The third section examines how respondents acquire and increase their understanding of IR4.0, and the final section assesses the trainee counsellors’ readiness to face IR4.0.

3.1.1 Understanding of IR4.0 Future Skills

Trainee counsellors must be well-versed in and understand IR4.0 in order to offer accurate information and assist prospective students in establishing an interest in the subject. With a solid understanding of IR4.0, trained counsellors will be able to assist students in developing their own interests and talents that will in turn aid them in making professional decisions. Thus, the respondents were asked about their knowledge of IR4.0 future skills. The responses have shown a good grasp of the relation between IR4.0, digital literacy, and the usage of technology such as data analytics, artificial intelligence, and cloud computing. According to respondents, IR4.0 is associated with digital automation, especially in the industrial sector. Four of the respondents: R1, R2, R3, and R4 alluded to this notion:

“IR4.0 is concerned with technological advances such as the use of technology into pedagogy, teaching, and learning ...” (R1)

“IR4.0 entails the use of technology, particularly big data and digitisation in solving problems, especially in industry ...” (R2)

“IR4.0 is involved with digital literacy, which includes the usage of software programmes, data analytics, and technical gadgets ...” (R3)

“IR4.0 is emphasis on the fields of STEM education, and the learning system is reoriented based on ICT learning ...” (R4)

Additionally, the respondents connect IR4.0 to a reduction in dependence on human labour and an increase in digital integration, which requires the use of IR4.0 technology such as robotics and artificial intelligence. The respondents are also able to correlate the implementation of IR4.0 to future jobs and have given specific instances. By incorporating IR4.0 into the curriculum, the educational system may focus on developing holistic, creative, and critical graduates. Implementing IR4.0 via coursework and job-based learning will also improve educational quality and enhance the undergraduates’ understanding of IR4.0. This study indicates that the respondents have demonstrated a broad knowledge of IR4.0 and its implications for future careers.

However, the results of this study contradict those of Ismail et al. (2020), who discovered that students’ understanding of IR4.0 is limited. According to Ismail et al. (2020), students’ knowledge of IR4.0 is relatively poor due to a lack of IR4.0 application in teaching and learning. Despite their lack of knowledge of IR4.0, however, the students demonstrate a strong interest in taking on the challenges it poses. This shows the students’ willingness to study and develop a more nuanced knowledge of IR4.0. Thus, educational institutions must evaluate and reorganise their current curricula to create graduates who are more knowledgeable, talented, and competent in accordance with IR4.0.

Interestingly, the results of this study corroborate those of Supian et al. (2020), who discovered that students have a high degree of understanding of IR4.0. It is important to highlight, however, that a high degree of knowledge of IR4.0 does not always transfer into a high level of preparedness for IR4.0 among students. Comprehensive knowledge of IR4.0 is primarily concerned with the incorporation of IR4.0 technology into future skills and is less concerned with the students’ readiness to cope with IR4.0.

As a counsellor, it is essential to possess a thorough understanding of IR4.0, especially in terms of counselling administration, which may incorporate cloud-based systems such as OneDrive and Google Drive. According to the interview data analysis, the respondents recognise the importance of IR4.0 in connection with trainee counsellor future jobs and acknowledge that IR4.0 is intrinsically connected to trainee counsellors’ future professions. This is attested by three respondents in this research:

“Counsellors should be emotionally and physically prepared to deal with the technical changes that IR4.0 necessitates ...” (R1)

“Counsellors should integrate IR4.0 into their teaching and learning. Additionally, counsellors should have strong knowledge of IR4.0 to assist prospective students in navigating their potential career paths ...” (R2)

“Counsellors must possess technological knowledge in relation to IR4.0, especially in the area of counselling administration, which involves the usage of cloud system and an online counselling platform ...” (R3)

“Counsellors must develop certain skills, and new content must be added, and new programmes developed to meet the current IR4.0 demands of changes ...” (R4)

The implementation of IR4.0 has transformed the conventional administration of counselling into digital management. In terms of counselling practices, IR4.0 allows online counselling sessions to be delivered through a number of digital platforms. Online assessment for counselling is also feasible due to data analytics, which is a key pillar of IR4.0.

Employers today demand graduates to have general skills and competencies such as problem-solving, communication, interpersonal skills, lifelong learning, and the ability to work as a competent team member capable of tackling difficult issues and handling complicated circumstances on the job. As a result, educational institutions should adapt their programmes to produce graduates capable of demonstrating superior job performance and career advancement (Ahmad et al., 2019).

In terms of counselling professions, IR4.0 is inextricably linked to counsellor professionalism via the provision of digitally enhanced counselling services. According to the respondents, IR4.0 adoption is essential for future careers in this era of globalisation and digitisation. Trainee counsellors must be digitally literate in order for counsellors to stay current with technological advances. The respondents feel that it is important to include IR4.0 in the teaching and learning process when it comes to counselling professions. Additionally, the respondents suggest that counsellors should be IR4.0-literate to help students and give a thorough understanding of IR4.0 and its impact on the industry and future careers. The respondents are in favour of using virtual classrooms and tele-counselling in the implementation of IR4.0 for teaching and learning.

However, some respondents have a poor understanding of IR4.0 and are unable to make the connection between

IR4.0 and future G&C employment. They are unable to link the value of IR4.0 to their future job in G&C due to their lack of understanding of IR4.0. Thus, although the trainee counsellors have a strong overall grasp of IR4.0, their knowledge of IR4.0 in relation to G&C future careers remains modest. Corte & Ferdinand-James (2019) proposed that, although appropriate skill development and training is not required for Industry 4.0, they are critical, with education institutions serving as an extension of industrial enterprises. Apart from that, education institutions must be supported and adopted by nearby businesses to ensure that the necessary skills are developed locally.

3.1.2 Develop Understanding towards IR4.0 and Their Readiness

According to the respondents, knowledge of IR4.0 is gained via both formal and informal education. Trainee counsellors are exposed to IR4.0 via specially developed technology and educational technology courses. The academic and practical elements of educational technology are covered in the courses, but according to the respondents, they have gained more knowledge about IR4.0 via informal education than institutions dedicated to increasing their knowledge and readiness for IR4.0.

The majority of trainee counsellors acquire information and comprehension of IR4.0 via news, articles, and publications, with institutions playing a less significant role in providing them with a thorough understanding of IR4.0. This idea was mentioned by all four respondents in this study:

“My knowledge of IR4.0 is derived through IR4.0-related courses and primarily from self-study ...” (R1)

“I learned about IR4.0 via my participation in extracurricular activities such as debate, forums, and conferences ...” (R2)

“My knowledge of IR4.0 is formed via both formal education such as IR4.0-related undergraduate classes and informal education such as self-reading ...” (R3)

“My knowledge of IR4.0 is mostly derived from informal education, which includes reading articles, news, and literature ...” (R4)

This study has established that trainee counsellors lack formal exposure to IR4.0. This finding is of critical importance because the lack of IR4.0 implementation by higher education institutes are shown to have a direct effect on the undergraduates’ understanding of IR4.0. The current research in Malaysia has focused only on the use of technology in different courses, academic readiness, and the challenges concerned with implementing IR4.0 in education.

Sustainable development at universities is crucial because it prepares students with skills and knowledge based on what they have studied and implement it in the industry. To implement sustainable development, it is therefore essential to expand the concepts of sustainability and the importance of educational development in implementing IR4.0 (Halili et al., 2021).

Halili et al. (2021) concurred with this result and stated that the implementation of IR4.0 in higher education institutes is currently restricted and is still in its early stage. Higher education institutions should prioritise preparing students for IR4.0 in order for them to remain relevant with the demands and challenges of IR4.0. This may be accomplished by providing students with critical thinking, creativity, cooperation, and communication skills that are relevant to the implementation of IR4.0.

The primary constraint to undergraduate preparedness is a lack of digital literacy, namely the technical abilities required for IR4.0 technology implementation and digital transformation. While the respondents agree that trainee counsellors support the adoption of IR4.0, many report being unprepared to deal with it due to a lack of exposure. This is demonstrated by the four respondents:

“Despite my adequate understanding of IR4.0, I still need to prepare myself physically and psychologically to tackle IR4.0 challenges ...” (R1)

“Due to trainee counsellors’ lack of exposure to IR4.0, our readiness to address the issue related to IR4.0 remains low ...” (R2)

“While training counsellors have a positive perception of IR4.0, the primary barrier is a lack of readiness and skills for IR4.0 integration ...” (R3)

“My readiness to face IR4.0 remains poor due to a lack of knowledge about IR4.0 ...” (R4)

Additionally, the respondents have voiced worries about their lack of readiness for IR4.0 and its impact on their future employment. Trainee counselors should be physically and mentally prepared to confront IR4.0. Physical readiness is intrinsically connected to technical proficiency associated with digital literacy, while mental

readiness is linked to the capacity to learn and adapt to the changes brought about by IR4.0. Additionally, trainee counsellor's curriculum should be improved to ensure that undergraduates have a firm grasp of IR4.0, and the respondents recommend that trainee counsellors be exposed to IR4.0 to expand their knowledge and prepare them for employment in IR4.0.

The findings of this research indicate a lack of readiness among trainee counsellors to confront IR4.0, despite their high level of general awareness of IR4.0 and a reasonable degree of comprehension about how IR4.0 would be implemented in future counselling careers. However, the results of this study contradict those of Ahmad et. al. (2019), who claimed that the readiness of students in facing IR4.0 is at a high level. Undergraduates' high degree of readiness is linked to both physical and mental preparedness. As a result, students are prepared to apply the technical skills needed by IR4.0, while also being prepared to learn and adapt to the requirements of IR4.0.

Despite this, the findings from this research is confirmed by Supian *et al.* (2020), who concurred that undergraduates are unprepared to deal with IR4.0. Numerous variables may affect the readiness of trainee counsellors in facing the demands and challenges of IR4.0., but it is worth noting that the primary reason for the undergraduates' lack of readiness in this research is the lack of formal educational exposure to IR4.0. Thus, it is critical for education institutions to prioritise trainee counsellors in G&C so that they may be better prepared for future work in IR4.0 and effectively use the necessary skills. However, successful employment in IR4.0 future skills is strongly linked to the knowledge of IR4.0 and less on the readiness to confront IR4.0 (Supian et al., 2020). Thus, despite their poor readiness to face IR4.0, trainee counsellors have a high likelihood of successful employment in IR4.0 future skills owing to their high understanding of IR4.0.

4. Conclusion

In summary, a strong knowledge and readiness for IR4.0 is critical in preparing students for future growth in their profession. The primary goal of this study is to determine the level of knowledge and preparedness for IR4.0 among trainee counsellors at UPM. IR4.0 is powered by digital technologies and ushers in new educational paradigms by emphasising smarter, more mobile, comprehensive, and virtual education and skill development of undergraduates. The findings indicate that trainee counsellors have a solid understanding of IR4.0 in general and a moderate understanding of IR4.0 in terms of potential counselling professions. Despite this, the trainee counsellors lack readiness in facing the challenges of IR4.0, owing to insufficient formal educational exposure.

This research study is significant because it introduces new dimensions for researchers to acquire information about the comprehension and readiness of trainee counsellors for IR4.0. At the same time trainee counsellors increased self-awareness in IR4.0 future skills transformation. Additionally, this research assists education institutions in recognising the critical nature of IR4.0 adoption in teaching and learning, as well as the increased impact of IR4.0 on future skills. Thus, appropriate measures can be implemented to improve trainee counsellors' IR4.0 readiness. It is suggested that future studies include comprehensive training and incorporate additional students, employers, and quantitative analysis. While students may assert that they are unprepared for future work in IR4.0, employers may disagree. As a result, it is critical to involve employers in future study in order to get a better knowledge of this subject.

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Resilience, Family Functioning, and Psychological Well-Being: Findings from a Cross-sectional Survey of High-school Students

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Abstract

The present study examined the relationship between family functioning and resilience on the psychological well-being (PWB) in high school students. A cross-sectional study was conducted using multiple linear regression for prediction and descriptive statistical analysis in five Indonesian high school students. A total of 341 high school students participated in the study, completing three validated self-administered questionnaires. Statistical analysis revealed that greater family functioning was associated with higher PWB. A significant relationship between resilience and PWB was found in this cohort. This study showed that to maintain healthy mental well-being, developing resilience and family functioning is vital for high school students. More emphasis may be placed on the possible role of resilience training and other kinds of family functioning and coping strategies in dealing with the unavoidable causes of stress in public high schoolers.

Keywords: Family Functioning, Resilience, Psychological Well-Being, Public High School Students

1. Introduction

Stress has been established as a disease of the twentieth century, and it has been intensively researched in school students (Pascoe et al., 2020; van Loon et al., 2020). To date, many researchers suggest that school students are under a lot of stress, especially at the beginning and end of their academic year (e.g., Brown, 2007). Excessive stress can lead to anxiety and depression, as well as a decline in academic performance (Maajida Aafreen et al., 2018). Maintaining excellent levels of psychological well-being (PWB) is essential in students' high school development years (Bendixen et al., 2018; Fomina et al., 2020). However, the PWB of high schoolers is negatively impacted by poor focus, heightened anxiety levels, chronic depression, and sleep disorders (Calderon Jr et al., 2021; Zaremohzzabieh et al., 2019). Thus, it is essential to make an effort to maintain and improve the PWB among high school students.

Many scholars have analyzed the PWB paradigm with a variety of constructs, including resilience and family functioning. Resilience is one's ability to not only endure challenging conditions without relent but to press on through life stressors (Polizzi et al., 2020). According to Srivastava (2011), resilience boosts one's well-being which means conversely, lower resilience leads to negative mental health outcomes (DeRosier et al., 2013; Qi et al., 2021). In a sample of 224 mid-to-late adolescents, researchers reported the positive association of PWB (environmental mastery, personal growth, and self-acceptance) with resilience (Sagone & De Caroli, 2014). Another study found that resilience predicts a healthy psychological state with partial mediation between emotional intelligence and PWB of high school students (Akbari & Khormaiee, 2015). Picardi et al. (2012) observed a possible positive correlation between PWB and dispositional resilience (commitment, control, and challenge), except for the dimension of autonomy. In a sample of university students during the peri-traumatic phase of COVID-19, researchers found that resilience predicted PWB, both directly and indirectly (Sood & Sharma, 2021).

Family functioning is also a PWB predictor among students (Shek, 2005). Several researchers highlighted that family functioning is an important piece of a puzzle when it comes to seeking a deeper understanding of adolescent mental health problems and well-being (Milburn et al., 2019). In essence, family functioning is the integration of various family characteristics where the family unit is a system by itself, and this perspective allows the examination of its overall functional role. Accordingly, the level of family functioning indicates the operational health of an individual's family system which closely affects adolescents' mental state (Shek, 2005).

The theory of psychological *suzhi* states that the individuals' interactions with their proximal environments form *sushi* (Zhang & Wang, 2020). Given this, family, as the most direct and recent micro-environment, will significantly impact students' *sushi* development, which in turn impacts their state of mental health (Zelege, 2013). Unsurprisingly, several scholars have highlighted the importance of paying attention to the key role of family functioning when investigating adolescent psychological problems (Milburn et al., 2019). Furthermore, a recent study has determined family functioning as an important environmental factor that moderates the link between school, well-being, and mental health (Albanese et al., 2019). Sari and Dahlia (2018) found that family functioning was significantly related to subjective well-being among adolescents with r value = 0.167 ($p < 0.05$). Therefore, some researchers advocated that for holistic individual development, it is more beneficial for the individual to receive intervention from multiple factors instead of only one, which is more practical (Luthans et al., 2006; Pervanidou et al., 2019). According to the theory of the developmental system, schools and families, although mutually exclusive on youth development, are bound by robust interaction and connection (Lakind et al., 2015).

In addition, Ryff's PWB model could be applied to school-going children because it possesses high levels of each six dimensions, and this represents the important steps required during an optimal developmental process. Therefore, building resiliency and family functioning in the school setting is critical for the mental well-being of high schoolers. However, to the best of our knowledge, little research has directly investigated the effects of family functioning and resiliency on high schoolers' PWB. Numerous PWB researchers highlighted that studies in a school context have not gained urgent attention, which they should (Musick et al., n.d.; Nomaguchi, 2012). Therefore, this study seeks to examine the relationships between family functioning and resiliency, and PWB among public high schoolers. This study hypothesized that (a) resiliency has a positive relationship with PWB, and (b) family functioning has a positive relationship with the PWB of high school students.

2. Materials and Methods

This cross-sectional study is used to provide helpful information regarding the relationship between family functioning and resilience on high school students' psychological well-being (PWB). A cluster random sampling was adopted. A sample of high school students was selected from Public High School in Siak Sri Indrapura district, Riau, Indonesia. The district has 14 Public Senior High schools owned by the government or receiving supports from the government. The total number of students in the Siak Sri Indrapura district is 2946 students in 2019. Because the overall population in this study is greater than 1000 high school students, the Cochran formula is employed to select a sample. After calculation, 341 students make up the total number of samples in this study. The sample selection in this study is conducted through cluster random sampling. In this study, the names of 13 schools in the Siak district (excluding one school for pilot study) are written on a piece of paper, then, a school is selected randomly. The total number of students in the selected school is computed, if the number does not fulfill the minimum sample size, the next school is selected from the pool of school names. This method is repeated until the minimum number of samples is fulfilled. The schools selected in this study are SMAN 1 Koto Gasib (68 students), SMAN 1 Sabah Auh (68 students), SMAN 1 Sungai Apit (69 students), and SMAN 1 Dayun (68 students). The final sample included 341 high schoolers, where 152 were males and 189 were females. The response rate was about 100%.

Three scales were used to measure the variables in this study: (1) the Family Assessment Device (Epstein et al., 1983) to measure family functioning; (2) the Resilience Scale (Wagnild & Young, 1990); and (3) the Psychological Well-being Scale (Ryff, 1989). The Family Assessment Device, the Resilience Scale, and the Psychological Well-being Scale have been confirmed to yield high internal consistency with Cronbach's alpha coefficient 0.75, 0.88, and 0.89 respectively. Each instrument had the 5-points Likert Scale for scoring.

Before the main research being undertaken, UPM Ethics Committee for a study that involving human subjects (JKEUPM) approved the procedure of doing the study. This is to ensure that all principles and ethical steps have been fulfilled during the research and subject's rights or human subjects are protected. Besides that, before collecting data for pilot tests and real study, the researcher also submits an application for a research permit to the Headmaster of schools in Siak district and the head of the Education Office of Siak district. All documents needed are attached and sent to the website. After the research permit is granted, the pilot test was conducted with 30 students to validate the questionnaires and clarify question-wording. According to the findings of the pilot research, all three scales were internally consistent, with alphas ranging from 0.71 to 0.95.

For data analysis, this study employed descriptive and inferential statistics. Means and standard deviations were used to describe the three constructs. To determine the predictors, multiple linear regression techniques were used. Therefore, by using this analysis, the researcher can determine whether resilience and family functioning

are the best predictors of PWB.

3. Results

Table 1 presents the descriptive statistics for the three latent constructs. The results indicate that respondents' PWB perception is well above average (M = 4.123, SD = .508) and resilience even appears to be lower (M = 3.010, SD = .328). It was also found that on average, family functioning is low (M = 2.746, SD = .232). The results of this study indicated that skewness ranged from -.127 to -.160 and kurtosis ranged from -.177 to 1.953, in which all items were considered to be normal.

Table 1. Descriptive statistics, construct reliability, AVE estimates, and squared correlation coefficients

Constructs	Mean	SD	α	1	2
1. PSW	4.123	.508	0.88		
2. FF	2.746	.232	0.72	.565**	
3. RE	3.010	.328	0.87	.389**	.432**

Note. PSW=Psychological well-being, Family functioning=FF, Resilience=RE, α = construct reliability value

Table 2. Beta value for psychological well-being

Model	Unstandardized Coefficient, B	Std. Error	Standardized Coefficient, β	t	p
Constant	-.342	.296	-	-1.158	.248
FF	.1122	.093	.512	12.019	.000
RE	.460	.066	.298	6.988	.000

Note. Family functioning=FF, Resilience=RE, $R^2 = .401$, $F(2,339) = 115.220$, $p < 0.001$.

The findings show that the path coefficients in the direct model indicate that family functioning ($\beta = 0.512$, $p < 0.001$) are significantly related to PWB, and this supports Hypothesis 1 and satisfying the direct effect condition. Resilience ($\beta = .298$, $p < 0.001$) is significantly related to PWB, and this supports Hypothesis 2. Family functioning and resilience jointly explained 40.1 % ($R^2 = .401$) of the variance in PWB (Table 2).

4. Discussion

PWB is vital at high school because high schools play an important role in helping students to make healthy lifestyle decisions. Thus, the overarching purpose of this research was to predict Indonesian high schoolers' PWB based on resilience and family functioning. The results indicate that PWB is positively and significantly correlated to resilience. Consistent with the findings of past studies, researchers observed that when students' resilience level is high and are less stressed, they enjoy improved PWB (García-Izquierdo et al., 2018; Klainin-Yobas et al., 2014; Ríos-Risquez et al., 2016; Smith & Yang, 2017). Also, the findings indicated the presence of high interaction between resilience and PWB while resilience was observed as a better PWB predictor. The results were supported by previous findings (Qi et al., 2021; Quintiliani et al., 2021). Therefore, it can be posited that resilience is either a consequential and/or an influencer of improved PWB outcomes. The study can see this subject's resilience from the point of the intricacy of the definition and processing view to resilience and psychological well-being. As factors and capacities, resilience and PWB are deemed unstable. Rather, their dynamic nature allows personality traits to enhance resilience and vice versa.

Based on the findings, the results also show that there are significantly strong correlations between family functioning and PWB among SMAN students at Siak Sri Indrapura. Therefore, to improve a student's PWB, it is crucial to get into the heart of the quality of family functioning as the predictor of a student's well-being, especially during the adolescent stage (Pan et al., 2021; Sari & Dahlia, 2018; Shek, 2005). This finding is supported by the resilience literature that observed positive family functioning leading towards student's PWB (Chow, 2010; Mason, 2016; Shek, 2005; Tulk et al., 2016). This study also discovered that family functioning has a link to maintaining one's mental health. A person may bear much more pain and be able to adapt with the help of their closest family members who frequently interact with each other, perform their position in the family correctly, effectively involve and are responsive to their family members, and have a strong problem-solving talent in the family.

5. Conclusion and Recommendation

In conclusion, the results contribute to the educational psychology literature by providing additional empirical support for the capacity of the two constructs (i.e., resiliency and family functioning) in predicting the psychological well-being of Indonesian high school students. With a keen focus on the relationship between resilience and PWB, school counselors may benefit from the new insights of this study as they aid students with stress coping strategies, adapting, and enjoying their schooling years. Thinking agility should be taught to students as they navigate through school and life stressors and challenges. Through training programs, students can learn their resiliency potentials and how to enhance them, thus boosting academic performance. Most importantly, the studies recommend that stakeholders should pay greater attention to high schoolers by equipping them with resilience coping skills. Meanwhile, school counselors should occasionally monitor students' resilience and family functioning to help them maintain their well-being. Similarly, the Ministry of Education of Indonesia (MoE), as a government institution, should focus on developing students' well-being as the foundation for mental health and academic performance. Therefore, the MoE should spearhead more programs and activities to build students' resilience and family functioning. The limitation of this study arises from the design of this study which is a cross-sectional study. The limitation of this study arises when having adopted a cross-sectional design in this study, a future study employing a different research design would be interesting. This will provide an in-depth understanding of the said variables. More broadly, future country comparison studies are also needed to examine the interactive behaviors of these variables in high schoolers in an international context.

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Teacher's Teaching Practices in the Class of Mualaf (New Convert)

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Abstract

Education is highly emphasized in Islam because it can guide people to live righteous life according to Islamic law. The same also applies to *mualaf* or converts, who should be provided with proper education and guidance to perform their duties as true Muslims. In Malaysia, an increasing number of individuals are embracing Islam as their way of life. They are given an education and need to attend classes to ensure that they understand and practice the teachings of Islam properly. Therefore, teachers play an important role in achieving this goal by applying interesting and effective teaching methods. This study was conducted to identify the perceptions of *mualaf* students on their teachers' teaching practices in the classroom to ensure that they understand and practice what they have learned in class, besides strengthening their faith and morals. A total of 124 *mualaf* students from two educational institutions in one of the states in Malaysia were involved in this study using quantitative methods. Questionnaires were used to collect data based on the objectives of the study. The results showed that students had a positive perception of the teaching methods used by their teachers. This study also discussed some of the problems faced by *mualaf* students in their learning process. Overall, the findings of the study indicated that most students have a positive view of their teachers' teaching. The current findings are expected to provide input to relevant agencies and a guide to improving the quality of teaching for *mualafs*.

Keywords: teaching practices, Islamic Education, *mualaf*, faith, moral values

1. Introduction

Islam is an *ad-Din* or religion revealed to all beings. The Prophet, peace be upon him (PBUH), was sent by Allah SWT as a blessing for mankind. As stated in the Qur'an, "*Verily I have not sent you, O Muhammad, except as a mercy for all the worlds*", which means Islam is a religion revealed by Allah as guidance and goal of human life that ultimately leads to oneness with Allah SWT. This concept transcends race or ethnicity; any man can accept and practice Islam as a way of life. *Mualaf* or new relatives is a group that is given attention by Islam. For instance, the *mualafs* are one of the groups entitled to receive *zakat*. As mentioned by Allah SWT in surah al-Taubah (60:9), "*Indeed, [prescribed] charitable offerings are only [to be given] to the poor and the indigent, and to those who work on [administering] it, and to those whose hearts are to be reconciled, and to [free] those in bondage, and to the debt-ridden, and for the cause of God, and to the wayfarer. [This is] an obligation from God. And God is all-knowing, all-wise.*" *Mualafs* consist of three groups: 1) teenagers, 2) adults, and 3) the elderly. Each group has the same rights in Islam as other Muslims (Mohamed & Muhamat, 2020). In the Malaysian context, *mualafs* are often referred to as new brothers or Muslim brothers (Che Mat et al., 2019). In most states in Malaysia, the term *mualaf* or convert refers to a person who has just converted to Islam and provided with *zakat* to strengthen their faith and life.

Education is a basic need for the development of human civilization. Human capital development is closely related to Islamic Education. The term '*Islamic Education*' refers to a comprehensive, integrated and continuous effort to help individuals master skills, build, and appreciate knowledge based on the Quran and Sunnah to perform their responsibilities as servants of Allah and caliphs on earth (Nik Pa, 2014). The word education itself was derived from the Arabic word ربي which means fertile, growing, and increasing. Therefore, *tarbiyyah* or education is human behavior in caring for, preserving, and educating a person until he becomes better than

before (Suhid et al., 2014). Furthermore, education should focus on individual development in a holistic and balanced manner. Suhid et al. (2019) stated that “education should not only focus on national development and unity, and the production of human resources, but also individual development as a holistic and balanced person, in terms of his physical, emotional, spiritual, intellectual and social capabilities.”

To instill understanding among *mualafs*, education is an effective medium in obtaining knowledge about their newly-embraced religion. Systematic and structured education not only attracts *mualafs* to understand Islam's teachings but also builds their confidence in the truth of the religion (Ab Rahmani et al., 2020). Thus, *mualafs* are not exempted from seeking Islamic knowledge to strengthen their religious beliefs. In addition, Kasim et al. (2017) stated that to ensure that a *mualaf* can understand Islam well, they require a basic understanding of the concept of faith because issues related to the conversion to Islam are closely related to the aspects of faith. Therefore, using appropriate teaching methods and techniques can positively impact the understanding of faith by *mualafs*.

Non-governmental organizations (NGOs) have been established to manage the affairs of *mualafs*, especially in their education, such as the Malaysian Muslim Welfare Association (PERKIM), Malaysian Chinese Muslim Association (MACMA), and Malaysian Indian Muslim Congress (KIMMA) (Abu Bakar & Ismail, 2018). Moreover, *mualafs* are required to attend classes organized by the State Islamic Religious Council (MAIN) or the State Islamic Religious Department (JAIN). These classes expose them to several modules (basic, intermediate, and advanced levels) provided by the respective states. It was this issue that the educators needed to use effective teaching methods and provide adequate supervision to guarantee that the *mualafs* had a smooth teaching and learning process that they could apply in their everyday lives. They also have to know and understand what are the methods needed before coming into the classroom. Therefore, it is necessary to create a structured study module for *mualafs*, focusing on teaching and learning methods for their complete understanding of Islam. Furthermore, the modules can be used as a guideline in classes in each state to increase the beliefs of *tawhid* and faith among *mualafs*. Thus, this study surveyed the perceptions of *mualaf* students towards teachers' teaching practices and identified their delivery methods in classrooms. Subsequently, solutions to problems or issues that arise were proposed and discussed.

2. Literature Review

2.1 *Mualafs' Education System in Malaysia*

Muslims, especially *mualafs* who are still new in understanding Islam, need to seek knowledge, especially those related to Islam. However, because this group is new to the teachings of Islam, they need special attention and constant guidance to ensure that they are on the straight path. Furthermore, this effort should not be taken lightly because it is feared that their faith would deviate and return to their original religion due to the lack of guidance in knowledge procurement, especially in Islamic education. According to Suhid et al. (2019), *mualafs* should always be guided and monitored in terms of their understanding, appreciation, and practices to prevent conflict with Islamic law, and Allah SWT accepts all their practices. Therefore, *mualafs* must understand Islam through guidance and education by the responsible bodies to produce knowledgeable individuals with a balanced appreciation of human personality in all aspects of their lives (Norddin, 2017). In this regard, governmental bodies and NGOs have been established to manage and organize the education of *mualafs*. In Malaysia, individuals who have just converted to Islam are called new relatives, *mualaf*, or converts. It was mentioned in the Qur'an in surah al-Taubah verse 60, the term *mualaf* or "*mualafatu qulubuhum*" refers to an individual whose heart has been tamed to incline to Islam; thus, indicating that new relatives are also given attention in Islam (Che Abah et al., 2019).

In Malaysia, government bodies such as the MAIN and the JAIN are responsible for giving special attention and guidance to the *mualafs* in shaping their personality to lead the Islamic lifestyle and develop their Islamic knowledge (Abu Bakar & Ismail, 2018). In addition, *mualafs* are educated through various programs organized by the preaching bodies to build their understanding of Islam (Che Abah et al., 2019). Apart from that, these programs, courses, and classes aim to guide them and provide understanding, appreciation, and practice of the Islamic knowledge gained in their lives as Muslims.

2.2 *Teacher's Teaching Practices and Methods*

Classes conducted for *mualafs* is an important initiative to ensure that they can improve their Islamic knowledge, skills, and practices. These classes are held regularly and cover several essential aspects of Islam that act as a form of support for *mualafs* apart from financial assistance. However, appropriate and effective teaching methods are essential to ensure their understanding and provide continuous guidance for *mualafs* (Mohamad et al., 2017). Hakimi Shahimi and Kasim (2019) stated that there are no systematic guidelines for teachers who

teach modules for new relatives until now. Additionally, Yusri and Tan (2015) reported that some teachers do not master the appropriate and effective teaching methods for *mualafs*.

Teaching methods, in general, refer to the systematic action of teachers to achieve teaching objectives following the title of the lesson and the level of student's achievement (Johari et al., 2016). Appropriate and accurate teaching methods lead to effective learning and can affect students' understanding, changes in their practices and attitudes (Kiamsin & Talia, 2018). Therefore, teaching requires significant elements such as purpose and target, which lead to the results and changes that are expected in students (Md Nawati, 2011).

In Islam, *mualafs* are considered pure children who are free from sins. Therefore, they need to be molded and educated in the best way to perform good deeds as true Muslims. Therefore, the need for appropriate and wise teaching methods should not be underestimated (Abdullah et al., 2019). Moreover, the concept of wisdom is touched by Allah SWT clearly in *Surah Al-Nahl* (6:125) as the following:

“Invite to the way of your Lord with wisdom and good instruction, and argue with them in a best way. Indeed, your Lord is most knowing of who has strayed from His way, and He is most knowing of who is [rightly] guided.”

(16:125)

The “wisdom” mentioned in the Quran is in line with the findings by Mohamad et al. (2017), who reported that the method used in PERKIM Islamic Dakwah Institute in Kelantan includes the method of wisdom, apart from the various presentation and problem-solving techniques. This method of wisdom or prudentness in combination with other techniques improved the level of understanding and practices of the *mualafs*. Furthermore, a study conducted on 60 *mualafs* in one of the *dakwah* institutions in Melaka showed that the delivery or teaching methods of the teaching staff were at a moderate level (mean = 3.79) (Mat Sah & Ismail, 2003). The excellent and clear presentation by the teaching staff is contributed by their experience in teaching and educating converts for over a decade.

These findings indicate the importance of appropriate and effective teaching or delivery methods during the *mualafs*' class. Without appropriate and effective teaching methods, it will affect the level of understanding, skills to perform worship, and the level of practice and appreciation of religion in the lives of *mualafs*. The contents and teaching methods should also be in accordance with the level of understanding of *mualafs* as a person getting to know Islam. The important syllabi as an initial exposure before moving on to a broader field include the knowledge of *fardhu ain*, *tawhid*, worship, morals, *sirah* and Quranic studies (Abu Bakar & Ismail, 2018; Ismail et al., 2015). In conclusion, the variety of methods used by teachers when teaching *mualaf* students with the help of modules as the basis of guidance have successfully enabled students to understand their lessons better.

However, this module only acts as a guideline for teachers. Some teachers even take the initiative to prepare Weekly Lesson Plans by term for their classes. On top of that, teachers put in the effort to be creative and diversify their teaching approaches according to the level of their students to attract students' attention and make their lessons more effective. This initiative is critical, especially nowadays; it requires teachers to act creatively and innovatively in imparting knowledge, including Islamic Education, to attract students and for their teaching to be effective. According to Asmawati Suhid et al. (2021), in Islamic Education, innovation comes in the form of a new pedagogic theory, a methodological approach, a teaching method, an instructional tool, or a learning process, all of which, upon implementation, brings about significant changes in teaching and learning in terms of improved student outcomes. Therefore, this study aimed to identify the perceptions of convert students on the teaching practices of their teachers in the classroom.

3. Methodology

3.1 Research Design

A case study was conducted in one of the states in Malaysia. The reason for employing a case study is that it is a detailed, in-depth analysis of a specific situation in a real-world setting. The quantitative data obtained were analyzed using Statistical Package for The Social Sciences (SPSS) version 24.0.

3.2 Sample and Study Location

The researchers used a basic random sampling technique. Every member of the population has an equal probability of getting chosen under this technique. The study population consisted of 124 *mualaf* students from two educational institutions. Both are centers of studies for *mualaf* in Kelantan, Malaysia. This location was chosen because it had the most significant number of *Mualafs* in Malaysia. Because of the sensitivity of the

subject, the names of the centers are kept private. The majority of statisticians agree that a sample size of 100 is required to obtain any type of significant conclusion (e.g., Hair et al., 2007).

3.3 Measures

Descriptive statistical analysis involving the frequency, percentage, mean, and standard deviation were used to analyze the data obtained. Van Geel et al. (2016) created the student perception questionnaire that was utilized in this study and modified for Malaysian context. The research instrument was built using Cohen et al.'s (2000) suggestions in mind and was then verified by a panel of specialists. The built instrument had a dependability index and an alpha value of 0.956.

3.4 Ethical Considerations

The procedures were authorized by Universiti Putra Malaysia before the study's implementation. Prior to data collection, researchers got permission from the state's Islamic Religious Council (MAIWP) for conducting this study. Students were told that they may withdraw at any moment, even if they had already begun, and that the information gathered would be kept private and anonymous. In addition, each participant's written permission was acquired, as well as parental consent. The consent form was provided to the participants one day before the questionnaires were delivered, and the consent form was collected before the questionnaires were distributed. After receiving the consent form, respondents were requested to complete the surveys.

3.5 Pilot Testing

Before actual data collection, researchers distributed 24 questionnaires among Mualafs in selected educational intuitions to assess the validity of the instrument as recommended by Saunders et al. (2012). Changes to the questionnaire were made based on the comments and recommendations of the respondents.

4. Research Findings and Discussion

4.1 Demographics of Mualaf Students

Out of 124 respondents, 87.1% were male, and 12.9% were female. Most participants were Thai or Siamese (87.1%), followed by Chinese (25.0%), Indians (1.6%) and others (21.0%) (Table 1).

Table 1. Demographics of *mualaf* Students (N=124).

	Frequency	Percent
Gender		
Women	16	12.9%
Man	108	87.1%
Nation		
Thai	65	52.4%
Chinese	31	25.0%
Indian	2	1.6%
Others	26	21.0%

4.2 Perceptions of Mualaf Students towards Teacher's Teaching

4.2.1 Beginning of Teaching Stage

Table 2. Perceptions of *Mualaf* Students on the Beginning of Teaching (N=124).

No.	Item	Mean	SD
	My teacher		
1	begins the lesson with a prayer recital.	4.66	.475
2	asks about the students' well-being/health.	4.22	.669
3	starts teaching when all students are ready.	4.40	.637
4	starts the lesson interestingly.	4.27	.745
5	offer reminders of moral values before teaching.	4.33	.647
6	punctuality in starting lesson.	4.38	.564
7	relates the content of the lesson to the students' experience.	4.18	.699
8	asks questions that stimulate students' enthusiasm in learning.	4.28	.760

4.2.2 Teaching Development Stage

Table 3. Perceptions of *Mualaf* Students on Teaching Development (N=124)

No.	Item	Mean	SD
	My teacher		
1	always attracts the attention of students.	4.40	.568
2	always inserts the words of advice.	4.46	.516
3	gives examples related to the realities of life.	4.38	.519
4	praises the students who answer questions correctly.	4.33	.552
5	using language that students easily understand.	4.40	.538
6	using interesting teaching techniques.	4.35	.544
7	provides examples related to the realities of life while teaching.	4.23	.543
8	always listens to the views of students.	4.32	.486
9	provides students with the opportunity to offer insights.	4.37	.502
10	gives students the opportunity to ask questions.	4.41	.494
11	always encourages the students to do good.	4.48	.631
12	constantly reminding students not to commit crimes.	4.44	.545
13	emphasizes manners with family members.	4.44	.515
14	Reminds students to always respect the sunnah of the Prophet PBUH.	4.60	.493
15	tries to shape morals by telling the stories of the apostles and exemplary individuals.	4.54	.500
16	strives to ensure that teaching has an impact on students.	4.41	.570
17	takes into account the interests of the students.	4.29	.506
18	takes into account the abilities of the students.	4.25	.550
19	answers the students' questions clearly.	4.47	.562

4.2.3 Closing Stage

Table 4. Perceptions of *Mualaf* Students on the Closing of the Lesson (N=124)

No.	Item	Mean	SD
	My teacher		
1	repeats important contents.	4.38	.550
2	asks if students do not understand.	4.43	.573
3	conclude the lesson by reciting Surah al-Asr.	4.57	.665
4	ends the lesson by reciting a prayer.	4.62	.535
5	advises the students to practice moral values in life.	4.52	.548
6	reminds the students to perform prayer.	4.61	.537
7	always motivates the students to continue to practice the teachings of Islam.	4.60	.507
8	says thank you.	4.54	.590

Based on Tables 2, 3, and 4, it was found that the average student had a positive view of their teachers' teaching practices. The mean obtained was between 4.18 - 4.61. What attracted the researcher's attention during the beginning of the teaching session was that the teacher always started the class with a prayer reading (mean = 4.66, $SD = .475$) and reminders about moral values (mean = 4.33, $SD = .647$) before starting the lesson to strengthen the spiritual aspect of students to constantly practice the commandments of Allah SWT and stay away from His prohibitions.

Similarly, at the teaching development stage, students agreed that the teacher reminded them always to respect the Sunnah of the Prophet PBUH (mean = 4.60, $SD = .493$) and encourage them to do well (mean = 4.48, $SD = .631$) and offered meaningful advice (mean = 4.46, $SD = .516$). This practice is praiseworthy and should be emulated by other teachers because the *mualafs* should always be guided and reminded of good deeds pleasing to Allah SWT. According to Suhid et al. (2019), *mualafs* require constant guidance and monitoring in their understanding, appreciation, and practices to avoid conflict with Islamic law. Meanwhile, at the closing stage of the lesson, teachers constantly reminded students to perform prayers (mean = 4.61, $SD = .537$) and motivate them to continue practicing Islamic teachings (mean = 4.60, $SD = .507$). Finally, before ending the class, the

teacher recited prayers with the students (mean = 4.62, $SD = .535$) and instructed them to practice moral values in life (mean = 4.52, $SD = .548$). Abdullah et al. (2019) reported that educational programs specifically for *mualafs* are a crucial social support platform to enhance their level of understanding of Islam and thus practice the Islamic way of life.

From the teaching aspect, students were found to have a positive view of their teachers' teaching practices. For example, teachers begin the lesson only when all students are ready (mean = 4.40, $SD = .637$) and were punctual in starting the class (mean = 4.38, $SD = .564$). At the teaching development stage, most students agreed that their teachers gave students the opportunity to ask questions (mean = 4.41, $SD = .494$), used a language that was easily understood by students (mean = 4.40, $SD = .538$), gave students the opportunity to voice out their views (mean = 4.37, $SD = .502$) and used interesting teaching techniques (mean = 4.35, $SD = .544$). In addition, to ensure that students were clear and understood the content, the teachers ask students if they have questions about the lesson (mean = 4.43, $SD = .573$) and repeat the important content (mean = 4.38, $SD = .550$). Overall, the teachers successfully employed appropriate teaching methods that attracted interest and improved students' understanding.

Generally, *mualaf* students consist of various races and ages from different social and cultural backgrounds; thus, continuous guidance is necessary to help them build a new self-perception after conversion and transition (Yusri & Tan, 2015). Furthermore, these new relatives need all the help and support they can get to adapt to the new environment and lifestyle within the society. Most importantly, as Muslims, differences in race, culture, and ethnicity should not be a reason to discriminate against converts in the Muslim community (Suhid et al., 2019).

5. Conclusion

Teachers that teach *mualafs* were devoted to educating and mentoring their students, according to the findings of this study. They worked hard to develop their teaching abilities in order to attract students and keep their ideas and practises alive, as well as to strengthen student-teacher relationships. On top of that, the teachers diversified their teaching methods to improve students' understanding during their lessons. Furthermore, a structured teaching method is an added value in facilitating the learning process of the *mualafs* who constantly strive to obtain precise information and guidance to understand Islam. Apart from that, a particular religious guidance and improvement curriculum for *asnaf mualafs* might help them maintain and deepen their religion. Aside from *fardhu ain*, the *mualafs* education curriculum should also focus on socio-economic support to help *mualafs* cope with their emotional and financial responsibilities and prepare them for any problems that may arise after their martyrdom.

6. Limitations and Direction for Future Studies

The outcomes of this study were the study's primary weakness. Initially, *Mualafs* were used as respondents in questionnaire research. As a result, the sample can only be applied to students who fall within these categories. The statistical analysis, on the other hand, simply offered numerical relationships. The researcher's subjective assessment determines how these statistics are understood. However, the findings are consistent with those of other research, boosting confidence in the conclusions. For a deeper understanding of the phenomena, more study utilizing in-depth methodologies is needed.

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Predicting the Roles of Attitudes and Self-Efficacy in Readiness Towards Implementation of Inclusive Education Among Primary School Teachers

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Abstract

Teachers' preparedness is a critical component in implementing inclusive education. It is pertinent to understand whether mainstream instructors are ready for inclusion as the number of children with special needs increases steadily over the years. The Zero Reject Policy has accelerated the implementation of inclusive education in Malaysia. While this is an essential step forward, assessing teachers' readiness for change is critical. This study aims to find out the predictive factors (attitudes and self-efficacy) on the preparedness of mainstream primary school teachers towards the implementation of inclusive education. This study is of a correlational research design where questionnaires were distributed to 367 teachers randomly selected from a cluster of nine schools in Hulu Selangor, Malaysia. The results show that teachers have moderate levels of readiness, attitudes and self-efficacy. There are also significantly positive relationships and predictive correlations between attitudes and readiness as well as self-efficacy and readiness. This implies that attitudes and self-efficacy should be considered in gauging teachers' readiness in the implementation of inclusive education. Taken together, findings in this study could inform further inclusive education research in Malaysia and could be taken into consideration in the design and execution of teacher training courses on Inclusive Education.

Keywords: inclusive education, teacher readiness, attitudes, self-efficacy

1. Introduction

Learning disorders are showing a steady increase in Malaysia. Ching (2009) asserts that in 2004, there were 57,483 children with special educational needs (SEN), and in 2009, there was an increase to 100,180. In five years, the growth shown is indeed rather alarming. Malaysian education Statistics (MOE, 2018) presented an increase in enrollment figures of SEN children from 48 140 in 2010, 50 738 children in 2012, to 79 836 in 2017. MOE (2017) reported that 78% of children are in integration programs, while a small portion (19%) attend the inclusive education program, and 3% of the students are in special schools. There is still more work to implement inclusive education, one of the key goals in the Malaysian Education Blueprint, to have 75% of SEN children in inclusive education by 2025.

The Salamanca Statement (1994) stated that participation and inclusion are salient to human dignity and the exercise of human rights. Therefore, there is a need to reflect on strategy development within the education field to achieve genuinely equalised opportunity for every child. Both policies advocate that all children have access to an education that is inclusive. The Zero Reject Policy ensures that all undocumented and special needs children have access to education and is planned to be implemented by stages (New Straits Times, 2018). The Zero Reject Policy is a majorly crucial albeit bold step to ensure that the educational system includes and supports all students, particularly students with SEN in Malaysia. Inclusion has attained ground over the past decade internationally (Leonard & Smyth, 2020; Azorin & Ainscow, 2020; Black & Simon, 2014; Waitoller & Artiles, 2013). The Education 2030 initiative marks a significant step forward, in which the priority is presented clearly: to establish equitable and inclusive quality education and encourage opportunities for lifelong learning for all (UNESCO, 2015). Inclusive education requires equal opportunities for every child to be educated in a mainstream classroom irrespective of their special educational needs (Goodall, 2015).

Teachers have been increasingly called upon to adopt inclusive practices in teaching regarding the needs of all

students (Saloviita, 2020; Azorin & Ainscow, 2020). However, the teachers' readiness and willingness to make the adjustments are often unmeasured as an essential precondition for teachers to undertake such a task (Rouse, 2018). Di Gennaro et al. (2014) suggests that teachers should learn ways to value difference and the best methods in responding to diversity in their classrooms. However, readily available knowledge for teachers would unlikely be applied if they lack the will to do so. It might be because they do not believe the inclusion of all learners is their role, or they think that their actions would not lead to positive results for all students (Rabi et al., 2018).

Moreover, teachers with negative attitudes and low self-efficacy are more likely to be more frustrated and lack the confidence to implement inclusive practices in their teaching (Agbenyega & Klibthong, 2015; Subban, Round, & Sharma, 2021). Hence, it is critical for instructors to have favourable attitudes toward inclusion and high levels of self-efficacy to successfully administer inclusive education (Hashim, Ghani, Ibrahim, & Zain, 2014). Therefore, teacher education courses that focus on inclusive issues can transform teachers' attitudes and self-efficacy besides providing knowledge to teachers (Killoran, Woronko, and Zaretsky, 2014) to be more prepared to teach in inclusive settings.

Readiness involves combining a person's ability and willingness to perform tasks that indicate a situational need for different leadership approaches (Baker, 2002). Hay, Smith and Paulsen (2001) argue that teacher readiness involves getting teachers ready for change. In the context of an organisation, change entails a loss of established practices, a movement from expert to student, and a shift in power dynamics (Ricci et al., 2020). As school administrators question the current status quo to disrupt settings that promote marginalisation of groups of children based on their many characteristics of learning capacity, they can expect opposition (Black & Simon, 2014). Sofian et al. (2020) assert that teachers would heavily impact the learning process and the development of SEN students, thus are also responsible for the successful implementation of inclusive education. They believed that greater drive, energy, creativity are required from teachers involved in teaching special education. An inclusive classroom does not signify that a child is placed in a mainstream classroom with typically developing peers but are ignored or not being provided equal opportunity to thrive in their learning environment, as do their typically developing peers.

Conversely, an inclusive classroom is where SEN students are included in a mainstream classroom, providing services to the teachers and the students to fully participate in academic and extracurricular activities (Shevlin et al., 2013). Sharma and George (2016) argue that attitudes and self-efficacy influence teachers' responses and behaviours towards inclusive education rather than one of those two constructs. They stated that teachers who possess a high sense of self-efficacy, have positive attitudes towards inclusive education and teach in schools where they are adequately supported might be more willing to include students with SEN. Hence, teachers need to have positive attitudes and high self-efficacy to be ready for inclusive education.

Corsini & Auerbach (1998) define attitude as a stable and learned disposition in a favourable or unfavourable response to a person, an object or event in a consistent manner. The attitude was previously viewed as a single factor. However, Rosenberg and Hovland (1960) distinguished the three-component attitude model, including cognitive, affective and behavioural elements. A key reason for studying attitudes is that attitudes are the best predictors of behavioural intentions (Ajzen and Fishbein 1980). Attitudes concerning readiness have been an exciting area of study. Often, teachers might have positive attitudes about SEN students and inclusive education in general but still, feel unprepared to teach students with SEN. Buford and Casey (2012), in their study, found that teachers showed overall positive attitudes. Still, there were substantial implications that training was needed, so teachers are more ready and willing to adopt inclusive practices in their classrooms. Previous research shows that teachers with more positive views of inclusion display more self-efficacy and confidence in their ability to support students with disabilities and be prepared to adapt classroom materials and procedures to accommodate their needs (Beacham and Rouse, 2012; Florian and Black-Hawkins 2011; Sharma, Forlin, and Loreman 2008). In studies on teachers' attitudes towards inclusive programs that have been carried out in Malaysia, many teachers expressed ambivalent feelings towards Inclusive Education teaching experiences (Ali et al., 2006; Bailey et al., 2015; Sukumaran et al., 2015). Findings in this study could strengthen the assumption that ambivalent feelings might exist as teachers do not have enough knowledge of inclusive practices to form their opinions.

Self-efficacy is a future-oriented perception and belief associated with one's competence level that they might portray in situations that affect emotions and thoughts (Bandura, 1997). Schunk and Pajares (2005) articulate that self-efficacy is a person's perceived ability and confidence in organising and executing a predetermined set of actions to accomplish a task and find solutions to a problem. Bandura (1997) stated that teachers' self-efficacy impacts the type of environment that teachers can create for learners and their perceptions on the variation of

teaching tasks that they would be willing to perform to improve students' learning process. Bandura (1990) suggests that a teacher's competence includes knowledge and skills and being able to apply them successfully in various situations and diverse circumstances, and many of which involve stressful and unpredictable elements. Therefore, a high degree of self-efficacy would impact teachers' willingness to be immersed in positive, inclusive behaviours, bringing about positive differences in teacher attitudes (Cate, Markova, Krischler, & Krolak-Schwerdt, 2018).

Furthermore, educators with high efficacy are more willing and prepared to provide accommodations and modifications for SEN students (MacFarlane & Woolfson, 2013; Umhoefer, Beyer, and Vargas). Teachers with high efficacy beliefs can successfully identify and are subsequently more prepared to address challenges in the inclusive classroom. They are also more willing to develop instructional approaches that are most effective for their learners with diverse needs (MacFarlane & Woolfson, 2013; Umhoefer et al., 2013).

Through inclusive education, teachers can provide adequate support to students in nurturing them to become capable citizens. Inclusive education involves a paradigm shift in thinking about the social world and the education system (Marimuthu & Cheong, 2014). The study's findings are vital to provide evidence and determine the predictive roles of attitudes and self-efficacy in readiness among mainstream teachers. The study reflects meaningful insights on attitudes and self-efficacy in regards to preparedness. The predictive relationships in this study can be of reference to local and international researchers. Studies showed that local researchers primarily focused on policies and practices in the inclusive program, teachers' attitudes and self-efficacy in separate studies (Teng, 2016). Since there are theoretical and practical connections between the variables in this study, it is worth exploring their relationship to yield meaningful contributions to the inclusive education field locally and internationally. The Zero Reject Policy would eventually involve increasing Malaysian schools adopting the inclusive education model, so it is crucial to analyse teachers' readiness and factors that influence it. Establishing these baseline levels should essentially include rural areas and small towns like the Hulu Selangor area, where there are fewer teachers in each school (the minimum number of teachers in a school was 14 teachers in the sample size) and fewer students. Schools with smaller teachers and students need to be considered as they, too, would be part of the statistics in gauging the readiness to implement inclusive education and its success.

The study's theoretical basis entails predicting the roles of two predictor factors (attitudes and self-efficacy) in the level of preparedness (criterion variable) among teachers in mainstream primary schools in Hulu Selangor, Malaysia. A sample of 367 mainstream teachers was selected from a cluster of 9 Hulu Selangor mainstream public schools. First, a survey was conducted, which included four parts. Part A contains demographic information about teachers; part B consists of the Scale of Teachers' Attitudes towards Inclusive Classrooms (Static), containing 20 items; and part C on Teacher's Self Efficacy for Inclusive Practices (TEIP), which includes 35 items. Finally, part D is 20 items measuring teachers' readiness to implement the inclusive education program, modified from Lee and Low (2013).

Research Objectives

The objectives of this study are:

1. To investigate the levels of attitudes, self-efficacy, and readiness towards implementing inclusive education among mainstream primary school teachers.
2. To investigate the relationship between attitudes and readiness towards implementing inclusive education among mainstream primary school teachers.
3. To investigate the relationship between self-efficacy and readiness towards implementing inclusive education among mainstream primary school teachers.
4. To investigate the predicting roles of attitudes and self-efficacy on readiness to implement inclusive education among mainstream primary school teachers.

2. Methods

This descriptive quantitative research takes the form of a predictive correlational study. Its primary purpose is to predict the roles of self-efficacy and attitudes in readiness towards implementing inclusive education among mainstream primary school teachers in Hulu Selangor, Malaysia. This study utilised a survey design in which questionnaires were administered to teachers from mainstream primary schools. The predictor variables are attitudes and self-efficacy, and the criterion variable is readiness among teachers.

2.1 Participants and Procedure

A sample of 367 mainstream teachers was selected from 9 mainstream public schools in Hulu Selangor,

Malaysia after a cluster of simple random sampling was carried out to determine the schools. The developers of the instruments were contacted to obtain permission to use and modify the measures in this study.

2.2 Instrument

By using three measures, this study examines data on attitudes, self-efficacy, and preparedness to adopt inclusive education among mainstream primary school teachers. The following is a list of instruments and their descriptions, as well as the score:

Scale of Teacher's Attitudes towards Inclusive Classrooms (Static). Cochran created the Static scale measuring teacher attitudes about inclusive schools (1998). The scale consists of 20 items on which teachers' opinions about the inclusion of children with SEN in classrooms are rated on a 5-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. There are no particular cut-off values; high scores indicate good attitudes, and low numbers reflect negative views of the teacher. In addition, STATIC had subscales for advantages and drawbacks of inclusive education, professional difficulties, philosophical questions, and logistical considerations, according to Cochran (1998).

Teacher's Self Efficacy for Inclusive Practices (TEIP). Sharma et al. created the Teacher Self-Efficacy for Inclusive Practice Scale (2015). The scale was divided into three subscales by Sharma et al. (2012): 1) Self-efficacy in instruction, which assesses students' ability to use successful techniques in a diverse classroom. 2) Efficacy in cooperation assesses participants' self-perceptions of their ability to collaborate with students, parents, and other staff members. 3) Behavior management efficacy contains questions that assess participants' self-efficacy in dealing with students' problematic behaviours and concerns. A 6 item Likert scale, ranging from (1) strongly disagree to (6) strongly agree, is used to evaluate 35 items that focus on teachers' self-efficacy in including all learners in the classroom.

Readiness of Teachers. Lai et al. (2017) conducted a study to investigate the level of preparedness among mainstream teachers in teaching in an Inclusive Education Program (IEP). The study's objective is to examine readiness levels of mainstream teachers in terms of their teaching skills, attitudes, and field knowledge. A questionnaire was developed by Lai et al. (2017) based on the objectives of the study. It contains 35 items, and participants rate their responses on a 5 point Likert scale ranging from (1) strongly disagree to (5) strongly agree. The questionnaire was classified into three subscales: Readiness level in terms of teaching skills, readiness level based on teacher's attitudes and readiness in terms of field knowledge. This instrument was modified for this study. Since an attitude scale is already used to measure teachers' attitudes, the subscale of readiness level in terms of perspectives will be omitted in this study. Instead, the instrument in the study would include 20 items based on the subscale of readiness level in terms of teaching skill and readiness level in terms of field of knowledge.

2.3 Reliability

A Cronbach alpha test was conducted to test the reliability of the items. According to the test, the results need ($\alpha > 0.7$) for the reliability to be acceptable and high. The attitude subscale consists of 19 items ($\alpha = .709$), after 1 item is deleted (item 12) in order to achieve ($\alpha > 0.7$). The self-efficacy subscale consisted of 17 items ($\alpha = .707$), after 1 item was deleted (item 9) to achieve ($\alpha > 0.7$). The readiness subscale consisted of 20 items ($\alpha = .942$) with no items deleted.

3. Results

3.1 Levels of Attitudes, Self-efficacy and Readiness Towards the Implementation of Inclusive Education

The levels of attitudes, self-efficacy and readiness of mainstream primary school teachers towards inclusive education are calculated using mean and standard deviation. The average of attitude score is 3.10 (SD = .38), average self-efficacy score is 3.75 (SD = .40) and average of readiness score is 3.22 (SD = .65).

The attitudes, self-efficacy, and readiness levels are determined by dividing the mean range by the number of levels (low, moderate, high). The ranges for attitude levels are classified as: 1.87-2.55 (low), 2.56-2.23 (moderate), and 3.24-3.91 (high). The ranges for self-efficacy levels are: 2.69-3.19 (low), 3.80-4.38 (moderate) and 3.80-4.38 (high), and the ranges for levels of readiness are 2.33-2.84 (low), 2.85-3.36 (moderate). 3.37-2.87 (high). The average mean of attitude, self-efficacy and readiness is at a moderate level.

The highest mean score for teacher attitudes is item A6, with a mean score of 3.91 (SD = 1.02). The lowest mean score is A7 1.87 (SD = 1.04), "I believe that children with special needs should be placed in special education classes". The highest mean score for self-efficacy of teachers is 4.38 (SD = 1.05) for item B15" (e.g., portfolio assessment, modified tests, performance-based assessment, etc.)". The lowest mean score is item B4 2.60 (SD =

1.02), "I can assist families in helping their children do well in school". The highest item in the Readiness section is C10 3.87 (SD = 0.77), "I believe that social development of students may influence students' performance". The lowest score was 2.33 (SD= 1.20) for item C11, "I attended a basic special education course"

3.2 The Relationships Between Attitudes and Readiness and Self-efficacy and Readiness

A Pearson's correlation coefficient was used to determine the link between attitude and readiness to implement inclusive education and the relationship between self-efficacy and willingness to implement inclusive education. In addition, a Pearson correlation coefficient test may be performed to assess the connections between IV1 (attitude), IV2 (self-efficacy), and DV since the data is of normal distribution, according to the Kolmogorov-Smirnov test (Readiness).

The link between attitude and readiness for implementing inclusive education is substantial and moderately favorable ($r = .649, \rho < .001$), indicating a relationship between attitude and readiness. Thus, an increase in positive attitudes would increase readiness.

The relationship between self-efficacy and readiness towards implementing inclusive education is significantly positive and moderate ($r = .594, \rho < .001$), implying a relationship between self-efficacy and readiness. Thus, an increased self-efficacy would increase readiness.

3.3 Regression Analysis

The impact of attitudes and self-efficacy in predicting participants' willingness to adopt inclusive education was investigated using multiple regression analysis. Attitudes and self-efficacy are predictor factors, whereas preparedness is the criterion variable among teachers in mainstream primary schools in Hulu Selangor. Both independent variables and dependent variables have a linear connection. A significant regression equation was found ($F(2,111) = 62.215, \rho < .001$), with an R^2 of .529. Participants' predicted readiness towards the implementation of inclusive education is equal to $-1.118 + .781(\text{attitude}) + .522(\text{self-efficacy})$. Participants' readiness to implement inclusive education increased .781 for each attitude and .522 for each self-efficacy. There is a significant predictive correlation of attitudes and self-efficacy on readiness to implement inclusive education among mainstream primary school teachers in Hulu Selangor.

Table 1. Regression Analysis

Model	R	R ²	Adjusted R Square	Std. Error of the Estimate
1	.727 ^a	.529	.520	.44790

a. Predictors: (Constant), Self-Efficacy, Attitude

Table 2. ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
	Regression	24.962	2	12.481	62.215	.000 ^b
1	Residual	22.268	111	.201		
	Total	47.230	113			

Table 3. MLR analysis

Model	Unstandardised Coefficients		Standardised Coefficients		
	B	SE	Beta	t	Sig.
(Constant)	-1.118	.393		-2.843	.005
1 Attitude	.781	.122	.474	6.426	.000
Self-Efficacy	.522	.104	.371	5.029	.000

a. Dependent Variable: Readiness

4. Discussion

The average mean score for attitudes is 3.10, which is considered to be in the middle range. With a mean score of 3.91, question A6, "I believe academic improvement is feasible in children with exceptional needs", had the highest mean score. Question "A7 (1.87) "I feel that children with exceptional needs should be put in special education classes" had the lowest mean score (1.87). The common response for teachers for items A7 (1.87) and item A20 (2.51) "Students with special needs should be included in regular education classrooms", shows that teachers have ambivalent feelings towards the placement of students with SEN students. However, item A5 (3.51)

shows one of the highest mean levels in which teachers agree that although children differ intellectually, physically, and psychologically, they believe that all children can learn in most environments."

According to the result of this questionnaire, while most teachers believe that children with special needs should be placed in special education classrooms, most teachers also think they should be included in regular education classes. Despite their intellectual, physical, and psychological disparities, the vast majority of teachers believe that all children can learn in most situations. This ambivalence in attitude might suggest a lack of awareness on the part of the teachers. They may lack sufficient understanding of inclusive education and educating children with special needs to make a firm judgment on where children with special needs should be placed in the educational system. Interestingly, these ambivalent views on inclusion are echoed in Bailey et al.'s (2015) study of attitudes towards inclusive education in Malaysia. While most teachers (80%) believe that inclusion is a desirable practise, teachers have a divided opinion on whether SEN students should possess the 'right' to be educated in a mainstream classroom. Bailey et al. (2014) indicated that inclusion was more an opportunity than a right as this statement is agreed by 95% of the teachers in their study. However, a vast majority (95%) of teachers believed that students with special needs are best placed in special education classes, as reflected in the study.

The average mean score for Self-efficacy of teachers is 3.75 and is in the moderate range. The findings show a high mean value for item B8, indicating "*I can control disruptive behaviour in the classroom*". However, the low mean value (2.83) for item B7 "*I am confident in my ability to prevent disruptive behaviour in the classroom before it occurs*", could imply that teachers are more confident in managing disruptive behaviour when it happens rather than engaging in preventive strategies before those behaviours occur.

Gordon (2017), in studying the Effects of Teacher Self-Efficacy with the Inclusion of Students with Autism in General Education Classrooms, found that teachers acknowledge the challenges in controlling disruptive behaviour with autism. A participant stated that it is the biggest struggle in educating students with autism in an inclusive classroom. The statements reinforce that a teachers' self-efficacy would be questioned with the efforts of including students with autism, however other reports that participants made projected the efficacious sense that teachers would gain in implementing inclusive education in the classroom. As also shown in this study, it is possible that teachers are productive in some regions of inclusive education but less confident in others. This sentiment resonated in the Malaysian context, where Razali et al. (2013) found that teachers were not prepared to teach children with autism in their class because they did not know the characteristics of children with autism and did not understand the importance of inclusive education.

Regarding readiness, items 1-10 are based on readiness in terms of skills of teaching students with special needs, and items 11- 20 include knowledge on inclusive education programs. The mean for all items is 3.22, which is in the moderate range. The mean for teaching students with special needs items is mostly higher than the knowledge subscale. These findings indicate that teachers believe that they are ready to have the skills to teach in an inclusive setting but are less prepared in terms of knowledge on inclusion and students with Special Needs. This finding reflects the results of an earlier study by Lai et al. (2017) on teachers' readiness to implement inclusive education. The study also found that teachers are more ready for skills than knowledge needed to teach in inclusive settings. The findings from both studies indicate that teachers have the skills but might not be prepared to teach in inclusive settings because they lack the knowledge to do so

The relationship between attitude and readiness towards implementing inclusive education is significantly positive and moderate ($r = .649, p < .001$). Thus an increase in positive attitudes would increase readiness. Research in teachers' attitudes towards inclusive education begins on the plausible presupposition that a new policy, such as inclusive education, should be implemented in real-world practices. Thus, practitioners, in this case, teachers, are crucial in putting this new policy into action. Moreover, it is plausible that a teacher with negative attitudes towards implementing a particular approach might obstruct its realisation (Kielblock, 2018). Thus, teachers need to have positive attitudes towards implementing inclusive education to be more willing and ready to implement the policy. Some scholars argued that the attitude-practice relation is a common belief (Sharma & Sokal, 2015) of attitude research in inclusive education. Therefore, teachers with more positive attitudes towards the inclusive policy and framework would be more likely to have the will and be ready to implement inclusive education.

Furthermore, empirical evidence proposes that teachers who have more positive attitudes towards inclusive education use more inclusive teaching strategies (Sharma & Sokal, 2015). This finding is also reflected in the study by Khan (2011) on attitudes and knowledge of secondary school teachers' on inclusive education in Bangladesh. The study discovered that teachers committed to educating all students would go above and beyond

to adjust their teaching methods to accommodate all pupils. Other researchers agree, arguing that a teacher's attitude toward inclusive education as a social justice project helps them become change agents (Hassan et al., 2017), boosting their willingness and preparedness to adopt inclusive education in their classrooms.

A teacher's commitment to a sense of social justice and their positive attitudes towards inclusive education would indicate that they would be ready and willing to go the extra mile in accommodating their learners in an inclusive classroom (Pantić & Florian, 2015). Teachers need to shift their attitudes and beliefs, to realise that every child has been entrusted to schools to be rightly educated. Hence teachers need to explore ways of working with each child. They need to believe that mastering a wide range of instructional methods and how to apply them effectively is a good advantage (Rabi et al., 2018). The attitude change can be enhanced by providing support and training to teachers about inclusive education. When teachers show a high commitment to implementing inclusive education, they would be more willing and prepared to implement inclusive practices in the classroom. Black-Hawkins and Florian (2012) investigated teachers' craft expertise in implementing inclusive education in Scottish primary schools and concluded that teachers who demonstrate a commitment to fulfilling the needs of all children have a greater chance of adopting inclusive education. This finding further supports the theory that instructors with a positive attitude toward inclusion are more likely to be enthusiastic and ready to implement inclusive education in their classes using inclusive teaching approaches. In their research of Malaysian teachers' preparedness for inclusive education, Lai et al. (2017) found that mainstream instructors did not demonstrate an interest in understanding the requirements of the Inclusive Education Program and students with special needs. This apparent lack of interest might subsequently impact the efficiency when inclusive education is implemented. This study also found a link between teachers' attitudes and preparedness, it is essential to include these perspectives when assessing teachers' readiness to adopt Inclusive Education in Malaysia. Teachers with a good attitude and a solid commitment to implementation are more likely to be ready and prepared to teach inclusive classrooms.

The connection between self-efficacy and preparedness to undertake inclusive education is modest and significantly favourable ($r = .594$, $P < .001$). As a result, increased self-efficacy leads to increased preparedness. Teachers who have a high level of teaching efficacy are more likely to be committed to teaching in a diverse classroom. Tschannen-Moran and Hoy (2007) noted that teachers' self-efficacy is a small idea with a significant impact. Acknowledgement of how teachers judge their capabilities in teaching students with SEN correlates with their attitudes, behaviour and preparedness to teach in inclusive classrooms. One of Themane and Thobejane's (2019) investigations to make education more inclusive is that instructors must act as change agents. If instructors think that all students can learn, they would be more ready to modify their methodology to accommodate the students when they teach. Florian (2012) echoes this conclusion, noticing the difficulties of an unpredictably changing instructional environment, which leaves instructors feeling inept and lacking the confidence needed to implement inclusive education. According to Themane and Thobejane (2019), teachers' suggestions have significant consequences. They are especially true in countries like South Africa, Zimbabwe and Malaysia, where inclusive education is still in its infancy (Mandina, 2012). Since self-efficacy in this study shows a predictive correlation towards readiness towards implementing inclusive education, self-efficacy should be considered in increasing the preparedness of mainstream primary school teachers towards inclusive education.

Individual self-efficacy beliefs influence how motivated and persevering people are when faced with challenges and hurdles (Bandura, 1977). As a result, those with firm self-efficacy beliefs are more likely to persist in difficult situations. In contrast, scepticism and ambiguity in their views are more likely to give up or reduce their efforts (Bandura, 1989). Moreover, self-efficacy beliefs might be shaped by individuals' judgments, thought processes and responses, when individuals interact within a specific environment (Bandura, 1977). For example, individuals who have the perception that they are underqualified or incompetent to manage a particular change in the climate might focus on their perceived inadequacy (Bandura 1981, 1989) instead of their capacity to grow amid challenges in the environment.

This scenario shows that teachers with high self-efficacy would be more willing and ready to take more risks and explore new methods to meet the needs of SEN children in an inclusive classroom. To ensure that the implementation of inclusive education in Malaysia is successful, it is in dire need of teachers who are more inclined to persist in utilising different instructional methods to provide students with SEN a fair chance at thriving in an inclusive classroom. Teachers need to be able to respond to challenging and stressful situations. Since the implementation of inclusive education is relatively recent in Malaysia, there are bound to be challenging situations that teachers have to manage. Teachers should perceive the implementation of inclusive education as a challenge rather than feel threatened by the stress and challenges that could occur in inclusive education. A strong sense of persistence and perseverance are vital for teachers to be willing and ready to

undertake the challenges that come with teaching in an inclusive classroom

Sharma and Sokal (2015) used four factors to determine pre-service teachers' preparedness to teach in an inclusive classroom: attitudes, self-efficacy, worries, and interests of pre-service teachers. This study focuses on two of those elements, attitudes and self-efficacy. The findings show that a significant regression equation was found ($F(2,111) = 62.215, p < .001$), with an R^2 of .529. Participants' predicted readiness towards the implementation of inclusive education is equal to $-1.118 + .781(\text{attitude}) + .522(\text{self-efficacy})$. Participants' readiness to implement inclusive education increased .781 for each attitude and .522 for each self-efficacy. Both attitude and self-efficacy were significant predictors of readiness towards implementing inclusive education, indicating a significant predictive correlation of attitudes and self-efficacy on readiness towards the implementation of inclusive education among mainstream primary school teachers in Hulu Selangor.

Teachers' readiness might break one of the most significant barriers in the implementation of inclusive education. There will be fewer barriers and challenges in successfully implementing inclusion education when teachers are ready and willing to teach in an inclusive environment. Despite that, it is essential to acknowledge that there could be many other reasons that underpin the fact that some SEN students face difficulties in academic and social interactions at school. This difficulty affects the child and possibly his classmates' social interactions and learning process in an inclusive classroom (Sharma & Sokal, 2015). Many variables contribute to the difficulty of teaching in an inclusive classroom. For example, the lack of understanding and awareness of inclusive education might be a barrier to inclusion. Furthermore, when special education teachers and general education teachers fail to reach a mutual agreement, it is challenging to implement inclusive education successfully. In addition, teachers' readiness to teach Special Needs students in an inclusive setting might be a significant cause when the implementation of inclusive education programs fails (Rabi et al., 2018).

Without the desire and preparedness of researchers, it would be more challenging to transform new legislation into inclusive practices properly. Teachers' attitudes on their responsibility to educate and care for children with special needs are critical in moving schools away from segregation and progressing towards inclusivity in the educational system. Findings reflect that working effectively in inclusive settings requires positive attitudes and a sense of self-efficacy towards SEN students. As a result, it's critical to look into how attitudes and self-efficacy affect the implementation of inclusive education. Because this study shows that the two components have a role in predicting teachers' preparation to implement inclusive education, we must include them when assessing teachers' preparedness.

5. Conclusion

In conclusion, it is promising that at the infancy stage of inclusive education in Malaysia, teachers' attitudes, self-efficacy, and readiness for inclusive education in a relatively small town in Malaysia are at moderate levels. This means that there is already some awareness among teachers in mainstream schools, even in rural areas in Malaysia. The study has projected attitudes and self-efficacy to predict factors in teachers' readiness to implement inclusive education. Therefore, the promotion of positive attitudes and high self-efficacy should be considered when contemplating a teacher's readiness. Inclusion awareness and training programs can include elements of building up positive attitudes and self-efficacy to prepare teachers to be more willing and ready to be a significant part of inclusive education. It is commendable that although this study indicates that teachers believe they are less prepared in terms of knowledge on inclusion and students with Special Needs, they do think they are ready and willing in terms of skills to teach in an inclusive setting. Hence, positive attitudes and high self-efficacy can be components to consider in boosting teachers' readiness to implement inclusive education.

Every child should have a right to quality education. More inclusive programs in mainstream schools would be needed with a zero-reject policy and the rising numbers of students with special needs. Hence teachers' readiness to implement inclusive education is a highly relevant issue to be investigated. It would not be fair to accept all children into the mainstream schooling system without preparing teachers on ways to teach them. Attitudes and self-efficacy could be considered when investigating teachers' readiness to implement inclusive education in the future.

6. Implication

Roles of attitudes and self-efficacy on teachers' readiness must be investigated so that resource content could be more explicitly and purposefully developed to develop teachers' understanding of SEN students and recommended inclusion practices. This endeavour could subsequently impact other children's awareness and acceptance of disabilities and peers with special needs (Hadadian & Hargrove, 2001), as teachers are the primary role models for students in a classroom. Since Zero Reject Policy in Malaysia would eventually involve increasing schools adopting the inclusive education model, it is crucial to spread awareness on inclusive

education and what it entails. There are still low levels of awareness among communities in Malaysia, especially in smaller towns and rural areas. Most teachers are less aware of the inclusive framework and strategies to teach students with special needs in an inclusive setting. The findings from this study can also be considered when designing courses and in-service training programs for teachers on inclusive education.

This study could be conducted on a bigger scale, employing mixed-methods methodology, in more diverse settings, like urban areas, other districts and states in Malaysia, all of which are demographically and geographically diverse. It would be interesting to observe what the findings would yield by creating a standardised measuring instrument to utilise in schools to gauge levels of readiness in schools across Malaysia. The dimensions can pertain to physical spaces, administrators, staff members, and other children with SEN. A comparison study between states in Malaysia in their levels of implementation of inclusive education. In Malaysia's incubation period of the Zero Reject Policy, it is pertinent to investigate teachers' readiness in Malaysia to contribute to the body of research on Zero reject policy and inclusive education. In addition, readiness can be explored regarding other aspects like school climate or collaboration. Teachers in Malaysia are encouraged to do more action research to enrich data. Qualitative studies that address the implementation of inclusive education would also be beneficial.

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The Level of the Functional Movement Screen Among Traditional Dancers

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Abstract

Movement assessments are commonly used to assess athlete's risk of injury as well as basic and specific skill movement patterns; however, dance is identified to be differing from sports because the average dancer's training load is higher than the athletes. This study aims to identify the difference in the Functional Movement Screen (FMS) level among traditional dancers in Malaysia. A quasi-experimental study design was adopted, which involved 66 dancers (M = 33; F = 33). The study comprised traditional dancers from three ethnic backgrounds, namely, Malay, Chinese and Indian. The descriptive analysis described the level of the dancers' FMS, as follows: Malay (M = 16.18, SD = 2.062), Chinese (M = 18.50, SD = 1.102), Indian (M = 18.23, SD = 1.445). The ANOVA analysis found a significant difference in the FMS scores among all three groups of dancers, $F(2,63) = 14.026, p > .000$. The deep squat, hurdle step, shoulder mobility, active straight leg raise and trunk stability tests for push-up indicated a significant difference, whereas the inline lunges test and rotational stability tests showed no significance difference. However, the Post Hoc analysis showed no significant difference between the Chinese and Indian dancers. It can be concluded that there is a difference in FMS scores between Malay, Chinese and Indian dancers. FMS may be a useful tool to help identify dancers about the risk of injury and improve their movement quality.

Keywords: Functional Movement Screen, FMS, Traditional Dancers

1. Introduction

1.1 Research Background

A movement assessment serves to assess the quality of a person's basic movements. This movement assessment involves all the major muscles and joints in the body such as the spine and pelvic bones. This testing method is commonly used by physiotherapists, physicians, and coaches to assess the risks of injury and movement patterns of basic and specific skills of athletes (Conlon, 2013). The Functional Movement Screen (FMS) is an initial assessment performed on athletes by physical therapists to identify weaknesses and qualities in their movement patterns (Cook, Burton, & Hoognboom, 2006). It is also user-friendly, has a low-cost as well as a reliable tool, which has gained attention from researchers and physical therapists since its development (Smith, Chimera, Wright, & Warren, 2013). FMS consists of seven movements or tests to assess namely deep squats, hurdle steps, inline lunges, shoulder mobility, active straight leg raise, trunk stability push-ups and rotary stability. To perform all these movements, participants need muscle strength, flexibility, coordination, balance, range of motion and proprioception of specific joint mobility as well as a standardized movement system (Cook et al., 2006). Deficiency of one of these elements will result in an increased risk of muscle and joint injuries (Frost, Beach, Callaghan, & McGill, 2012). According to Lockie, Schultz, Jordan, Callaghan, Jeffriess, and Luczo (2015), FMS is not only used to predict injuries, but also it seems to have low efficacy in identifying movement weaknesses in complex movements ranging from fast movements from multiple directions and jumping.

1.2 Research Problem

FMS has been used by many researchers to identify injury risks in a wide variety of populations (Lisman, O'Connor, Deuster, & Knapik, 2013). This test is important for predicting injuries in different populations of both athletes and non-athletes because the roles played are different during early recovery (Cosio-Lima, Knapik,

Shumway, Reynolds, Lee, Greska, & Hampton, 2016). Although dance is admittedly different from other sports, it is surprising that the average weekly training load involved in dance is higher than that of football athletes in one season (Rogalski, Dawson, Heasman, & Gabbett, 2013). A study has been conducted and utilized a limited study population using female university contemporary and ballet dancers shown the lack of studies comparing movement assessment tests between various traditional dances of different ethnicities and genders prompted the author to conduct this study (Armstrong, 2020). Over the years, dancers perform repetitive movements to master the skills and quality of their performance (Shah, Weiss, & Burchette, 2012). This tires the dancer and makes them prone to injury. Dance-related injury rates are reported to average between 67–95% annually (Fuhrmann, Brayer, Andrus, & McIntosh, 2010).

Due to the high percentage of injuries, professionals in the field of dance science have sought to understand the biomechanics of dance to promote injury prevention in elite dancers. While attention is growing in studies, most focus has been placed on ballet dancers. Hence, researchers have highlighted the need for more research to be done on injuries and their consequences in various dances. Leg and ankle injuries are common, and sprains on the ankle are common among traditional dancers (Leanderson, Leanderson, Wykman, Strender, Johansson, & Sundquist, 2011). The three most frequently reported diagnoses in professional traditional dancers were muscle tension (28%), sprained ligament (23%) and chronic pain such as tendonitis and bursitis (21%) (Shah et al., 2012). According to Kenny, Palacios-Derflingher, Shi, Whittaker and Emery (2019) lower body injuries in dancers and sports athletes are practically identical, involving ligament and overuse. This was proven when Bharatanatyam dancers recorded back injuries about 42.5%, knee injuries of 28.3% and 18.63% of ankle injuries throughout their careers and injuries throughout their lifetime (Masal & Borkar, 2021). The majority of dance injuries were classified as overuse injuries, which occurred as a result of physical activity that was not followed by proper recovery periods.

An imbalance between training load and rehabilitation training results in fatigue and leads to injury (Soligard et al., 2016). A better understanding of injuries and movement analysis for dancers should be conducted to help in the planning and preparation of a systematic training design to prevent overuse injuries (Armstrong, 2020). As stated in a recent study by Armstrong (2020), it is important to examine movement quality and injury risk in dancers of different ethnic backgrounds to determine the level of risk in dance. However in Malaysia, this research focuses on 3 major ethnic's dances such as Malay, Chinese and Indian and also very limited studies in the field of dance and FMS. Additionally, this research is also important prior to help sports scientists to compare the differences of traditional dance with fitness components such as flexibility and body coordination. Therefore, it is necessary to understand that FMS is not only for assessing the extent of the injury, the recovery process and the development of gross motor skills but also more than that. When the movement quality of a dancer has been improved with good training techniques, it may help the dancers to improve specific performance techniques with their basic performance and at the same time help them to perform better during competitions or performances and get better results. There are very limited studies on analysis of movement and screening of injuries in dance, especially in traditional dances among various races. To add on, most of the studies are focused mainly on western society dances such as ballet and contemporary dance.

1.3 Literature Review

Compared to other professions, a professional dancer's career time frame is generally shorter. Dancers who suffer injuries have to spend their time in recovering and they may miss auditions, lose their salaries, or lose their contracts, which could also mean the end of their careers (Solomon, Solomon, Micheli, & McGray, 1999). Most dance injuries are chronic and occur in the lower body and hips, and the risk factors for these injuries are ascribed to a lack of strength in the abdominal muscles (core stability) (Rickman, Ambegaonkar & Cortes, 2012). Dance is a high-intensity physical activity that requires a lot of energy and as such, puts dancers at a high risk of experiencing musculoskeletal injuries.

Dancers spend at least 1.5 hours in their daily classes, which is coupled with longer and more time-consuming performance training (Miller, 2006). Teen dancers can increase their training for about 20 to 30 hours per week when they become pre-professional, and this will continue to increase as they enhance to professional levels due to the high skill requirements (Wyon et al., 2004). Establishing and implementing effective assessment tools can positively impact dancers' physical and mental health by allowing them to dance with a low risk of injury (Armstrong & Relph, 2018). However, developing movement assessment batteries in dance is much more difficult compared to sports because dance is more artistic and emotional (Liederbach, 1997).

Since the development of the FMS, studies have been conducted with many athletes, including professional athletes in specific sports, university athletes, high school students, and even athletes such as firefighters and

military to determine and predict injury risk. Nevertheless, there was modest evidence shown that FMS test results can identify and predict injury risk (Kazman et al., 2014). This test is important for predicting injury in different populations, whether they are athletes or non-athletes, because of the different roles they play in the early recovery stage (Cosio-Lima et al., 2016). Despite that, FMS works to help trainers understand the importance of implementing basic movement training types to improve movement patterns (Boguszewski, Jakubowska, Adamczyk, & Bialoszewski, 2015).

1.4 Significance of the Study

Most FMS studies are on the same population of athletes, and there is very little research in the area of dance, especially traditional dance. Dancers need to have a better understanding about movement assessment tools in order to perform better. For instance, research findings on dancers' FMS levels can help coaches provide appropriate training programs based on dance type. A good training program can reduce dance injuries such as overuse and fatigue. Therefore, the main purpose of this research is to identify FMS level among Malay, Chinese and Indian dancers. Moreover, it is also purposed to determine the difference between FMS scores and the seven test scores in FMS among Malay, Chinese and Indian dancers.

2. Method

2.1 Research Design

This research utilizes a quantitative survey study research design to identify and compare the differences in the FMS scores among Malay, Chinese and Indian traditional dancers.

2.2 Study Population

This study used purposive sampling, which involved individual judgment in selecting the sample. This was based on research knowledge and the specific purpose of the research (Noraini, 2013). The sample of this study involved a sample size consisting of 66 dancers that were divided into 3 groups of dancers. Each group had 22 dancers who were equally divided according to gender. The number of subjects in this study was determined through GPower device version 3.1. Subjects were selected based on several set criteria such as dancers active in dance schools and clubs, who train at least six hours a week, have experience in dance for five years and above, free from any injuries and who are over the age of 18 years.

2.3 Research Instrument

The main instrument used in this study was the Functional Movement Screen (FMS) developed by Cook, Burton, Fields and Kiesel (1998). FMS consists of behaviours tested in the following sequences such as deep squats, hurdle steps, inline lunges, shoulder mobility, active straight leg raise, trunk stability push-ups and rotary stability. All exercises were performed bilaterally except the deep squats and trunk stability push-ups. Each FMS action was scored on a scale of 0 to 3 according to the ability and movement of the subjects. Subjects who experienced pain while performing three clearing tests, namely shoulder mobility, trunk stability push-ups and rotary stability, obtained a score of 0 for the exercise. For acts done bilaterally, scores were recorded for both sides, but only the lowest score was considered. The final score for each action was summed up to obtain the total score and the maximum score that could be recorded is 21 points.

2.4 Data Analysis

The data collected was processed using the Statistical Package for Social Sciences (SPSS) version 20. Data analysis was performed using descriptive statistics and the ANOVA test to identify differences in the level of FMS among Malay, Chinese and Indian dancers. The alpha value was set at $p < 0.05$ to explain the statistical significance of the comparison.

3. Results

3.1 Level of FMS Scores Among Malay, Chinese and Indian Dancers

Firstly, the analysis of the descriptive study on FMS scores level among Malay, Chinese and Indian traditional dancers were recorded. Chinese dancers recorded the highest FMS score mean (SD) with ($M = 18.50$, $SD = 1.102$), followed by Indian dancers at ($M = 18.23$, $SD = 1.445$) and Malay dancers recorded the lowest at ($M = 16.18$, $SD = 2.062$). Malay dancers had the highest score in inline lunges ($M = 2.68$, $SD = .477$) and the lowest score in the trunk stability push-ups ($M = 1.86$, $SD = .710$). For Chinese dancers, they recorded the highest score in active straight leg raise ($M = 3.00$, $SD = .000$) and the lowest score in trunk stability push-ups ($M = 2.27$, $SD = .631$). Meanwhile, Indian dancers recorded the highest score in deep squats ($M = 2.86$, $SD = .351$) as well as active straight leg raise ($M = 2.86$, $SD = .351$) and the lowest score in rotary stability ($M = 2.14$, $SD = .468$). Mean scores showed all three groups recorded low scores in the push-up trunk stability test.

Table 1. Descriptive Analysis of FMS Score Among Malay, Chinese and Indian Dancers

Ethnicity	Variable	N	Mean	SD
Malay	Deep Squat	22	2.45	.596
	Hurdle Step	22	2.18	.501
	Inline Lunges	22	2.68	.477
	Shoulder Mobility	22	2.41	.666
	Active Straight Leg Raise	22	2.59	.503
	Trunk Stability Push up	22	1.86	.710
	Rotary Stability	22	2.00	.436
	Total	22	16.18	2.062
Chinese	Deep Squat	22	2.32	.477
	Hurdle Step	22	2.82	.395
	Inline Lunges	22	2.73	.456
	Shoulder Mobility	22	2.91	.294
	Active Straight Leg Raise	22	3.00	.000
	Trunk Stability Push up	22	2.27	.631
	Rotary Stability	22	2.32	.477
	Total	22	18.50	1.102
Indian	Deep Squat	22	2.86	.351
	Hurdle Step	22	2.45	.510
	Inline Lunges	22	2.77	.429
	Shoulder Mobility	22	2.77	.429
	Active Straight Leg Raise	22	2.86	.351
	Trunk Stability Push up	22	2.36	.658
	Rotary Stability	22	2.14	.468
	Total	22	18.23	1.445

3.2 Differences in FMS Scores Among Malay, Chinese and Indian Dancers

Table 2. ANOVA Analysis on FMS Score among Malay, Chinese and Indian Dancers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	70.636	2	35.318	14.026	.000
Within Groups	158.636	63	2.518		
Total	229.273	65			

Table 3. Post Hoc Test Analysis on FMS Score among Malay, Chinese and Indian Dancers

Dependent Variable: FMS Score

Tukey HSD

(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Malay	Chinese	-2.318*	.478	.000	-3.47	-1.17
	Indian	-2.045*	.478	.000	-3.19	-.90
Chinese	Melayu	2.318*	.478	.000	1.17	3.47
	Indian	.273	.478	.837	-.88	1.42
Indian	Malay	2.045*	.478	.000	.90	3.19
	Chinese	-.273	.478	.837	-1.42	.88

*. The mean difference is significant at the 0.05 level.

Mean (SD) FMS acting for Chinese dancers was (M = 18.50, SD = 1.102) and Indian dancers was (M = 18.23, SD = 1.445), which were higher than the Malay dancers at (M = 16.18, SD = 2.062). The total mean (SD) of

FMS for the three groups was (M = 17.64, SD = 1.878). There were significant differences between the FMS scores among Malay, Chinese and Indians dancers, $F(2,63) = 14.026, p > .000$. However, the Post Hoc Test results found that only Malay with Chinese dancers ($p < .000$) and Malay with Indian dancers ($p < .000$) had significant differences with a mean difference of 2.318 and 2.045.

3.3 Differences in Deep Squat Scores Among Malay, Chinese and Indian Dancers

The mean score (SD) of deep squats for Indian dancers was (M = 2.86, SD = .351) and Malay dancers was (M = 2.45, SD = .596), which were higher than the Chinese dancers, which was (M = 2.32, SD = .477). The total mean (SD) for deep squats was (M = 2.55, SD = .532). The hypothesis of this study stated that there were significant differences between the deep squats among Malay, Chinese and Indian dancers, $F(2,63) = 7.537, p < .001$. However, the results of the Post Hoc Test found that only Chinese and Indians dancers had a significant difference of $p < .001$, with a mean difference of 0.545.

Table 4. ANOVA Test Analysis of Deep Squat Score among Malay, Chinese and Indian Dancers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.545	2	1.773	7.537	.001
Within Groups	14.818	63	.235		
Total	18.364	65			

Table 5. Post Hoc Test Analysis of Deep Squat Score among Malay, Chinese and Indian Dancers

Dependent Variable: Deep Squat

Tukey HSD

(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Malay	Chinese	.136	.146	.622	-.21	.49
	Indian	-.409*	.146	.018	-.76	-.06
Chinese	Malay	-.136	.146	.622	-.49	.21
	Indian	-.545*	.146	.001	-.90	-.19
Indian	Malay	.409*	.146	.018	.06	.76
	Chinese	.545*	.146	.001	.19	.90

*. The mean difference is significant at the 0.05 level.

3.4 Differences in the Hurdle Step Scores Among Malay, Chinese and Indian Dancers

Table 6. ANOVA Test Analysis of Hurdle Step Score among Malay, Chinese and Indian Dancers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.485	2	2.242	10.091	.000
Within Groups	14.000	63	.222		
Total	18.485	65			

Table 7. Post Hoc Test Analysis of Hurdle Step Score among Malay, Chinese and Indian Dancers

Dependent Variable: Hurdle Step

Tukey HSD

(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Malay	Chinese	-.636*	.142	.000	-.98	-.30
	Indian	-.273	.142	.142	-.61	.07
Chinese	Malay	.636*	.142	.000	.30	.98
	Indian	.364*	.142	.034	.02	.70
Indian	Malay	.273	.142	.142	-.07	.61
	Chinese	-.364*	.142	.034	-.70	-.02

*. The mean difference is significant at the 0.05 level.

The mean score (SD) of hurdle steps for Chinese dancers was (M = 2.82, SD = .395) and Indian dancers was (M = 2.45, SD = .510), which were higher than the Malay dancers at (M = 2.18, SD = .501). The total mean (SD) for hurdle steps was (M = 2.48, SD = .533). The hypothesis of this study stated that there were significant differences between the scores of hurdle steps among Malay, Chinese and Indian dancers, $F(2,63) = 10.091, p < .000$. However, the Post Hoc Test results found that only Malays with Chinese dancers ($p < .000$) and China with India dancers ($p < .034$) had significant differences with a mean difference of 0.636 and 0.364.

3.5 Differences in the Inline Lunges Scores Among Malay, Chinese and Indian Dancers

The mean score (SD) of inline lunges for Indian dancer was (M = 2.77, SD = .429) and Chinese dancers was (M = 2.73, SD = .456), higher than the Malay dancers which was (M = 2.68, SD = .477). The total mean (SD) for inline lunges was (M = 2.73, SD = .449). The hypothesis of this study indicated that there were no significant differences between the inline lunges among Malay, Chinese and Indian dancers, $F(2,63) = .220, p > .803$. Likewise, Post Hoc Test results also found no significant differences between the dancers. The mean difference for both Malay and Chinese dancers with Indian and Chinese dancers was 0.045 and Malay with Indian dancers was 0.091.

Table 8. ANOVA Test Analysis of Inline Lunges Score among Malay, Chinese and Indian Dancers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.091	2	.045	.220	.803
Within Groups	13.000	63	.206		
Total	13.091	65			

Table 9. Post Hoc Test Analysis of Inline Lunges Score among Malay, Chinese and Indian Dancers

Dependent Variable: Inline Lunges

Tukey HSD

(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Malay	Chinese	-.045	.137	.941	-.37	.28
	Indian	-.091	.137	.785	-.42	.24
Chinese	Malay	.045	.137	.941	-.28	.37
	Indian	-.045	.137	.941	-.37	.28
Indian	Malay	.091	.137	.785	-.24	.42
	Chinese	.045	.137	.941	-.28	.37

*. The mean difference is significant at the 0.05 level

3.6 Differences in the Shoulder Mobility Scores Among Malay, Chinese and Indian Dancers

The mean score (SD) of shoulder mobility for Chinese dancers was (M = 2.91, SD = .294) and for Indian dancers was (M = 2.77, SD = .429), higher than the Malay dancers which was (M = 2.41, SD = .666). The total mean (SD) for shoulder mobility was (M = 2.70, SD = .525). The hypothesis of this study stated that there were significant differences between the scores of shoulder mobility among Malay, Chinese and Indian dancers, $F(2,63) = 6.173, p < .004$. However, the Post Hoc Test results found that only Malay and Chinese dancers ($p < .003$) with Malay and Indian dancers ($p < .042$) had significant differences with a mean difference of 0.500 and 0.364.

Table 10. ANOVA Test Analysis of Shoulder Mobility Score among Malay, Chinese and Indian Dancers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.939	2	1.470	6.173	.004
Within Groups	15.000	63	.238		
Total	17.939	65			

Table 11. Post Hoc Test Analysis of Shoulder Mobility Score among Malay, Chinese and Indian Dancers

Dependent Variable: Shoulder Mobility

Tukey HSD

(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Malay	Chinese	-.500*	.147	.003	-.85	-.15
	Indian	-.364*	.147	.042	-.72	-.01
Chinese	Malay	.500*	.147	.003	.15	.85
	Indian	.136	.147	.625	-.22	.49
Indian	Malay	.364*	.147	.042	.01	.72
	Chinese	-.136	.147	.625	-.49	.22

*. The mean difference is significant at the 0.05 level.

3.7 Differences in Active Straight Leg Raise Scores Among Malay, Chinese and Indian Dancers

The mean score (SD) for active straight leg raise for Chinese dancers was (M = 3.00, SD = .000) and Indian dancers was (M = 2.86, SD = .351), higher than the Malay dancers which was (M = 2.59, SD = .503). The total mean (SD) for active straight leg raise is (M = 2.82, SD = .389). The hypothesis of this study stated that there were significant differences in scores of active straight legs raise among Malay, Chinese and Indian dancers, $F(2,63) = 7.603$, $p < .001$. However, the Post Hoc Test results found that only Malay with Chinese dancers ($p < .001$) and Malay with Indian dancers ($p < .035$) had significant differences with a mean difference of 0.409 and 0.273.

Table 12. ANOVA Test Analysis of Active Straight Leg Raise Score among Malay, Chinese and Indian Dancers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.909	2	.955	7.603	.001
Within Groups	7.909	63	.126		
Total	9.818	65			

Table 13. Post Hoc Test Analysis of Active Straight Leg Raise Score among Malay, Chinese and Indian Dancers

Dependent Variable: Active Straight Leg Raise

Tukey HSD

(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Malay	Chinese	-.409*	.107	.001	-.67	-.15
	Indian	-.273*	.107	.035	-.53	-.02
Chinese	Malay	.409*	.107	.001	.15	.67
	Indian	.136	.107	.414	-.12	.39
Indian	Malay	.273*	.107	.035	.02	.53
	Chinese	-.136	.107	.414	-.39	.12

*. The mean difference is significant at the 0.05 level.

3.8 Differences in the Trunk Stability Push-up Scores Among Malay, Chinese and Indian Dancers

The mean score (SD) of trunk stability push-ups for Indian dancers was (M = 2.36, SD = .658) and Chinese dancers was (M = 2.27, SD = .631), higher than the Malay dancers which was (M = 1.86, SD = .710). The total mean (SD) for the push-up stability trunk was (M = 2.17, SD = .692). The hypothesis of this study stated that there were significant differences between the scores of trunk stability push-ups among Malay, Chinese and Indian dancers, $F(2,63) = 3.506$, $p < .036$. However, the Post Hoc Test results found that only Malay and Indian dancers had significant differences $p < .041$, with a mean difference of 0.500.

Table 14. ANOVA Test Analysis of Trunk Stability Push-Up Score among Malay, Chinese and Indian Dancers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.121	2	1.561	3.506	.036
Within Groups	28.045	63	.445		
Total	31.167	65			

Table 15. Post Hoc Test Analysis of Trunk Stability Push-Up Score among Malay, Chinese and Indian Dancers

Dependent Variable: Trunk Stability Push up

Tukey HSD

(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Malay	Chinese	-.409	.201	.113	-.89	.07
	Indian	-.500*	.201	.041	-.98	-.02
Chinese	Malay	.409	.201	.113	-.07	.89
	Indian	-.091	.201	.894	-.57	.39
Indian	Malay	.500*	.201	.041	.02	.98
	Chinese	.091	.201	.894	-.39	.57

*. The mean difference is significant at the 0.05 level.

3.9 Difference in the Rotary Stability Scores Among Malay, Chinese and Indian Dancers

The mean score (SD) of rotary stability for Chinese dancers was ($M = 2.32$, $SD = .477$) and India dancers was ($M = 2.14$, $SD = .468$), higher than Malay dancers which was ($M = 2.00$, $SD = .436$). The total mean (SD) for rotary stability is ($M = 2.15$, $SD = .472$). The hypothesis of this study stated that there were no significant differences between the score of rotary stability among Malay, Chinese and Indian dancers, $F(2,63) = 2.643$, $p > .079$. Similarly, Post Hoc Test found no significant differences between dancers. The mean difference between Malay with Chinese dancers was 0.318, Indian with Chinese dancers was 0.182 and Malay with Indian dancers was 0.136.

Table 16. ANOVA Test Analysis of Rotary Stability Score among Malay, Chinese and Indian Dancers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.121	2	.561	2.643	.079
Within Groups	13.364	63	.212		
Total	14.485	65			

Table 17. Post Hoc Test Analysis of Rotary Stability Score among Malay, Chinese and Indian Dancers

Dependent Variable: Rotary Stability

Tukey HSD

(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Malay	Chinese	-.318	.139	.064	-.65	.02
	Indian	-.136	.139	.591	-.47	.20
Chinese	Malay	.318	.139	.064	-.02	.65
	Indian	.182	.139	.395	-.15	.52
Indian	Malay	.136	.139	.591	-.20	.47
	Chinese	-.182	.139	.395	-.52	.15

*. The mean difference is significant at the 0.05 level.

4. Discussion and Conclusion

4.1 Discussion

The FMS is a set of tests developed to assess an individual's dynamic movement capacity as well as to detect

injuries and the quality of their movement (Cook et al., 2006 (1)). Studies related to performance and injuries among different populations are needed to reduce the number of dancers who suffer injuries, which may end their careers as a dancer (Armstrong, 2020). The findings showed that there was a significant difference of $p < .000$ between the three groups of dancers in terms of the FMS score. However, through the Post Hoc test, it was found that there was no significant difference between Chinese and Indian dancers. Chinese dancers recorded the highest mean (18:50) compared to the Malay and Indian dancers. This showed a significant difference between Malay with Chinese dancers and Malay with Indian dancers, probably because Chinese and Indian dance have much in common in terms of the FMS tests such as gait, "Namaskaram" in Bharatanatyam and the squat style of the Lion Dance. This was supported by Fernandez-Arguelles, Rodriguez-Mansilla, Antunez, Garrido-Ardila and Munoz (2015) where they stated that dance is closely associated with improved balance, muscle strength, coordination, rhythm, and body control. This combination is found only in a few types of dances and mostly consists of classical dances from various ethnicities and races.

Lower body injuries are defined as injuries to the lower butt, calves, thighs, knees, fingers, and ankles (Van Seters, Van Rijn, Van Middelkoop, & Stubbe, 2020). The findings showed a significant difference of a total $p < .001$ between the three groups of dancers for the deep squats score. However, the Post Hoc test showed no significant difference between Chinese and Malay dancers. Indian dancers recorded the highest mean (2.86) compared to Malay and Chinese dancers. The possible reason for this result could be the fact that the squat itself is one of the basic movements in Indian traditional dances such as Bharatanatyam and Kuchipudi, which is "Namaskaram". This was proven to be true when Bharatanatyam dancers recorded 42.5% lower back injuries, 28.3% knees injuries and 18.63% ankles injuries throughout their careers and lifelong injuries (Masal & Borkar, 2021)

The findings showed that there was a significant difference of $p < .000$ between the three groups of dancers for the hurdle step score. However, the Post Hoc test found no significant difference between Malay and Indian dancers. Chinese Dancers, however, recorded the highest mean (2.82) compared to Indian and Malay dancers. The mean difference between the Chinese and Malay dancers was very significant and this may be due to the movement of the Lion Dance, which requires dancers to stand on one leg. These findings are closely related to the study of Rickman et al., (2012) who stated that most injuries in dance are chronic and occur in the lower back and hips. Researchers also stated that the risk factor for this injury is due to the weakness of the abdominal muscles (core stability).

The findings showed no significant difference between the three groups of dancers for the score of inline lunges. The results of the Post Hoc test also found no significant difference of $p > .803$ between the three groups of dancers. The gap between the means is not that much, in which Indian dancers obtained the highest mean (2.77) and Malay dancers recorded the lowest mean (2.68). This may be because the dances of these three groups of dancers focus a lot on balance and stability skills in the Joget Dance, Lion Dance and Bharatanatyam. According to Phillips (2005), the level of stability and balance of a professional dancer is higher when compared to a professional athlete. This is because dance is more prone to extreme movements over a long period of time. He also noted that joint stability and passive structures are highly dependent on the quality of an individual's collagen tissue. These tissues form passive structures such as ligaments, knee capsules, fascia, and tendons.

According to Mengelkock, Highsmith and Morris (2014), upper body movement mobility is very important for a dancer to avoid injuries to the spine, pelvic bones, and shoulders. The findings showed that there was a significant difference of $p < .004$ between the three groups of dancers for the shoulder mobility score. However, the Post Hoc test found no significant difference between Malay with Indian dancers and Chinese with Indian dancers. Chinese dancers recorded the highest mean (2.91) compared to Indian and Malay dancers. This may be due to upper body injuries involving the dancers' joints that they themselves have not yet identified. Motta-Valencia (2006) explained that most injuries affecting dancers are considered overuse injuries such as tendons and joints. This is closely related to the dances of these three groups, which prioritize extreme hand movements.

According to Shah et al., (2012), the majority of muscular injuries that occur involve the lower body where foot and ankle injuries recorded a high injury rate with (20.5% - 28.0%), knee (16.0% - 21.4%) and lower waist (13.4% - 17.0%). The findings showed that there was a significant difference of $p < .001$ between the three groups of dancers for the active straight leg raise score. However, the Post Hoc test found no significant difference between Chinese and Indian dancers. Chinese dancers record the highest mean (3.00) compared to Indian and Malay dancers. All three groups recorded a good mean score, and this proved they had good flexibility and stability between the hamstrings and the pelvis. However, Kenny et al., (2019) noted that lower body injuries for dancers and sports athletes are almost identical and mostly involve ligaments and overuse factors.

Dancers can vary the coordination of body movements compared to non-dancers; mainly in the upper and lower body sagittal planes, transverse as well as coronal (Jarvis, Smith, & Kulig, 2014). The findings showed that there was a significant difference of $p < .036$ between the three groups of dancers for the push-up trunk stability score. However, the Post Hoc test found no significant difference between Malay with Chinese dancers and Indian with Chinese dancers. Indian dancers recorded the highest mean (2.36) compared to Chinese and Malay dancers. Although this is closely related to coordination as well as anterior and posterior plane stability, muscle strength factors of the upper body may also play a role in the trunk stability push-ups. This finding was supported through a research by Lee, Reid, Cadwell and Palmer (2017) emphasized that muscle injuries are an ongoing health issue among pre-professional dancers and most of these injuries are due to overuse factors that come from repetitive movements.

According to Chang, Halaki, Adams, Cobley, Lee and O'Dwyer (2016), the combination of motor skills, coordination as well as speed of movement is a very important combination for a dancer to produce a good performance. The findings showed no significant difference between the three groups of dancers for the rotary stability score. The Post Hoc test results also found no significant difference of $p > .079$ between the three groups of dancers. The gap between the mean score was not much, in which Chinese dancers gained the highest mean (2.32) and Malay dancers obtained the lowest mean (2.00). Such results may be due to the level of neuromuscular coordination between the upper and lower body which is similar for all three groups. This finding was supported by Chang, O'Dwyer, Adams, Cobley, Lee and Halaki (2020) stated that the improvement of dancer skills and aesthetic value in dances may also be closely related to other factors such as level of neuromuscular coordination, dance smoothness and movement variation in the dance.

A specific test battery needs to be developed to test the quality of movement in dance that emphasizes training duration, dance history, physical testing, fitness, and complex dance movements. Developing a battery of movement assessments in dance is much more difficult when compared to sports because dance is more artistic and emotional (Liederbach, 1997). According to Newton (2002), needs analysis is a key step in the process of forming a good training program by a coach.

FMS can identify dancers who are at risk of injury. Therefore future studies could include subjects covering different types of dances, such as African American dance, social dance and street dance. This is important to determine the basic movement needs depending on the type of dance, as most traditional dances require flexibility, unlike African American dances that require muscular and cardiovascular endurance. Intervention training that focuses on flexibility, coordination, and muscle strength may also affect FMS scores. Moreover, the level of dancers such as professional and pre-professional dancers can also be a factor influencing movement evaluation scores.

4.2 Conclusion

According to the findings of this study, Chinese dancers recorded the highest scores in four of the seven FMS tests (hurdle step, shoulder mobility, active straight leg raise and rotary stability). Meanwhile, Indian dancers recorded the highest scores in three of the seven FMS tests (deep squats, inline lunges, and trunk stability push-ups). There is a significant FMS score difference between Malay, Chinese and Indian dancers. FMS may be a useful tool to help identify dancers at the risk of injury and improve their quality of movement. The findings of this study will help sports scientists to get more information about injuries in dance, especially traditional dance. This study is also the first in Malaysia to investigate the relationship between FMS and dance in Malaysia, and it is hoped that this study will serve as a benchmark for further FMS studies in Malaysia. The findings will also help trainers in developing training programs for specific dance styles, lowering the risk of injuries and improving dancers' movement quality.

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A Survey on Acceptance and Readiness to Use Robot Teaching Technology Among Primary School Science Teachers

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Abstract

Interest in educational robotics has grown in recent years, and many efforts have been undertaken across the globe to include robots into school instruction from kindergarten to high school, mostly in science and technology subjects. The current study is to determine teachers' technological acceptance and readiness to implement robotic technology in the teaching and learning process. A descriptive research design was employed which utilized a survey method. This survey was conducted among primary school teachers of Science, Mathematics, Design and Technology, and Information and Communication Technology (ICT) in Malaysia. According to the findings, teachers' acceptance of robot technology in the classroom is at a modest 3.77 ($SD = 0.598$) while the readiness score is 3.67 ($SD = 0.611$). The findings indicated that school teachers are only moderately prepared to employ robotic technology in classrooms. Respondents also argued that the high cost of robotic technology is a significant barrier to incorporate robotic technology into teaching and learning. The practicality of this paper is the provision of insights for exploring adoption possibilities and barriers in auguring robots into primary school classrooms. This indicates that the higher the level of teachers' acceptance, the higher teachers' readiness in robotic technology. Respondents argued that the high cost of robotic technology is a significant barrier to incorporating robotic technology into teaching and learning.

Keywords: robotics technology, teaching, affordance, acceptance, readiness

1. Introduction

In recent decades, the robotics industry has rapidly advanced in the permeation of human job roles, in particular, jobs that are dangerous and repetitive, such as in the field of rescue, guidance, service, and much more (Huang, 2021). Robots are also present in the education domain where they perform teaching roles. A smart educational robot is a type of learning assistance tool that can cultivate creativity, analysis, and imagination skills among various learners (Aoun, 2017). Observed among lower grade students, this robot effectively mobilizes students' initiative when it comes to teaching activities, and this is due to its characteristics of openness, intelligence, and good human-computer interaction (Bai & Li, 2021). In the practice of teaching, the educational robot is the teaching assistant to subject teachers in demonstrating the curriculum and moderating supplementary enrichment activities that boost students' attention and concentration outcomes. In tandem, this robot serves as the student's learning companion, following the concept of edutainment where students continue to learn in out-of-class domains that are enriched with student-robot interactions. Witherspoon et al. (2018) argued that robotic education fosters the development of multi-skills and knowledge at all levels of education, from preschool to university (Daniela & Strods, 2018). In various forms, humanoid robots have been potentially useful as teaching assistants in the classroom (e.g., Conti et al., 2017; Kennedy et al., 2015; Kory-Westlund & Breazeal, 2019). In middle school STEM classrooms, robot tutors are on-screen - specifically in a virtual reality (VR) setting, to teach general science subjects in an immersive learning environment (Makransky et al., 2019). These robots were also successful in teaching mathematics because it demonstrated rapport and engagement (Krämer et al., 2016). Therefore, a human-like pedagogical agent stimulates working memory and math skills.

Interest in educational robotics has grown in recent years, and many efforts have been undertaken across the globe to include robots into school instruction from kindergarten to high school, mostly in science and technology topics. The programmable bricks, the most recent version of educational robotic technologies, allow students to control the behavior of a tangible model through a virtual environment, allowing for new types of

science experiments in which children investigate everyday phenomena in their lives (Resnick et al., 1996). The successful introduction of educational innovation in school settings is not just a matter of access to new technologies. Technology integration in the classroom refers to teachers' use of educational technology in the classroom, such as the use of different hardware, such as mobile technology and tablets, or software applications, such as tools, to realise particular learning processes (Mataric, 2004).

Despite its benefits, some educators still doubt their ability to implement educational robot in their teaching processes, and they struggle to adapt to new educational changes (e.g., Reich-Stiebert & Eyssel, 2016). The underlying issue is that most educators are unaware of the reasons for the changes and the role they must play in implementing the educational robot for enhancing teaching. It is unclear as to whether the educators accept or are ready to implement teaching and learning with the support of the educational robot. In line with this reasoning, our study needs to determine the degree of readiness and acceptance among primary school teachers in terms of their attitude toward implementing teaching and learning based on the IR 4.0 robotic technology. Teachers must be trained so that they can effectively incorporate this technology into their classrooms to enhance K-12 student learning (Casey et al., 2020). The teacher training should focus on how to effectively integrate this new technology content wise, so as to allow teachers to perform practical work. The process of robotization in various fields is not new, and the first researcher to discuss the prospect utilising robotic systems for educational content was (Papert, 1984), who proposed that learners can build their numeracy skills and help the fundamental principles of physics if computers are seen in the education process and they are active participants. Later, he created the LOGO programming language and Turtle robots to enable learners to respond in the building process and learn on their own. Although educational robotics is usually linked with Science, Technology, Engineering, and Mathematics, it is not a new idea for education.

In the absence of absolute acceptance and readiness from all stakeholders, especially teachers, the novel implementation of these robots may be held back. Therefore, we highlight the importance of this study is the establishment of acceptance and readiness factors, both necessary to inform the teaching process for an engaging educational robot classroom. This study aims to identify the level of acceptance, readiness, and affordance of teachers towards the educational robot, as part of the efforts taken to implement 21st century approach to learning in primary schools.

2. Literature Review

Environmentally friendly technologies are expected to change procedures in the event of a pandemic (Fernandes et al., 2020). Havelange (2020) discussed the challenges, opportunities, and insights gained from an elementary robotics program in an online environment during the COVID-19 lockdown. While students faced challenges, they were also introduced to new ways to interact online. Lessons learned from the rapid shift from full-time to online learning are used to engage students fully. The efficacy of robotic education as a therapy for children diagnosed with autism spectrum disorder is compared to traditional treatment, taking into account the requirements of unique learners (Lytridis et al., 2020). Both children and their parents are pleased with the robot-based material, according to the findings. Robots and remote-monitoring applications are examples of environmentally friendly technical equipment. The outcomes are encouraging since they successfully promote knowledge and assist providers in making decisions.

Robotic education also fosters the development of multi-skills and knowledge at all levels of education, from preschool to university (Witherspoon et al., 2018). Recently, new research directions have been developed in which it has been proven that Robotic education has such positive side effects as improved learning motivation, improved interest in learning itself, the possibility of using robotic lesson with special needs students to engage them in active learning processes, overcoming the gender gap in STEM education, and other factors that can lead to social risks (Daniela & Strods, 2018).

Due to changes in the learning environment and technology, pedagogy, or the teaching technique, is constantly evolving (Pratama et al., 2019). The internet has altered the landscape of teaching and learning, allowing for the use of online learning resources to assist instruction. Since learning may take place on a virtual platform, face-to-face contact between the instructor and the student is no longer necessary. Because learning institutions must create employees who can deal with technology linked to IR 4.0, pedagogy is once again in need of reform in the context of IR 4.0. Robotics is presented as a self-contained learning object, it covers many educational elements and serves goals beyond those specified in the applicable curriculum, such as the development of problem-solving abilities, creativity, critical thinking, and collaboration skills, among others. Students study essential engineering, math, and computer science topics while creating and programming robots (Druin & Hender, 2000). Learners' research attitudes may be improved by using robotics, which allows them to establish

hypotheses, conduct experiments, and improve their abstracting abilities. As a result, learning built via robotics (as a learning object) is equally beneficial for other cognitive domains throughout the school curriculum.

Several educational programmers and initiatives involving universities, schools, and other educational and research organizations have been established in the area during the past several years. A representative selection of them is briefly given in the following lines to give an idea of the diversity of subject areas, educational goals, learning methods, themes, and different audiences engaged in previous and current robotics applications in wider classroom contexts.

3. Materials and Methods

This study used the quantitative method to evaluate the level of affordance, acceptance, and readiness of primary school teachers in adopting robotic teaching technology in science classrooms. A questionnaire was developed as the method for data collection. The simple random sampling technique was used to select the respondents. The respondents of this study were 296 primary school teachers in the state of Malacca, under the district of Alor Gajah. Although the study is restricted to Alor Gajah, Malacca teachers, the findings are expected to shed light on teachers' knowledge and skills in robotic technology, and attitudes and obstacles they face when implementing it in the classroom. This study is important because it ties to schools. If the study's survey yields positive results, the school can give relevant courses to help teachers become skilled in integrating Robotic technology in the teaching and learning process. Moreover, the MOE can use the survey's findings to develop robotics courses. At the same time, the Malaysian Ministry of Education can use the findings to update its curriculum.

For data collection, the questionnaire was developed and adapted from Wang et al. (2019) to encompass robotics technology contexts. The instrument measurement is a 5-point Likert scale because the finer 5-point scale enables respondents to figure out items in a manner closer to the structural pattern of the size, leading to higher reliability and validity. The first part sought respondents' demographic information, such as gender, age, job function, working experience, subject taught, type of school, and school location. The second part is teachers' technology affordance in terms of their knowledge level. The third and fourth parts sought teachers' acceptance and readiness in implementing while the fifth part gauged the respondents' perception of possible implementation challenges of incorporating robotics technology in the teaching and learning process in a science classroom. According to Kombo and Tromp (2006), a pilot study is necessary to validate and confirm the reliability of the research instrument. Therefore, this study piloted the research instrument by randomly selecting 30 science teachers of another state. This served to measure how well the research instrument measures what it was created to measure. Following Streiner's (2020) views, all the items of the instrument were adapted from a scholar. To guarantee instrument validity, we sought a scholarly expert with a professorship tenure in the field for validation. The research instrument was piloted after which modifications were made to suit the content validity of the instrument.

4. Results and Discussion

According to the findings, the mean value for acceptance is 3.77 ($SD = 0.598$) while readiness is 3.67 ($SD = 0.611$). Finally, the mean for a teacher's technological challenge is 3.17 ($SD = 0.241$). Table 1 proves that the majority of the respondents choose to agree to the first item in performance expectancy which is "*I would find the technology in teaching and learning is useful.*" The findings support the opinions of Roy (2019) who believes that technique is useful in teaching and learning in order to make language learning easier for their students. The second item in performance expectancy is "*Using the technology in teaching and learning enables me to accomplish tasks more quickly.*" In this item, 60.6% of respondents viewed that robotics technology enables them to finish their task more quickly. Furthermore, almost 17% of respondents agreed that using this technology in teaching and learning enhances teacher productivity.

In the context of effort expectancy, 65% of respondents agreed with the statement that their interaction with this technology in teaching and learning would be clear and understandable. The findings also indicated that 59% and 53% of respondents respectively thought that by adopting this technology, they would rapidly become skilled at it, and that using it in teaching and learning would be easy for them. As a result, the teachers have positive perceptions on the adoption of this technology. To measure the dimension of social influence, four items were included in the questionnaire. However, only two items were identified based on their high mean. As displayed in the findings, the respondents professed that they would adopt the technology if their colleagues would. This shows that the level of respondents' willingness for robotics technology adoption is influenced by their peers. Therefore, this social influence item explains that teachers' source of inspiration comes from their professional peers when it comes to accepting and applying new technologies in the teaching and learning process.

To measure teachers' readiness in robotics technology, three items of behavioral intention were used. The first item is "I intend to use robotics technology in my teaching and learning in the upcoming months." As shown in Table 2, 47% of respondents expressed their intention to use robotics technology in their teaching in the upcoming months. 64 % of school teachers would use this technology in my teaching in the upcoming months. These findings on science teachers' acceptance and readiness show moderate acceptance for robotics technology in classrooms.

Table 1. Descriptive statistics of teachers' acceptance to use robotic technology.

No.	Items	Percent (%)					Mean	SD
Performance Expectancy								
1	I would find this technology in teaching and learning is useful.	-	4.5	10.6	69.7	15.2	3.95	0.66
2	Using this technology in teaching and learning enables me to accomplish tasks more quickly.	-	4.5	19.7	60.6	15.2	3.86	0.72
3	Using this technology in teaching and learning increases my productivity.	-	3.0	24.2	59.1	13.6	3.83	0.69
4	If I use this technology in teaching and learning, I will increase my chances of getting a raise.	6.1	15.2	36.4	34.8	7.6	3.22	1.01
Effort Expectancy								
1	My interaction with this technology in teaching and learning would be clear and understandable.	1.5	6.1	19.7	65.2	7.6	0.75	0.76
2	My interaction with this technology in teaching and learning would be clear and it would be easy for me to become skillful at using this technology in teaching and learning.	-	9.1	24.2	59.1	7.6	3.65	0.75
3	I would find this technology in teaching and learning easy to use.	-	12.1	25.8	53	9.1	3.59	0.82
4	Learning to operate this technology in teaching and learning is easy for me.	1.5	12.1	34.8	45.5	6.1	3.42	0.84
Social Influence								
1	People who influence my behaviour think that I should use this technology in teaching and learning.	1.5	9.1	27.3	53	9.1	3.59	0.84
2	People who are important to me think that I should use this technology in teaching and learning.	-	4.5	33.3	48.5	13.6	3.71	0.76
3	If my colleagues use this technology, I will use it in my teaching and learning.	-	6.1	21.2	59.1	13.6	3.81	0.74
4	The school has supported the use of this technology in teaching and learning.	-	4.5	39.4	45.5	10.6	3.62	0.73

Table 2. Descriptive statistics of teachers' readiness to use robotic technology.

No.	Items	Percent (%)					Mean	SD
Behavioural Intention								
1	I intend to use this technology in my teaching and learning in the upcoming months.	1.5	9.1	30.3	47	12.1	3.59	0.87
2	I expect I would use this technology in my teaching and learning in the upcoming months.	3	7.6	42.4	36.4	10.6	3.43	0.89
3	I plan to use this technology in my teaching and learning in the upcoming months.	3	10.6	42.4	34.8	9.2	3.36	0.90

Finally, the current study also presents common challenges faced by teachers when attempting to integrate the technology in teaching science in primary school classrooms. Five items were utilised to assess the challenges of the technological bottleneck, a shortage of talent, morality and ethics, high costs, and lastly the idea and awareness of robotics technology. Only 66 respondents responded to this part. The results displayed that the highest mean of the main challenge in robotics technology is robotics technology concepts and awareness which is 3.9839. Secondly, the mean of the morality and ethics challenge in robotics technology is 3.5645, followed by

the challenge of costs, which is 2.8548. This is followed by the challenge of the lack of talent which scored a mean of 2.5645. Finally, the lowest challenge ranked was the technical bottleneck of robotics technology which is 2.0323.

5. Conclusion and Implications

Since primary school science teachers' perceptions of robotic teaching technology are moderate, more efforts by schools and teachers are required to improve robotics usage. The study also found that most teachers agree that technology will improve their teaching. Also, most teachers are expected to use technology positively and easily. They agreed that social influence would help them confidently use robotics in education. These include investing in robotics technology and learning about it on one's own. Using robotics in primary science classes helps students develop communication and teamwork skills, which are important technological affordances for IR 4. Science teachers will be excited to experience the ease of teaching once they see how robotics technology can inspire science curriculum and stimulate lesson delivery. To begin, most respondents think robotic technology in education is valuable. Roy (2019) claims that teaching and learning techniques can help students learn languages more easily. As IR 4 approaches, it is important for primary school science teachers to accept technology in their classrooms. Even respondents believe that teachers' interactions with IR 4 technologies would be clear and understandable. According to the study, teachers' teaching and learning will be more understandable if robotic technologies are accepted. This attitude of acceptance is much needed as the teaching community must continue to evolve, moving away from archaic teaching methods and techniques towards contemporary ones. Therefore, it is important that the science teaching community at primary school level realize the benefits of robotics technology, that is it is compatible and manageable in classrooms. Policy makers appear convinced that robotics technology is essential if teachers are reasonably prepared to face the challenges of the borderless world. It is undeniable then that robotics technology has become a potent production tool and it offers exciting approaches to teaching, and if this technology is used extensively, and in proper manner, it could bring exponential improvement in education.

New technology enhancing or driving existing traditional learning, Gagne (2005) says. Robotics can help fill in educational media holes (Norabeerah, 2011). This study evaluated teachers' ability, acceptance, and readiness to use robotics. 74 teachers from Alor Gajah district were studied. 19 male and 55 female teachers. This feedback should be fed to the government for further action. Schools can be more responsive to teacher suggestions and requests if they are open-minded. This can be accomplished by enrolling teachers in courses on educational technology.

This workshop can prepare teachers for IR 4. Robotics can make learning more fun for students. The books were updated to allow for two-way communication. This may not be possible if teachers do not choose to integrate changes. Define future robotic technology capability, readiness, and acceptance. Teachers are willing to use new technology if properly trained and equipped. They've all heard of but never used this tech. Saltan and Arslan say it's available but rarely used in schools (2017).

6. Limitations of the Study and Implications for Future Research

The Ministry of Education should hold numerous seminars and in-house sessions to improve teaching and learning using robotic technology. IR 4 requires training for teachers from early childhood to secondary, according to regional feedback. Participants may also be given tools such as 3D printers, 3D pens, VR boxes, and AR glasses to better understand technology affordances. Although costly, it can be beneficial to teachers for future use.

This path would also be linked to social change, knowledge dissemination, and technological awareness. Also, a qualitative method, in addition to the quantitative method, would be added so that more information can be gathered on the relationship between technology affordance, acceptance, and readiness among primary school teachers in integrating IR 4. The teacher training program on robotics technology for education received positive response on its content and structure. This encouraged our research team to incorporate constructivist learning approaches and project-based learning in future training programs. Having said that, we recommend that future training and pairwise comparisons of this training program include the following recommendations, some of which are omitted.

I. Added training sessions could be inserted into the training program to make it more comprehensive. The training's extension could improve participants' acceptance, self-efficacy, and perceptions.

II. Comprehension and activities with additional educational robotics technology and programming resources can be included in the training program. It could, for example, include sessions with other school-appropriate

resources such as Scratch Jr (Papadakis et al., 2017), KIBO (Bers & Donohue, 2019), RoboTito (Gerosa et al., 2019), and Bee-bot (Di Lieto et al., 2017).

III. More opportunities should be provided to participants to experiment with educational robotics resources and teaching materials. This would allow participants to feel more at ease and confident with the resources, as well as enjoy the learning process without feeling hurried, which could have a positive effect on their acceptance, self-efficacy, and perceptions.

IV. A larger sample size, one that is larger than 300, would inform better implementation of this study as this increases instrument and scale reliability. This sample could allow confirmation and assumption development of the positive results, and a structural equation study can be conducted.

Despite various recommendations, the university teaching advisory board should emphasize the implications of robotics education in teacher education and implement effective reforms to incorporate robotics training into teacher education.

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Exploring Teachers' Practices in Teaching Robotics Programming in Primary School

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Abstract

Programming and coding are important skills and competencies in the 21st century. Due to this importance, robotics programming has been introduced in the Malaysian education system since 2013. Robotics is important in education because it could be used to cultivate various skills. Various studies have been conducted on robotics and its applications in education, and proponents of robotics believe that using robotics to teach programming could be impactful and effective in the Malaysian education context. On the other hand, many students think that programming is challenging. Consequently, some questions have arisen, such as the suitable programming language or platform to be used in Malaysian Primary School and the best instructional method. Studies have also examined the existing robotics modules used in the teaching and facilitation (T&F) process, in which it was found that the current curriculum is focused on introducing robotic programming. In this regard, there is a need to explore the current teaching design, pedagogy, and teachers' practices. Therefore, this study is aimed to explore the teachers' practice in teaching robotics programming as part of the Design and Technology (RBT) subject in Primary School. This study discusses teachers' practices, the issues in robotics programming education, the importance of robotics to education, especially in primary schools, and the robotics kits and programming languages or platforms commonly used in schools. This study is a qualitative case study, and data were collected using in-depth interviews. The findings of this study have produced several key themes, namely: (a) RBT teacher practices (GRBT) in T&F, (b) Strategies in lesson planning, (c) Challenges and obstacles of T&F, (d) Use of technology, and (e) Teacher's commitment. These are hoped to help educators, education administrators, and policymakers to understand the implications of robotics teaching in teaching programming.

Keywords: robotics programming, robotics education, teachers' practices

1. Introduction

The Fourth Industrial Revolution (4IR) era emphasizes the use of supercomputers, smart robots, driverless vehicles, genetic modification, and the development of neurotechnologies to further optimize human-machine functions. 4IR technologies integrate the physical, digital, and biological aspects of human life required to equip future generations to solve problems in the digital world (Schwab et al., 2020). At the same time, the emergence of this revolution brought great challenges due to its impact on various sectors and employment. According to (Bughin et al., 2018), the McKinsey Global Institute projected that robots and automation would be extensively used in operations, drastically reducing the number of employees. In this regard, by 2030, 50% of companies will rely heavily on automation technology.

In Malaysia, the Fourth Industrial Revolution (4IR) National Policy was launched in 2021 to ensure the country does not fall behind in this revolution. This policy presents the main guideline for all parties involved in formulating strategies and actions that can take opportunities and benefits from the emergence of this revolution. Interestingly, the education sector is outlined as supporting key sectors that focus on new socio-economic growth to the country. One of the policy's focuses is on enhancing teachers' capacity and role based on the need for all teachers to be trained to accept and use 4IR technology in teaching and learning (Unit Perancang Ekonomi, 2021).

In Malaysia, robotics programming has been introduced in the Primary School Standard Curriculum (KSSR) as a

topic in the Year 5 Design and Technology (RBT) subject. This topic has replaced the programming topic in the Information and Communication Technology subject, which has been repealed. Teachers and students have been actively participating in various robotics activities such as classes, workshops, and competitions at various levels, such as school, district, national and international levels. In fact, the Malaysian robotics team has achieved international success in prestigious competitions such as the *World Robotics Olympiad (WRO)* (Ibrahim et al., 2014).

Robotics education refers to T&F activities that use robots to spark students' interest and increase their motivation. A study by (Felicia & Sharif, 2014) found that robotics is a suitable platform to train students in Science, Technology, Engineering, and Mathematics (STEM) related skills. However, there is a need to identify the best methods and practices in teaching robotics. At the same time, robotics creates good business and investment opportunities for large companies such as Lego which develops robotic educational games such as Lego EV3 Mindstorm, and the Makeblock company that develops Mblock robotic educational tools for learning activities. The increased demands for robotic kits saw Makeblocks products sold in more than 140 countries, with 10 million users in 20,000 schools worldwide.

Robotics education encourages critical thinking and problem-solving skills through designing, building, and programming robots to perform specific tasks using the instructions provided. Several studies have supported the integration of Computer Science into K-12 education. However, students often neglect the elements of Computer Science because they find it complicated. In this regard, we could not ignore the importance of these elements for present and future needs (Sáez-López et al., 2016).

1.1 Problem Statement

According to the Ministry of Education (MOE), the number of students taking Science, Technology, Engineering, and Mathematics (STEM) subjects is declining every year. While the role of STEM is closely linked to emerging new jobs and the rapidly growing digital industry, the supply of talent in the field has raised concerns. According to the MOE, in 2018, only 44 percent of Malaysian students took STEM compared to 49 percent in 2012, an average reduction of about 6,000 students each year. This situation will likely cause the country's planning to be hampered to compete in the digital economy era in the coming era (Mohamad Marzuki et al., 2019).

Malaysia's achievement has also lagged in international assessments, such as TIMSS and PISA. While the latest PISA analysis of 2018 (OECD, 2019) showed a slight improvement, this achievement is still falling behind other countries. Meanwhile, Malaysian's performance of TIMSS has continued to decline (Phang et al., 2020).

Despite the various initiatives taken by the MOE to address this issue, such as launching the Malaysia Education Development Plan 2013-2025 (Kementerian Pendidikan, 2013) and introduced the i-THINK mind map for T&F, its educational achievement is still lacklustre and need to be improved. This is evident through students' low performance in examinations which illustrates the need for appropriate interventions.

As part of the education improvement plan, programming has been included in the Design and Technology (RBT) subject for Year 5. However, the teaching and learning of these skills are still given less attention due to challenges, such as teachers' lack of knowledge and skills (Ling et al., 2017). Programming is deemed as an important element as it is the core of computer science. Teaching programming aims to produce students who can design and develop computer programs by applying computer science's basic concepts and principles. It is an effective way to encourage high-level thinking. As programming requires complex thinking to apply logical rules in problem-solving, novices in this field may experience difficult and complex challenges (Akinola, 2015). Therefore, studies exploring teachers' practices in teaching robotics programming should contribute to new knowledge in this field.

1.2 Literature Review

The importance of computer science education for students in grades K-12 is driven by different factors, including economic and technical needs generated by future computer technologies (Cheng et al., 2018). As a result, programming education is actively promoted worldwide to develop human resources to respond to these changes. Programming has been actively supported and taught in schools like the United Kingdom, Finland, and Estonia (Sáez-López et al., 2016).

According to Bers et al. (2014), students could be exposed to robotic technology early through the constructivist approach. The integration of robotics in education provides meaningful experiences to students and helps enhance fine psychomotor development, collaboration, and team spirit. Robotics is one of the ways to interest students in the subject of Mathematics. Robotics is appropriately integrated into problem-solving, equations, accuracy and precision, number and number comparison, measurement, and whole numbers (Silk & Schunn,

2008). Programming is the basic concept and principle in the learning of Computer Science. This is an effective method of encouraging high-level thinking. However, it requires the ability to think in a complex way to apply logic and problem-solving concepts, which could be a challenge for people new to programming (Akinola, 2015). If robots are used in programming education, abstract concepts can be implemented visually and physically so that students can understand computer science concepts better (Lawhead et al., 2002).

Since primary school students are at the concrete operational stage in Piaget’s hierarchy of cognitive development (Barrouillet, 2015), robotic programming, which involves manipulating specific robots, can be an appropriate method in programming teaching. In this light, concrete experiences using robots can make students more interested in learning (Bers et al., 2014). Furthermore, since the experience accumulated at a young age influences future job choices, it is important to start computer science education in primary school. Robotics embodied in science focuses on the important design, manufacture, and application processes that are important in the IR 4.0 era. Various studies have shown that robotics is an appropriate platform for training skills in STEM (Mariappan et al., 2015). However, the application of robotics in Malaysia to strengthen STEM is still in its infancy, and efforts to expand robotics, especially considering environmental and demographic factors, still need to be explored (Felicia & Sharif, 2014).

There is a wide gap in the literature as there is a lack of studies on robotic programming module development. There are limited studies that explored the impact of robotic programs in the marketplace, which emphasize the elements of computational thinking. Even though past studies have extensively evaluated consumer perceptions and attitudes towards robotics education, most studies related to robotics learning have been conducted in developed countries. These studies could not be generalized outside the context of the study. Studies exploring teachers’ teaching practices in robotics programming and the development of robotics modules, specifically in primary schools, are still lacking in the Malaysian context. Also, there is a lack of studies on how primary school students benefit from computer education (Chen et al., 2017). For example, (Ibrahim et al., 2014) only discussed the potential of robotics in education as a resource material in Malaysia in helping to improve students’ high order thinking skill. Meanwhile, (Noh & Lee, 2020) used the existing robotic programs and activities to evaluate the program’s effectiveness on students’ computational skills and creativity. Therefore, this study aims to explore teachers’ practice in teaching robotics programming as part of the design and technology (RBT) for Year Five students in Primary School. Furthermore, problems and issues in teaching and facilitating robotic programming will be explored and dissected to propose appropriate solutions.

1.3 Research Questions

Based on the research objectives, which is to explore teachers’ practices in teaching robotic programming in Primary School, two research questions have been formulated, as shown below.

1. What are the teachers’ practices in teaching robotics programming as part of the KSSR technology design subject for Year Five students in Primary School? and,
2. How do teachers’ practices influence the teaching and facilitation (T&F) of the robotic programming topic?

1.4 Conceptual Framework

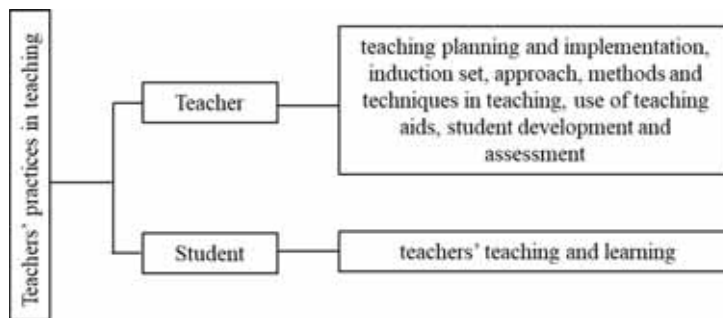


Figure 1. Conceptual Framework of the Study (Adaptation of Research Theory Clark & Peterson, 1986 and Cobern, 1993 & al-Ghazali, t.th, and Dunkin & Biddle, 1974). Source: Jamaludin & Adam Jaiit (2016)

This study focuses on several aspects, specifically (1) planning and implementation of teaching, (2) use of approaches, methods, and techniques in teaching, (3) use of teaching aids, (4) students’ development and assessment of and (5) reinforcement as shown in Figure 1. Teachers’ practices in teaching should be guided by teaching planning and implementation, induction set also play a role as a withdrawal of students' interest in

teachers’ practices in teaching. Meanwhile, approach, methods and techniques in teaching are the determinants of good teacher teaching practices plus using appropriate teaching aids. Student assessment cannot be ignored to ensure that all objectives have been achieved.

2. Research Method

The qualitative research method has been chosen due to its suitability to the study’s objective: to explore teachers’ practice in teaching robotics programming as part of the RBT subject for year 5 in Primary School. The case study design was adopted to conduct an empirical investigation on a contemporary phenomenon in its real context using different sources of evidence (Yin, 2003). To be precise, the multi-cases or the multi -fields case study design was adopted as this study involved participants from more than one school. A case study focuses on the context of the subject, individual, group, and program. Hence, the issue is examined in a finite system, such as an environment or a context, in one or more cases. Some researchers refer to case study research as a study strategy, a methodology, or a comprehensive research strategy (Creswell, 2007; Merriam, 1998; Yin, 2003). Case studies are useful for discovering new behaviours, processes, or knowledge we know little about (Mayer, 2001).

2.1 Research Instrument

In qualitative research, the researcher acts as the main instrument or tool of data collector. In this regard, an Interview Protocol is needed to ensure that the interviews conducted are directed and the questions do not stray from the main topic of discussion. Hence, the interview protocol was set first before conducting the interviews to collect data. In this study, the draft interview protocol was reviewed by several experts in educational technology and robotics and experts in the field of qualitative research. Corrections and improvements were made to the interview protocol based on the experts’ comments.

2.2 Sampling Procedures

The informants in this study involved four teachers teaching robotics programming in the RBT subject for Year Five students in Primary School. They were selected using the purposive sampling method based on a set of criteria, namely: (a) their commitment and active involvement in teaching and being coaches for the RBT subject and (b) their qualification, teaching expertise, and experience. To ensure confidentiality, these teachers were labelled as GRBT, as shown in Table 1. This study chose teachers in Pahang and Terengganu as the population of teachers has similar characteristics as teachers in other states. Hence, there are no obstacles to conduct an in-depth investigation of this population.

Table 1. List of Participants

Participant	Teaching Experience (Years)	Position	Qualification
GRBT1	10	Teacher	Bachelor of Mechanical Engineering
GRBT2	11	Teacher	Bachelor of Mechatronic Engineering
GRBT3	10	Teacher	Bachelor of Electronic Computer Engineering elektronik komputer
GRBT4	12	Teacher	Bachelor of Information Technology

National Primary schools were chosen over secondary schools because limited studies have explored this issue in national primary schools. This may be because the Curriculum Development Division, Ministry of Education Malaysia, has just introduced robotics programming as part of the design and technology subject.

Guest et al. (2020) stated that, in general, six to seven interviews are sufficient to cover most of the themes in a homogeneous sample (six interviews to achieve 80% saturation). On the other hand, for higher saturation (95%), 11-12 interviews may be required as recommended by the literature, which indicates that, in general, 12 interviews are required to achieve a higher level of saturation. Data collection was carried out after obtaining the informant’s consent to be interviewed through a signed consent form. Permission to record the interview session was also obtained from all informants involved.

2.3 Data Collection

Data collection was conducted using semi-structured, in-depth interviews with the informants to collect various information and capture their opinions, thoughts, and experiences (Jasmi, 2012). Semi-structured questions were provided instead of open-ended questions to avoid the interview session from straying from the study’s objectives. However, questions will be added as appropriate during the interview if required. These semi-structured interviews were conducted online using the Google Meet app.

The interview sessions were recorded for analytical purposes, as suggested by (Neuman, 2000). Serious attention was given during data recording, and the respondents were encouraged to give detailed explanations. The suitability of the informants' answers was constantly checked. In addition, the transparency of the informants' answers was verified through the mode of delivery and aspects of body language style such as gestures, eyes, and hand movement. Careful preparations were also made to ensure each interview was recorded promptly through notes and audio recordings.

This is in line with (Lebar, 2006), who suggested three basic ways of recording when conducting an interview: making audio recordings, note-taking during the interview, and writing observations right after the interview session. Verbatim transcription was conducted for each recording made. The interview was transcribed in detail, and information such as the interview date, time, and duration were recorded. The transcription was made with care and took a long time to ensure that the results were accurate, and no data was leaked.

2.4 Credibility

Validity and reliability in qualitative research attribute to data credibility. They can be verified using several strategies, including member check, audit trail, and external audit. Carpenter (2008) recommended expert review because it illustrates some of the core values of qualitative research related to accurate representation, leveraging participants' knowledge and experience, and reducing data imbalances in research.

2.5 Data Analysis

According to (Creswell, 2018), qualitative research data analysis involves preparing and managing data in the form of text transcription, audio, or photographic transcripts. First, excessive data needs to be filtered and cleaned up to produce the most relevant data for the study. Next, it has to go through a coding process based on a set theme. Finally, the data is presented in attractive and effective forms, such as a table, diagrams, and appropriate descriptions.

Data encoding was done to facilitate the analysis process. Systematic coding would produce structured data and can avoid the duplication of the same data. The main source of textual data was transcripts obtained from data collected during the interviews. Transcripts are generated through the transcription process of "converting audiotape records or field notes into text data" (Creswell, 2018).

The first phase involves preparing the data for analysis. First, the audio-recorded interviews were translated verbatim using a form to illustrate discourse units and the interview script. Next, the data were read several times to derive the gist of the source, categorize the main points, and coding them into their sections. Topics and patterns from previous studies discussed in the literature review act as a guide during the initial reading of the transcript

Themes and subthemes relevant to the study questions were determined based on the interview data. Coding is "the process of segmenting and labelling text to form broad descriptions and themes in data" (Creswell, 2018). Coding allows researchers to identify and extract descriptions, themes, topics, or issues more systematically. The descriptions were then transferred to a coding template by arranging the obtained descriptions according to the order of the study questions. Continuous categorization and coding were performed until all five sets of transcriptions were analysed.

Experts were consulted to validate themes and subthemes based on the main ideas in each segment to ensure consistency in interpreting, categorizing, and coding the transcripts. As this study required knowledge of specific terms and a basic understanding of robotic programming, two experts were approached to evaluate the codes and check the accuracy of the initial coding for the discussion.

3. Results and Findings

Based on the interview data from the study's informants, four main themes formed the basis of the discussion of this study's findings, as shown in Table 2.

Table 2. Theme and subthemes

THEME	CODE	SUBTHEME
RBT Teachers' (GRBT) T&F Practices	AG	a) Objective Setting
		b) T&F activities
		c) Assessment and Evaluation
Strategies in Lesson Planning	SP	a) Problem based learning
		b) Project-based learning

Challenges and Hindrance in T&F	CH	a) Skills and knowledge b) Equipment and Facilities
Use of Technology	PT	a) Technology Utilisation
Teachers' Commitment	KG	a) High commitment b) External support.

3.1 RBT Teachers' (GRBT) T&F Practices

To answer the first research question, 'what are the teachers' practices in teaching robotics programming as part of the KSSR technology design subject for Year Five students in Primary School?', it was found there are several theme and subthemes under GRBT T&F practice, strategy in lesson planning-, strategy in lesson planning, challenges and hindrance in T&F and use of technology, which are objective setting, T&F activities, evaluation, problem based learning, project-based learning, skills and knowledge, equipment and facilities, technology utilisation, high commitment and external support.

3.1.1 Objectives Setting

The study found that most RBT teachers have determined the lesson objectives in T&F based on the Primary School Standard Curriculum (KSSR) Revision 2017, specifically the Curriculum and Assessment Standard Document (DSKP) for Year 5 Design and Technology subject. Design It is stated that "*students need to produce a program of choice and iteration control structure through algorithms with pseudocode method or flow chart based on the situation, detect errors and make improvements.*" The setting of the lesson objectives is also stated in the lesson plan. GRBT1 verified that:

"Ok, for the fifth year programming learning objective, there is a lot. Only by generating an idea of the control structure of choice, the student can construct three main structures: algorithms, pseudocodes, and flow charts, especially according to a given situation. Second, students can construct coding blocks based on algorithms, pseudocodes, and flowcharts. Third, students can produce programs using the coding block programming language according to the steps." - GRBT1

This finding indicates that most RBT teachers have set their teaching goals based on the lesson plan's objectives that correspond to the syllabus set out in the curriculum. Setting the learning objectives is an obligation to a teacher as it is one of the important elements in a teacher's daily teaching record (RPH). RPH are mandatory documents that must be provided by the teacher. Failure to provide the documents can be acted upon by the education department for violating the rules and ethics.

3.1.2 T&F Activities

The results show that the majority of teachers carry out T&F activities that are appropriate for students to achieve the learning objectives. The T&F activities mentioned by teachers include dividing students into several groups before assigning the tasks. Most teachers have also considered certain factors before conducting activities. The GRBTs selected the T&F activities according to the students' level and skills, difficulties and obstacles in performing the activities, and time allocation. The teachers also considered the suggested activities provided in the textbook. For instance, GRBT2 mostly uses activities suggested in the textbook.

"I prioritize the activities suggested in the textbook first. Then added with outdoor activities. For example, assigning students to prepare flowcharts and pedagogues and compile them in a programming language. An example is like entering a timing command and trying to see what output is produced. Exploring the features of programming software." - GRBT2

3.1.3 Assessment and Reflection

The findings of the study indicate that the majority of GRBTs conduct assessments in T&F. Assessment is an important practice that provides useful information about student performance and teacher reflection to make improvements. Assessment is also an important responsibility for teachers to fulfil. GBRT3 assessed students through classroom-based assessment (PBD), as stated below.

"Since we use PBD, the evaluation is staged and all the time. Assessment is based on what students produce. Assessment is easy to do because we look at the projects that students produce" - GRBT3

The PBD has become a very relevant method of assessment in pandemic situations because other assessments such as centralized assessments cannot be carried out. Even if the PBD gives teachers full powers to evaluate students, teachers still evaluate them according to the standards set.

3.2 Lesson Planning Strategy

The interview data showed that the majority of GRBT use several T&F strategies and approaches, including problem-based learning (PBL) and project-based learning (PjBL). For example, GRBT1 has used PBL by initiating problems that need to be solved.

“I give students a problem, not a problem that is too complex, a problem that is easy for them to solve using flow charts and algorithms”- GRBT1

PBL is learning that begins with a problem, and students build new ideas using support materials, information, and existing knowledge. While PBL is known by various terms, including case-based learning or project-based learning, its sole focus is on providing students with different learning experiences (Bosica et al., 2021).

GRBT2 has used the PjBL approach in T&F because it is suitable for teaching robotics programming. The interviews showed that even though most teachers understand that the PjBL approach could be integrated with other approaches, they believe that teachers still need to be given an in-depth explanation of PjBL because their knowledge is only limited to a few PjBL elements.

“To complete project assignments given the situation, I use PjBL which organizes collaborative among students”.- GRBT2

This finding is in line with Kozinski (2018), which showed that PjBL could make learning more effective than traditional learning in social learning, science, mathematics, and literature. PjBL's holistic approach encompasses providing challenging and complex assignments, interdisciplinary focus, and encouraging cooperative learning. PjBL also improves the learning of weaker students as it focuses on the collaborative element to help them engaged in lessons by grouping them with higher-skilled peers.

PjBL-based T&F requires teachers to plan, implement and evaluate projects in real-world situations beyond the classroom. The MOE Education Technology Division has prepared a special handbook to guide educators in implementing this approach (Educational Technology Division, 2006). However, teachers still practice conventional T&F methods, causing the low application of high-level thinking skills. (Mohamad Nurul Azmi Mat Nor, Nurzatulshima Kamarudin et al., 2017).

3.3 Challenges and Hindrance in T&L

Further input on this theme produces two sub-themes, namely knowledge and skills and equipment and facilities.

3.3.1 Skills and Knowledge

The majority of teachers agreed that there are hindrances to implementing T&F to achieve the set objectives. These include mediation language and the programming language. Teachers and students need to be well versed in the specific terms and programming languages to facilitate the T&F process. According to them, most students find the programming language difficult to understand. Another challenge is the use of non-native or foreign language as mediation language for the programming,

GRBT4 described the challenges in teaching ‘loop and repeat.

“when explaining the concept of loop and repeat to my students, I first had to translate the words to their native language, so I need to teach two things, a new language and coding” - GRBT2

Technical skills such as computer literacy (ICT) are also very important in the T&F of robotic programming topics. In this light, low ICT skills cause T&F programming to be disrupted and more time-consuming. GRBT3 shared his difficulty in teaching students with low computer literacy

“If students are less proficient in computer use such as clumsy use of mouse and keyboard, will cause T&F to be disrupted”.- GRBT3

According to teachers, students' skills, such as computational thinking skills, are still low. This situation hinders the efforts to achieve learning objectives in RBT subjects. This situation was explained in a systematic literature review conducted by Mohd Kusnan et al. (2020), which involved 19 studies on computational thinking in the Malaysian context. The education department is working on organising various courses, seminars to help teachers improve their skills in this field. In fact, studies to assess the competency of teachers before formulating modules to be used in teacher training were carried out.

3.3.2 Equipment and Facilities

Limited access to equipment and facilities is also an obstacle in pursuing effective T&F of robotic programming. The majority of teachers stated the lack of teaching aids such as robotic sets and appropriate modules caused

teachers to use only simulated or virtual robot alternatives.

“Students have to share robots... if one robot is shared by a group of 5-6 students, it's ok.. but here one robot is shared by one class; thus, the lesson is less effective”.- GRBT3

The expensive price of robotic sets creates an obstacle for teachers and schools to provide for all students. Hence, students need to share the robots in some schools. The use of physical robots is better than simulated and virtual robots in teaching robotics programming because they create real-world experiences that are more interesting and fun. In this regard, physical robots give a more positive impact on students. Multi-party cooperation is needed so that learning facilities can be upgraded and expanded such as involvement of parent-teacher associations (PIBG), industries and universities.

3.4 Technology Utilisation

From the aspect of technology use, teachers use various technologies and tools recommended by experts among RBT key trainers such as Mblock, Makecode, Microbit, and Scratch platforms in teaching programming topics. In addition, teachers are highly reliant on both online and offline learning portals.

“There are many technologies and platforms, but you have to be good at choosing to suit students, primary school students prefer cartoons, animations, and many colors because Scratch or Microbit is suitable”.- GRBT4

Suk Yong (2019) found that well-developed learning portals positively affected students' achievement. However, improve the Design and Technology (RBT) Year 4 subject learning portal. Similarly, the effectiveness of the use of computer graphics as teaching aids in RBT subjects compared to T&F without the aids (Isa & Mohd Imam Ma'arof, 2018).

According to the majority of teachers again, students showed high interest in T&F activities conducted by teachers. They are engaged in learning because of the effective teacher delivery. However, some students consider robotics programming is still difficult if there are no supporting teaching aids such as robotics kits. Nevertheless, students' interest in participating in T&F activities during RBT is high due to teachers' use of interesting instruction strategies and appropriate aids (Azita Ali & Normah Zakaria, 2014).

3.5 Teachers' Commitment

3.5.1 High Commitment

The findings for the second research question, 'How do teachers' practices affecting and influencing the T&F of the robotic programming topic', show that most teachers are highly committed to conducting T&F to ensure learning objectives are achieved despite constraints and obstacles. Lack of equipment, for example, does not prevent them from pursuing T&F as teachers tried to integrate existing technologies.

“I use what I have, there is a motor and line sensor, it's ok to move the robot. There is more budget later can add other sensors”.- GRBT3

High job satisfaction is one of the drivers for highly committed teachers. In this light, a positive workplace atmosphere, good relationships with colleagues, and the appreciation given by the organization are linked to individual job satisfaction (Dayangku Rodzianah & Mohd Izham, 2021). Teachers in Malaysia are known to be among the highest-committed teachers in their careers no matter what situations they are in.

3.5.2 External Support

According to the teachers, close ties with external parties such as robotics companies and local universities have helped the T&F to be carried out. Some universities also loan robotics sets to schools for T&F and extracurricular activities, such as to participate in robotics workshops and competitions.

“There are outsiders such as the robotics company reading industry who go to schools to help with advisory services. The university also always organizes robotics training and workshops, sometimes given on loan robots”.- GRBT3

The teachers added that suitable learning modules could be developed in partnership with external parties like universities to assist teachers in conducting their T&F more effectively. This is because universities have more access to the required facilities and expertise, they can invite teachers to their university to gain knowledge and experience by attending courses related to robotic programming.

4. Conclusion

This study is limited to exploring teachers' practice in teaching robotics programming as part of the RBT subject for Year 5 students. Therefore, future studies could focus on the development of robotic programming teaching

modules. Other unexplored elements, like students' achievement in this topic, can also be studied. Relevant parties, such as the Curriculum Development Division, Ministry of Education Malaysia, could identify aspects that can be improved and create guidelines for teachers. At the same time, teachers should also take the initiative by exploring appropriate new strategies and technologies that could be applied in their T&F activities.

The inherent challenge in carrying out this study is that the country is still facing the covid-19 pandemic, which has caused major changes in education (Aucejo et al., 2020). This situation has affected the motivation and emotions of both teachers and students. The home-based learning and teaching (PdPr) approach has become a new normal, different from the traditional approach and poses a big challenge to all parties. Previously, teachers and students could use T&F facilities in schools, but now they have to find ways to conduct T&F with the limited facilities at home. Parents also play an important role in providing suitable T&F equipment and act as facilitators to support their children's learning at home.

This study showed that most teachers use the KSSR 2017 (revision) Year 5 design and technology subject textbook (RBT) as the main reference for their T&F contents. However, the textbook's programming topic content can be considered too brief and provide only basic knowledge. Thus, there is a need to find other supplementary materials to complement the T&F activities. Furthermore, there are no teaching guidelines for teachers included. This situation makes it difficult for teachers to deliver comprehensive learning content due to the lack of required information.

This finding is in line with (Zamri Sahaat & Nurfaradilla, 2020), highlighting the need to create additional modules and tools as teaching aids to facilitate learning in the classroom. These findings imply that the RBT curriculum needs to be further developed and streamlined. Continuous training and courses need to be provided to RBT teachers. Furthermore, more equipment, facilities, teaching aids, and modules must be provided at the school level to overcome the challenges in implementing T&F of RBT subjects.

This study highlights the need to provide suitable modules to support learning and as guidelines for teachers. This is because the existing learning content is still limited and dependent on external support materials. The findings of this study can be used as a guide and reference for future studies in programming and robotics. Continuous efforts in forming close ties and cooperation between the school with industry players and local universities must be continued for the sake of progress that could benefit students and teachers.

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Impact of Leadership Styles on the Organizational Commitment of Medical Practitioners: The Moderating Effects of Workplace Stress

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Abstract

The healthcare system is now facing several problems, which demands managers and leaders learning from various leadership styles and staff empowerment techniques to establish a work environment that supports medical practitioners' dedication to patients and their company. The present study aims to examine the leadership styles and organizational commitment of medical practitioners at the Melaka State Health Department [*Jabatan Kesihatan Negeri Melaka* (JKNM)], Malaysia, and the influence of workplace stress. In particular, this study explored the moderating effects of workplace stress on the association between leadership styles and organizational commitment among medical practitioners. The study used a quantitative approach based on the Social Exchange Theory by Homans and Lewin's Person-Environment Fit Model. The survey involved questionnaires distributed to obtain data from 309 medical practitioners. The data collected were analyzed using description means and hierarchical regression. The results revealed a significant correlation and moderating effect of workplace stress on leadership styles (i.e., Transformational Leadership, Transactional Leadership, and *Laissez-Faire* Leadership) and organizational commitment among JKNM medical practitioners. This paper also considered the theoretical and practical implications and made recommendations for future research.

Keywords: Workplace Stress, Moderating Effect, Leadership Styles, Organizational Commitment, Medical Practitioners, *Jabatan Kesihatan Negeri Melaka* (JKNM)

1. Introduction

Contemporary healthcare organizations in many developing countries are facing various challenges. These challenges include threats to the workforce, shifting customer preferences and requirements, budgetary restrictions, growing pressure for better access to treatment, legislation to strengthen patient-centered treatment, and the quality and safety standards of healthcare. Hence, effective leadership and administration is the key to optimizing efficient healthcare management (MacPhee et al., 2013). Leadership relates to the additional push by a leader to boost organizational performance, efficiency, and effectiveness. On the contrary, a weak leadership style refers to the lack of participation by the leader and restricts the organization's success, leadership satisfaction, and efficiency (Ebrahimi et al., 2017).

Kramer et al. (2010) stated that hospital and nursing managers have outstanding leadership styles in the medical profession, particularly in the area of transformative leadership, and their care managers implement a non-discriminatory system for their employees. Previous studies revealed that the quality of treatment declined due to a heavy workload (Duffield et al., 2014). Key steps were needed to eliminate inconsistencies between nursing managers and nurses because the overarching objective of exchanging daily priorities, language, and the general purpose of nursing managers is to establish well-equipped or qualified caregivers who provide quality services (Carlos et al., 2011).

Work-related stress has long been studied and seen as a common stress factor. Most researchers concluded that stress linked to workload has adverse effects on the employees' healthcare and safety (Edgar et al., 2017). The heavy workload of medical practitioners caused a decline in their work efficiency and healthcare (Horton et al., 2018). The above findings indicate a clear link between stress and health. Stress is a silent killer with significant effects on physical and psychological health. High stress is a major health risk factor (Yamaguchi et al., 2017). Research has shown that stress is a strong predictor affecting the physical and mental health of adults (Firoozabadi et al., 2018). Studies on physical health results showed that high job demands, limited

decision-making latitude, and disparity in commitment are all connected to increased heart disease incidences (Yamaguchi et al., 2017). In addition, many employees considered leadership actions to have a direct impact on their well-being.

Leadership reinforcement has a positive effect on job efficiency and well-being. Leadership is critical to excellent performance because it organizes the business's use of people and other resources. A strong leader inspires employees and motivates individuals not only to improve their job performance but also their loyalty to the organization. Some concepts tamped down the impact of stress on illness (Nauman et al., 2019). Jyoti and Bhau (2016) stressed that previous studies examined leadership and health, but very few studies explored the moderating effects between workplace stress, health, leadership styles, and organizational commitment (Abbasi, 2018; Nielsen et al., 2019). Medical professionals play an important part in the healthcare system. They diagnose and treat physical and mental sickness, disease, and infection, as well as prescribing drugs and treatments and referring patients to other experts as needed. Work overload, long working hours, sleep deprivation, frequent exposure to emotionally charged situations, dealing with difficult patients, and disputes with other staff members all put them under a lot of stress (Hafiz et al., 2018). This necessitates managers empowering their medical practitioners to carry out their responsibilities by best practices. It also needs managers to demonstrate their dedication by creating a positive work atmosphere while still providing high-quality treatment and ensuring patient safety (Farokhzadian et al., 2018). This research, therefore, proposes to test whether stress in the workplace influences the relationship between leadership styles and organizational commitment.

It is vital for healthcare providers, employees, and organizations to evaluate workplace-related stress and its contributing factors among medical practitioners. Hence, the current study aims to examine the moderating interaction between the moderating effects of workplace stress, leadership styles, and organizational commitment among medical practitioners at the Melaka State Health Department [*Jabatan Kesihatan Negeri Melaka* (JKNM)].

1.1 Literature Review

Two theoretical perspectives formed the basis of this study - the Social Exchange Theory developed by Homans in the 1960s and the Person-Environment Fit model established by Lewin in the 1950s. The Social Exchange Theory (SET) refers to social, psychological, and sociological characteristics depicting stability and social shifts in negotiating exchanges amongst parties (Cropanzano et al., 2017). This theory claims that the relationships shared by humans are derived from the analysis of subjective behavioral cost-benefit, as well as by comparing the alternatives upon interaction. Harmeling et al. (2017) claimed that several factors, for example, power, conformity, status, leadership, and justice within social behavior are significant to elaborate costs between negative values and rewards (sense of acceptance, support, and companionship) that have positive values on a person. Generally, one calculates the wholesome value of the relationship by including rewards and excluding costs. Worth is a positive relationship, while costs are the negative results otherwise. In short, the value of a relationship is summarized by the equation "Worth = Rewards – Costs" (Cropanzano et al., 2017).

This causal link is crucial in assessing the characteristics and value of leadership. In this study, the inherent features of the SET model are the social exchange and stability of the relationship between parties, i.e., between the leader/employer and followers/employees (Um & Yoo, 2018). Accordingly, the SET model explains the outcome on satisfaction and dependence of relationships by comparing "worth" valuation and the cost of contractual job requirements against job satisfaction and rewards. The equation suggests that the negotiation or comparative exchange of rewards and costs become pivotal variables in which positive or negative outcomes influence employee retention.

Meanwhile, the Person-Environment Fit model suggests that work stress occurs when employees perceive a difference between individual needs and whether the working environment meets employees' requirements (Ho & Astakhova, 2018). The Demand-Control Support model (De Lange et al., 2003) states that stress depends on the level of job demands, the degree of control perceived to complete tasks, and the amount of help provided to employees. According to the Equity theory, work-related stress occurs when employees view their relationship with the organization as providing more professional value rather than earning incentives (Hobfoll & Freedy, 2017).

The transactional stress and coping model shows that stress levels in the workplace rely on inner cognitive processes and how employees cognitively perceive work-related challenges. Nevertheless, the theory was never explicitly formulated to describe work stress in occupations involving health and social services to the public (Rippon, 2018). In this regard, occupational stress models provided more specific explanations on how stress factors unique to a particular occupation are enhanced (Fida et al., 2018).

On the other hand, there were no clear or important connections between work-related stress and the form or frequency of behavior threatening medical practitioners (Fawzy & Hamed, 2017). There may be other work-related factors affecting stress faced by health/social care employees who offer treatment to the public. Therefore, a thorough understanding of work-related processes is needed to assess the stress rates of medical practitioners and to avoid or de-escalate incidences of behavior that present challenges in their occupations.



Figure 1. Research Framework

In this study, the literature review of these underpinning theories forms the diagrammatic view of the research framework for the hypothesis to be tested. The following hypothesis was developed to identify the relationship between leadership style, organizational commitment, and workplace stress: *Workplace stress moderates the relationship between leadership style and organizational commitment.*

2. Methodology

2.1 Research Design

There are two-time horizons for research, cross-sectional and longitudinal studies (Collis & Hussey 2013). The cross-sectional analysis refers to research at a given moment of a particular phenomenon whereas a longitudinal study is an analysis in time observation of individuals or events (Saunders & Lewis, 2012). For this research, the cross-sectional analysis explored the relationship between leadership, organizational commitment, and workplace stress among medical practitioners at the Melaka State Health Department [*Jabatan Kesihatan Negeri Melaka* (JKNM)]. The study employed a cross-sectional design because it is a form of observational study in medical and organizational research that analyses data from a population, or a representative subset, at a given point in time (Olsen & George, 2004).

2.2 Population and Sample

The participants for this research consisted of medical practitioners (e.g medical doctors, dentists, and pharmacists) working at JKNM, Malaysia, and employed a non-probability purposive sampling technique. Purposive sampling is appropriate when a study defines a specific sample selection criterion (Cooper & Schindler, 2014). This study used the estimation of sample size in Krejcie and Morgan’s (1970) Sample Size Table. The present study involved 1,407 government medical practitioners in Melaka i.e., 1,050 medical doctors, 136 dentists, and 221 pharmacists (as of 31 December 2013). The given population used a sample size of 302. The selection of samples for this study was based on each category of medical practitioners like medical doctors, dentists, and pharmacists in Melaka and dispersed according to the working facilities.

2.3 Measures

Leadership Style. Bass (1995) created the multifactor leadership questionnaire as a tool for assessing leadership styles (MLQ). The leadership styles are discussed in this tool. This instrument was chosen because it assesses leadership across three core aspects (Yukl 2002) that can be used to create leadership profiles; it has been reliability tested and validated in other countries, and it has been used in other countries (e.g., Ekvall & Arvonen 1994). This independent variable contained three leadership style variables: Transformational Leadership, Transactional Leadership, and *Laissez-Faire* Leadership. Overall, these variables made up 36 questions and were categorized as closed-ended and measured by an interval scale of the 5-point Likert Scale.

Organizational Commitment. The Organizational Commitment Questionnaire (QCQ), developed by Mowday et al. (1979), was used to assess organizational commitment. Involvement was measured using two scales. One was a graphic scale that asked respondents to rate their level of involvement in their current job. The other asks

respondents to rate their level of involvement in their work on a 5-point scale (as opposed to involvement with their families or with leisure activities). A total of 8 questions were developed to measure each element of Affective, Normative, and Continuance commitments. All 24 questions were categorized as closed-ended and measured by an interval scale of the 5-point Likert scale that represented the level of agreement to a statement i.e. 'strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree'.

Workplace Stress. The moderating variable of this study measured by The Stress Questionnaire identified the stress factors in the respondents' work and their method or strategies of coping with the said stress. Based on the North-Western National Life (NWNL) Workplace Stress Test in Reece and Brandt's (1999) Classroom Activities Manual (1999), all 29 questions on employer support and training, work conditions and job design, and physical environment were categorized as closed-ended and measured by an interval scale of the 5-point Likert Scale.

2.4 Validity of the Questionnaire

Validity means the extent to which a research concept is accurately established by testing or measuring data collection, or the degree it is free from any systemic error (Hair et al., 2010). The questionnaire in this study used the following methods of assessment: face validity, content validity, and construct validity.

2.4.1 Face Validity

Face validity measures the scope of the instrument (Sekaran & Bougie, 2016). Experts in the field or area must verify what the research instrument is supposed to assess. Five experts confirmed the validity of the survey method in this study. Three experts were medical practitioners from Melaka, (a medical doctor, dentist, and pharmacist), and two were academics from Universiti Putra Malaysia.

2.4.2 Content Validity

Content validity is the extent to which the scale items correctly represent the entire scope of the measured contents (Malhotra, 2004). A thorough review of the research literature is required to determine the validity of the material. Accordingly, this study carried out a pilot test to ensure the adequacy of the survey instrument used to assess the validity of the material (Saunders & Lewis, 2012). This paper considered recommendations from experts on the structure and organization of the instrument to improve the consistency of the survey questionnaire.

2.4.3 Construct Validity

Construct validity indicates how well the instrument used in the analysis tests the theoretical definition and structure based on two aspects: convergent validity and discriminant validity (Hair et al., 2010). Convergent validity is the degree to which the scale positively correlates with other construction indicators (Saunders & Lewis, 2012). This study used the Factor Analysis to calculate convergent validity, whereas test discriminant validity used the Pearson's correlation test.

2.4.4 Reliability of the Questionnaire

Reliability is an assessment of how accurately a measuring instrument measures the concept against a variable's multiple measurements (Hair et al., 2010). It shows the consistency of effects for repeated measurements taken in the unit over time, population, and different elements. In other words, it indicates the reliability and precision of the measured length. This study used Cronbach alpha to evaluate the reliability of the questionnaire and the internal precision of the elements for one dimension. The Cronbach Alpha coefficient is the most widely used inter-item coherence measure in a multipoint measurement scale (Saunders & Lewis, 2012; Hair et al., 2010). Since the Likert interval scale measured the independent and dependent variables in the sample, Cronbach's alpha was deemed adequate.

2.5 Pilot Testing

Before the data collection, a pilot test conducted on 37 medical practitioners assessed the accuracy and reliability of the survey questionnaire. Pilot analysis refers to screening a particular group of interviewees to strengthen the questionnaire by finding and eliminating possible issues and vulnerabilities (Sekaran & Bougie, 2016; Cooper & Schindler, 2014). Based on the feedback and recommendations of the respondents, changes were made to the questionnaire.

2.6 Data Collection Method

There are two kinds of questionnaires that are relevant to data collection, namely, self-administered and interviewer questionnaires (Saunders & Lewis, 2012). Due to the large sample size, budget, and time constraints, this study adopted a self-administered questionnaire to collect information from the respondents (Sekaran &

Bougie, 2016). To achieve 302 responses, the questionnaires were personally distributed to 437 possible respondents at eight locations based on healthcare facilities at JKNM as shown in Table 1 below.

Table 1. Geographical Distribution of Questionnaire

No	Location	Medical Doctor	Dentist	Pharmacist
1	Melaka Hospital	772		99
2	Alor Gajah Hospital	21		12
3	Jasin Hospital	19		7
4	Melaka Tengah District Health Office	109		40
5	Alor Gajah District Health Office	62		17
6	Jasin District Health Office	44		18
7	Dentist & Pharmacy JKNM HQ	-	132	
8	JKNM HQ	23	4	28
	Total medical practitioners	1050	136	221
	Total Sample needed	224	30	48

2.7 Data Analysis Method

This study used the Statistical Package for Social Sciences (SPSS) software version 23 to analyze the data collected. According to Sekaran and Bougie (2016), the three goals in data analysis are: (1) a feel for the data obtained; (2) data quality testing; and (3) analysis hypothesis testing. To achieve these goals and the aims of this study, the following analysis methods were used to test the research objectives and hypothesis: cross-sectional analysis (descriptive analysis and factor analysis), reliability analysis (correlation analysis), and regression analysis.

3. Findings and Analysis

3.1 Response Rate

The questionnaire's response rates were calculated by calculating the net communication replies. The target population is 1,407 medical practitioners and 437 questionnaires were distributed. The total response received is 309, in which the return rate is equivalent to 70.7 percent. Based on recommendations from Aguinis et al. (2018) and Hair et al. (2013), this quantity is adequate for multivariate analysis and reporting with a response rate of at least 30 percent. The raw data input was then screened, cleaned, and checked to ensure accuracy (DeSimone et al., 2015).

3.2 Test of Normality

Three statistical tests including descriptive statistics, factor analysis, and regression analysis were implemented using parametric statistics to the homogeneous and continuous sample data (Ali & Bhaskar, 2016). Table 2 shows the normally distributed Mean and Standard Deviation values of the seven variables of this study.

Table 2. Test of Normality

Variables	Mean	Standard Deviation	Skewness	Kurtosis	Shapiro-Wilk	Sig
Transformational	3.59	.594	-.472	.427	.979	.002
Transactional	3.44	.586	-.299	-.459	.978	.001
Laissez-faire	1.85	.835	-.259	-.595	.971	.000
Affective	3.27	.771	-.669	.957	.952	.000
Normative	3.84	.727	-.648	.584	.961	.000
Continuance	17.06	.694	-.499	.268	.971	.000
Workplace Stress	19.00	.605	-.774	.206	.940	.000

The Skewness and Kurtosis found in the range of -1.96 to + 1.96 (Doane & Seward, 2011) rejected the extremely skewed or Kurtotic data issue that inflated the bootstrapped standard error (Chernick, 2011). Furthermore, the Kolmogorov-Smirnov and Shapiro-Wilk tests examined the normality of the distribution of data. The significant value of the Shapiro-Wilk test greater ($p > .05$) indicates data normality. In Table 3, the Shapiro-Wilk test shows that the data obtained were distributed normally (Hanusz & Tarasińska, 2015; Opong & Agbedra, 2016). As a result, the study proceeded to adopt parametric procedures that assume normality.

3.3 Multicollinearity

A tolerance score of 0.2 or greater, a VIF value of 10 or higher, and a Condition Index (CI) value higher than 30 (Hair et al., 2011) indicate the presence of multicollinearity. The independent variables tolerance and VIF values in Table 3 indicated all tolerance values higher than 0.2, VIF values below 10, and CI below 30 that suggested multicollinearity is not a threat to the results.

Table 3. Test of Collinearity

Independent Variables	Tolerance	VIF	Condition Index
Transformational	.505	1.979	10.772
Transactional	.314	3.181	16.006
Laissez-Faire	.398	2.515	20.129
Affective	.571	1.751	22.385
Normative	.342	2.926	25.125
Continuance	.386	2.590	29.755
Workplace Stress	.613	1.630	33.958

Note. VIF = Variance Inflation Factor

3.4 Demographic Profile of Respondents

In total, there were 309 respondents. Table 4 displays a summary of the demographic profiles of the respondents.

Table 4. Demographic Profile (n=309)

Profile	Frequency	%
Gender		
Male	82	26.5
Female	227	73.5
Age		
Below 30 years old	216	69.9
30 - 45 years old	81	26.2
More than 45 years old	12	3.9
Race		
Malay	170	55.0
Chinese	91	29.4
Indian	43	13.9
Others	5	1.6
Marital Status		
Not married	167	54.0
Married	141	45.6
Widow/Widower	1	0.3
Highest Education Level		
Graduate	277	89.6
Post Graduate	32	10.4
Profession		
Medical doctor	204	66.0
Dentist	50	16.2
Pharmacist	55	17.8
Length of Service in Public Sector		
Less than 5 years	214	69.3
5-10 years	63	20.4
More than 10 years	32	10.4
Length of Service at JKNM		
Less than 5 years	252	81.6
5-10 years	39	12.6
More than 10 years	18	5.8

Managerial Grade		
29	1	0.3
32	6	1.9
38	3	1.0
40	1	0.3
41	166	53.7
44	67	21.7
48	41	13.3
52	11	3.6
54	13	4.2

As seen in Table 4 above, out of 309 respondents, 82 respondents (26.5%) were male, and 227 were female (73.5%). In 2018, the high number of female respondents commensurate gender diversity in the medical workforce as reported by the Ministry of Health (MOH) and World Health Organization (WHO) (source: Human Resources for Health Country Profiles - Malaysia, World Health Organization, 2018). In terms of age distribution, 69.9% of the respondents were below 30 years old, 26.2% of respondents were between 30 to 45 years old, and the remaining 3.9% of respondents were more than 45 years old. The wide age range indicates a diverse sample distribution. Two-thirds of the respondents were below 30 years old. Almost 70% of respondents from this age group are junior medical practitioners who joined the public health services after their undergraduate studies to obtain full accreditation and professional membership from the professional regulatory bodies. This age group of medical practitioners is the largest group that usually quits public health services after receiving accreditation.

The majority of the respondents were Malay medical practitioners (55%), followed by Chinese respondents (29.4%), Indian (13.9%), and 1.6% of respondents categorized as others. As for marital status, 54% of respondents were not married, 45.7% were married, and only 0.3% of respondents were widowed. On the highest education level, 89.6% of respondents graduated with a bachelor's degree, and the remaining (10.4%) respondents were postgraduate degree holders.

In terms of the profession, 66% of the respondents were medical doctors, 16.2% were dentists, and the remaining 17.8% were pharmacists. Because of the length of service in the public sector, 69.3% of respondents served less than five years, 20.4% worked between five to ten years, and the remaining 10.4% served more than ten years. Conversely, the length of service at JKNM showed that most of the respondents (81.6%) worked less than five years, 12.6% worked between five to ten years, and 5.8% of respondents served more than ten years at JKNM. Therefore, the findings of this study reflected the opinion of considerably new medical practitioners at JKNM.

Finally, the survey consisted of the managerial grade 29 to grade 54. The survey showed that 0.3% of respondents were grade 29, 1.9% respondents were grade 32, 1% were grade 38, 0.3% of respondents were grade 40, 53.7% were grade 41, 21.7% respondents were grade 44, 13.3% grade 48, 3.6% grade 52 and, 4.2% of respondents were grade 54.

3.5 Goodness of Measure

In this study, the validity and reliability tests analyzed the goodness of measures. The subsequent sections discuss the results.

3.5.1 Factor Analysis

The Principal Component Analysis (PCA) was selected to extract the relevant factors (Nguyen & Holmes, 2019). According to Hair et al. (2013), loading objects above 0.50 are considered crucial. Hence, the results were derived from the Kaiser-Meyer-Olkin (KMO), Sampling Adequacy Measurements, and Bartlett Sphere Tests in interpreting the rotated component matrix. The KMO Kaiser statistics (1974) considers 0.5 to 0.7 as mediocre, with 0.7 to 0.8 as good values, 0.8 to 0.9 as high values, and 0.9 as superior values. The results of the KMO test for sampling adequacy shown in Table 5 indicated the value of 0.921 within the range of large samples. The sample size is therefore ideal for the study of the factor.

As shown in Table 6, Bartlett's Test of Sphericity is significant at $p < .001$. This significance level is small enough to reject the null hypothesis. Hence, the correlation matrix is not an identity matrix. When the abovementioned statistical requirements are satisfied, the analysis construed factors with an eigenvalue greater than 1.

Table 5. KMO and Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.921
	Approx. Chi-Square	22180.376
Bartlett's Test of Sphericity	df	2016
	Sig.	.000

3.5.2 Total Variance Explained

The study searched for variables with values greater than or equal to 1 using the criterion of Kaiser. The first ten components of Table 6 had equivalent values of more than or equal to 1 and accounted for 77.16% of the variations: component 1 represented 38.86%, component 2 accounted for 11.06%, and component 3 accounted for 7.41% of the variation. Thus, a maximum of 10 components was extracted from the combined data set, based on the analysis explained in the total variance.

Table 6. Total Variance Explained

Components	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	24.872	38.862	38.862	11.781	18.408	18.408
2	7.077	11.057	49.919	6.917	10.807	29.216
3	4.746	7.415	57.335	6.312	9.863	39.079
4	2.574	4.021	61.356	5.540	8.657	47.735
5	2.229	3.482	64.838	3.972	6.206	53.941
6	1.892	2.956	67.795	3.843	6.004	59.945
7	1.805	2.820	70.614	3.212	5.019	64.964
8	1.650	2.578	73.193	3.188	4.982	69.946
9	1.341	2.096	75.289	2.754	4.303	74.249
10	1.200	1.875	77.164	1.866	2.915	77.164
11	.997	1.558	78.722			
12	.935	1.461	80.183			
	-					
88	.004	.006	99.997			
89	.002	.003	100.000			

Note. Extraction Method: Principal Component Analysis.

3.5.3 Reliability Analysis

In this study, the alpha (α) coefficient of Cronbach estimated the internal consistency aspect of measuring instrument reliability by testing the seven key variables as illustrated in Table 7. The rule of thumb: α is good above the value of 0.9; α is excellent over the value of 0.8; α is good over the value of 0.7; α is acceptable over the value of 0.6, and α above and below 0.5 is uncommon. An alpha coefficient of Cronbach value closer to 1.0 leads to the higher internal consistency of the items in the scale. The reliability coefficients were well over 0.754 for all the measuring elements that showed the dimensions generated in this study were reliable in terms of internal consistency.

Table 7. Summary of Reliability Analysis

Variable	No. of Items	α
Transformational	8	0.754
Transactional	4	0.935
Laissez-Faire	4	0.844
Affective	8	0.833
Normative	8	0.863
Continuance	8	0.820
Workplace Stress	29	0.868

4. Discussion on Research Findings

The findings and main effects of workplace stress on leadership styles and its interaction with organizational commitment are discussed below.

4.1 Transformational Leadership

The hierarchical regression analysis tested the moderating effect of workplace stress on the correlation between leadership styles and organizational commitment among JKNM medical practitioners. The workplace stress variable was multiplied with the dummy-coded categorical variable as low, medium, and high. The three main effects and the interaction term were used in hierarchical regression to predict the organizational commitment among JKNM medical practitioners.

Table 8. Moderating effect of transformational leadership style and workplace stress and the interaction on organizational commitment

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.681	.186		9.051	.000
	Transformational Leadership	.408	.051	.415	8.003	.000
2	(Constant)	.804	.292		2.756	.006
	Transformational Leadership	.383	.050	.391	7.628	.000
	Workplace Stress	.307	.080	.197	3.838	.000
3	(Constant)	3.287	1.011		3.250	.001
	Transformational Leadership	-.351	.291	-.358	-1.207	.228
	Workplace Stress	-.454	.308	-.290	-1.476	.141
	laissez*stress	.225	.088	.952	2.562	.011

Dependent Variable: Organizational Commitment

Based on Table 8, the first model shows the main effect for the transformational leadership style of ($\beta = .415, p < .001$), which was positively associated with organizational commitment. In the second model, workplace stress was found to have a significantly positive prediction on organizational commitment ($\beta = .197, p < .001$). In this study, this is a new finding. Normally, employees who reported more workplace stress tend to have a negative organizational commitment (Cropanzano & Mitchell, 2005). In the third model, the result showed that the interaction harms workplace stress ($\beta = -.290, p > .001, p > .010$), and signified that workplace stress influenced the correlation between transformational leadership style and organizational commitment. However, this effect was qualified by the significant interaction ($\beta = .952, p < .010$), which was graphed using the techniques recommended by Aiken et al. (1991) in Figure 2.



Figure 2. Transformational Leadership Style

Figure 2 shows that under low, medium, and high levels of workplace stress, transformational leadership showed an increase in organizational commitment.

Based on Figure 2, there is a modest spread or fan effect. The fan pattern occurs at either the right or left side, and the general trend of the lines can be either negative or positive in slope. The average transformational leadership style-to-organizational commitment relationship with the moderating effect of workplace stress line is a positive slope. This result confirmed that the transformational leadership style among JKNM medical practitioners is related to them working under significant workplace stress.

4.2 Transactional Leadership

Table 9. Moderating effect of transactional leadership style and workplace stress and the interaction on organizational commitment

Model	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.699	.180		9.424	.000
	Transactional Leadership	.420	.052	.422	8.149	.000
2	(Constant)	.904	.285		3.167	.002
	Transactional Leadership	.391	.051	.392	7.619	.000
	Workplace Stress	.286	.081	.183	3.547	.000
3	(Constant)	4.350	.996		4.367	.000
	Transactional Leadership	-.677	.300	-.680	-2.254	.025
	Workplace Stress	-.772	.304	-.493	-2.541	.012
	Laissez-Stress	.327	.091	1.369	3.605	.000

Note. Dependent Variable: Organizational Commitment

In view of Table 9, the first model shows the main effect for transactional leadership style of ($\beta = .422, p < .001$). It was positively associated with organizational commitment. In the second model, workplace stress was found to significantly or positively predict organizational commitment ($\beta = .183, p < .001$). In this study, this is a new finding. Normally, employees who reported more workplace stress tend to have a negative organizational commitment (Cropanzano & Mitchell, 2005) and the third model findings proved to be significant. However, a significant negative effect of workplace stress ($\beta = -.493, p > .010$) signified that workplace stress influenced the correlation between transactional leadership style and organizational commitment. In Figure 3 this effect was qualified by the significant interaction ($\beta = 1.369, p < .001$) and graphed using the techniques recommended by Aiken et al. (1991).

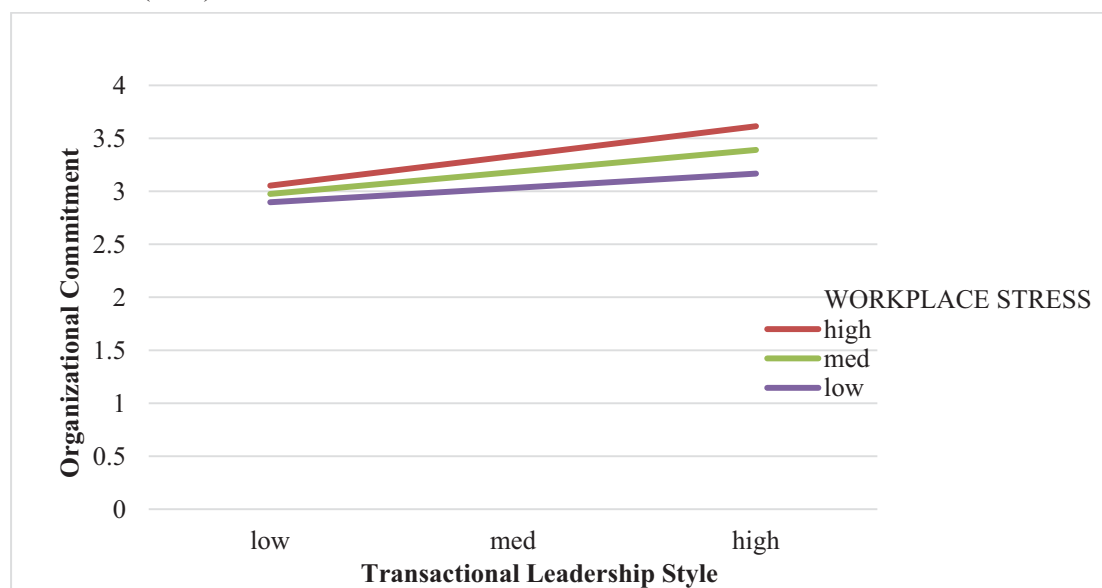


Figure 3. Transactional Leadership Style

Figure 3 shows that under low, medium, and high levels of workplace stress, transactional leadership showed an increase in organizational commitment.

As shown in Figure 3, there is a modest spread or fan effect. The fan pattern occurs at either the right or left side,

and the general trend of the lines can be either negative or positive in slope. The average transactional leadership style-to-organizational commitment relationship with the moderating effect of the workplace stress line is a positive slope. This result confirmed the transactional leadership style among JKNM medical practitioners increased their organizational commitment even though they are under significant workplace stress.

4.3 Laissez-Faire Leadership

Table 10. Moderating Effect of *Laissez-Faire* Leadership Style and Workplace Stress and the Interaction on Organizational Commitment

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.178	.081		39.234	.000
	<i>Laissez Faire</i>	-.017	.040	-.024	-4.426	.671
2	(Constant)	1.950	.273		7.147	.000
	<i>Laissez Faire</i>	-.062	.040	-.089	-1.564	.119
	Workplac Stress	.418	.089	.267	4.702	.000
3	(Constant)	4.709	.620		7.601	.000
	<i>Laissez Faire</i>	-1.392	.273	-1.993	-5.098	.000
	Workplace Stress	-.435	.194	-.278	-2.247	.025
	laissexstss	.404	.082	2.120	4.919	.000

Dependent Variable: Organizational Commitment

Based on Table 10, the first model shows the main effect for the *Laissez-Faire* leadership style and the findings show a negative outcome ($\beta = -.024, p > .010$). It can be concluded that the *Laissez-Faire* leadership style was not significantly associated with organizational commitment. Meanwhile, in the second model, workplace stress was found to be a significant positive predictor of organizational commitment ($\beta = .267, p < .001$). In this study, this is a new finding (Cropanzano & Mitchell, 2005). Normally, employees who reported more workplace stress tend to have negative organizational commitment. In the third model, the interaction term proved to be significant with a negative main effect of workplace stress ($\beta = -.278, p > .010$) and signified that workplace stress influenced the correlation between *Laissez-Faire* leadership style and organizational commitment. This effect was qualified by the significant interaction in the third model ($\beta = 2.120, p < .001$) and illustrated in **Figure 4** using the techniques recommended by Aiken et al. (1991).

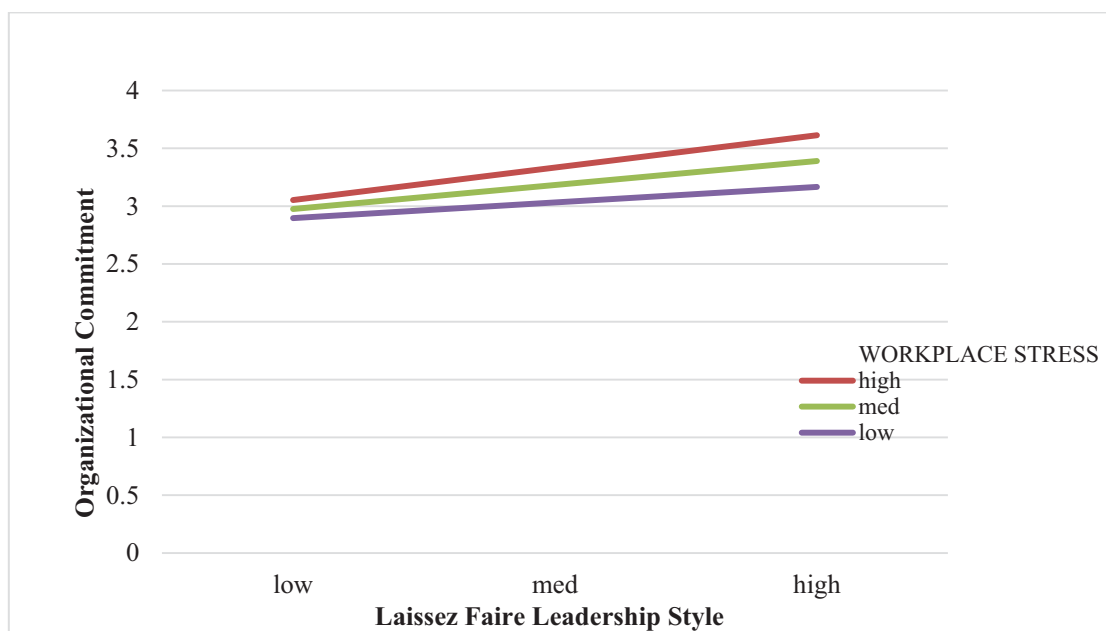


Figure 4. Laissez Faire Leadership Style

Figure 4 illustrates that under low, medium, and high levels of workplace stress, *Laissez-Faire* leadership showed an increase in organizational commitment.

As shown in Figure 4, there is a modest spread or fan effect. The fan pattern occurs at either the right or left side, and the general trend of the lines can be either negative or positive in slope. The average *Laissez-Faire* leadership style to organizational commitment relationship with the moderating effect of workplace stress line is a positive slope. This result confirmed that the *Laissez-Faire* leadership style among JKNM medical practitioners increased organizational commitment even though they are under significant workplace stress.

As for the research question, it can be concluded that in the entire leadership situation, the workplace stress factor is a moderating variable positively correlated with organizational commitment. In this study, this is a new finding. Normally, employees who reported more workplace stress tend to have a negative organizational commitment (Cropanzano & Mitchell, 2005). The main determinant to decide commitment in any set-up was the leaders and leadership styles. Organizational commitment and leadership style always goes along in a parallel dimension based on negotiated exchanges of effort and reward between leaders and followers (Cropanzano & Mitchell, 2005), as explained through the application of the Social Exchange Theory introduced by George Homans in the 1960s.

The Social Exchange Theory claims that relationships shared by humans are based on the analysis of subjective behavioral cost-benefit, and comparing the alternatives upon interaction. Homans claimed that several features, for example, power, conformity, status, leadership, and social justice, are significant to elaborate costs with negative values and rewards (sense of acceptance, support, and companionship) that have positive values on a person. Generally, one calculates the wholesome value of the relationship by including rewards and excluding costs. Worth is a positive relationship, while costs are the negative results otherwise. In short, the value of a relationship is summarized by the equation “Worth = Rewards – Costs” (Cropanzano & Mitchell, 2005).

This causal link is crucial in assessing the characteristics and value of leadership inherent in the Social Exchange Theory. The social exchange and stability of a relationship is a process of negotiated exchanges between parties and in this study between the leader/employer and followers/employees. Valuation of worth against the cost of contractual job requirements compared with job satisfaction and rewards based on the Social Exchange Theory explains outcome satisfaction and dependence of relationships (Emerson, 1976). In an employment relationship, the worth equation becomes “Outcome = Rewards – Costs” (Cropanzano & Mitchell, 2005). This equation suggests that the negotiation or comparative exchange of rewards and costs become pivotal variables in which positive or negative outcomes influence employee retention.

5. Conclusion and Recommendations

The current study examined the moderating interaction of workplace stress between leadership styles and organizational commitment among JKNM medical practitioners. The items investigated in this research identified whether employer support and training, work conditions and job design, and physical environment have significant interaction between leadership styles and organizational commitment. The research findings concluded that in all leadership situations, the workplace stress factor is a moderating variable positively correlated with organizational commitment.

In summary, this study confirmed the medical profession as a noble profession with dedicated JKNM medical practitioners. In line with the notion of a noble calling, medical practitioners place importance on self-satisfaction rather than motivation in terms of monetary rewards. As a service-based industry, demographics such as gender and race also influenced the medical profession. The findings in this study concluded that leadership styles contribute significantly and play an important role in nurturing organizational commitment among medical practitioners at the Melaka State Health Department despite the presence of workplace stress. As a result of its collectivist society, which has a stronger preference for hierarchical relationships in terms of power, conformity, status, leadership, and justice within social behavior as explained by Social Exchange Theory, the above findings suggest that leadership styles are critical to the organizational commitment of medical practitioners in the Malaysian context (Sim al. 2004). In addition, the findings of this study show that there is a clear correlation between leadership styles and organizational commitment, which is moderated by workplace stress, that is connected to person-environment fit. This indicates that leadership styles should be focused on increasing total person-environment fit, which will lead to increased organizational commitment. At last, a medical practitioner should strive to improve their leadership styles and organisational commitment.

6. Implications

This study contributes to the growing body of knowledge specifically related to the leadership styles and

organizational commitment among JKNM medical practitioners. Given the theoretical model contribution, the empirical results explained how medical practitioners should think critically about what, how, and why they must address leadership styles and organizational commitment. In other words, the theoretical model emphasized and promoted "reflection-on-action" of leadership styles and organizational commitment in the medical profession. Similarly, the theoretical model's empirical finding revealed that medical practitioners must understand the ability of public health organizations to build and maximize sustainable medical practitioners that bring effective changes through leadership styles and organizational commitment. Finally, healthcare leaders must pay attention not just to their leadership styles, but also to whether or not they are targeted at enhancing the fit between medical practitioners and their work environments. It is critical that policymakers consider the problems that medical practitioners face at the implementation level when establishing the leadership environment in order to provide chances to entrench leadership styles and organisational commitment in the healthcare sector.

7. Limitations and Recommendations

The main limitation concerned the results of this study. Firstly, medical practitioners employed as respondents participated in a questionnaire study and a semi-structured interview. Therefore, the sample could be influenced by the medical practitioners' professional experience and knowledge. Secondly, the statistical analysis only provided numerical relations in the quantitative phase. The understanding of these figures depends on the researcher's subjective evaluation. However, the results comply with other theories and studies, which enhanced confidence in the findings. Future research using a pure quality ethnography method is recommended for a better understanding of this study.

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The Relationship Between Family Functioning and Religiosity on Readiness for Change Among Persons under Surveillance

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Abstract

There are numerous theoretical perspectives on addiction and the behavioural change processes during the transition from addiction to recovery. Although the precise nature of the relationship between religion and family function has not been discovered, it has been highlighted as a significant component in addiction. This study examines the relationship of family functioning and religiosity on the readiness for change among Persons under Surveillance (PuS). We randomly selected respondents ($n = 85$) of PuS in the National Anti-Drugs Agency (NADA), Jempol District, Negeri Sembilan, Malaysia, who participated in this study. Descriptive analysis was used to identify the level of family functionality, religiosity and readiness for change. Next, Pearson correlations were used to determine the relationship of family functionality to change and religiosity to the readiness for change. Findings showed a significant correlation ($p = 0.00$, $p < 0.05$) between family functioning and readiness for change and it was a low positive correlation ($r = +0.47$). Moreover, findings showed a significant correlation ($p = 0.01$, $p < 0.05$) between religiosity and readiness to change the relationship was a weak positive correlation ($r = + 0.27$). In conclusion, family functioning and religiosity are related to readiness for change. This relationship is significant for PuS in NADA Jempol to implement self-care and for the divisional staff involved in NADA Jempol to develop prevention and rehabilitation strategies to prepare PuS out of the drug problem.

Keywords: family functioning, religiosity, readiness for change, persons under surveillance

1. Introduction

In Malaysia, the number of persons under surveillance (PuS) registered in the National Anti-Drug Agency (NADA) rehabilitation programme climbed dramatically from 46,139 in 2015 to 64,559 in 2017 (NADA, 2018). This steadily increasing trend shows that an increasing number of former addicts receiving treatment and recovery are being released under surveillance. They are depicted struggling to build a new life, maintain healing, and integrate into their environment and society. Generally, a PuS monitored by a Rehabilitation Officer is obliged to comply with the supervision order's criteria within two to three years, considering the client's commitment to the rehabilitation programme (NADA, 2018).

On the other hand, Othman, Idris and Druis (2017) revealed that a few PuS complied with the NADA's surveillance programme. PuS's efforts to overcome drug addiction require physical strength, a fighting attitude, and the support of family members and the surrounding community. In comparison, Jasni et al. (2018) discovered that ex-prisoners migrate due to the fragility of the social integration process between ex-prisoners and their families. The unfriendly relationship between families and ex-prisoners causes them to migrate and live separately and alone without the support of family members.

According to Frazier et al. (2015), incarcerated individuals confront various barriers during their rehabilitation and reintegration into society. For example, they confronted racism, a lack of family support, homelessness, unemployment, compulsive drug and alcohol use, an imbalance of mental health services, and a paucity of health care when reintegrating into the community. Thus, maintaining positive relationships with family, personal development, professional advancement, social activities, and a healthy lifestyle should be stressed to aid addicts throughout their lives in their rehabilitation (Matokrem, 2007). Intrapersonal difficulties that inhibit treatment and rehabilitation include an inability to cope with stress, low self-esteem, and manage interpersonal conflicts

with family and others (Lee, Shin, & Park, 2014; Tkacz et al., 2013). By contrast, Mirković-Hajduković et al. (2017) revealed that a lack of familial support is the key factor that contributes to a person developing a heroin addiction.

Among the factors that become predictors of success in treatment and rehabilitation is the high awareness and readiness of addicts to change. Readiness for change is a concept that has been linked to success in the treatment and recovery process, particularly for drug users (Gannoni & Goldsmid, 2017). A successful recovery process must begin with the addict's initial knowledge and readiness for change. Without a readiness for change, it is guaranteed that the drug rehabilitation process would fail miserably. The findings of a study conducted by Ibrahim et al. (2018) on 380 people referred to as PuS, that is, those who have completed a Cure and Care Rehabilitation Centre (CCRC) treatment programme and are currently supervised outside the institution was used to determine the likelihood of relapse and success in maintaining recovery among residents who have completed CCRC treatment and rehab. The findings of study 4 indicated that PuS included in the NADA observation phase demonstrated a low level of relapse tendency (emotional distress, social, environmental stress, family relationship conflict, and re-craving for drugs) that was manageable and not alarming. Indeed, researchers have discovered that PUS demonstrates a high level of drug-free self-efficacy. In addition, most PuS is also observed to use problem-solving strategies constructively in their daily lives, which predicts PuS's success in maintaining the recovery state.

Meanwhile, Freyer et al. (2004) discovered no correlation between treatment and an addict's readiness for change. They discovered that, although an addict has long and frequently received therapy and rehabilitation, the addict's level of readiness for change remains unchanged. This situation implies that an addict's lack of self-awareness regarding change contributes to their inability to change behaviour and thus maintain recovery. Blancard et al. (2003) discovered that drug users seek therapy because of a lack of motivation and readiness for change. Some addicts went to treatment based on the court or a particular organization mandated. This unreadiness has been cited as a reason for addicts' failure to fully recover from the effects of drugs, resulting in a multi-stakeholder discussion condemning drug rehabilitation institutes for failing to educate addicts.

1.1 Family Function

According to Fox (2015), social integration is a difficult process since recovering drug users must establish and maintain a positive sense of self, (ii) develop and maintain healthy relationships with family members, and (iii) avoid re-engaging in activities that violate social norms. However, Travis and Waul (2003) discovered that strong family support is crucial for persons just released from prison since family members' positive acceptance and emotional support can aid in social integration. As a result, family support is crucial for social integration.

Previously, Cullen (1994) suggested that family members' support and motivation is cost-effective in terms of increasing the individual's responsibility, (ii) fostering positive interaction between the individual and family members, (iii) fostering a loving bond between the individual and family members, and (iv) bolstering the individual's coping skills. According to Gómez et al. (2010), those who receive less support from family members experience emotions of isolation and loneliness and a sense of being disregarded by others. While Lopez et al. (2014) and Juan and José (2017) feel that a lack of support and motivation from family members contributes to an individual's re-engagement in criminal activity, this negatively influences their social integration process.

Former drug addicts have recovery characteristics when they have healthy family relationships, which have a significant favourable effect on the recovery retention process (Ibrahim et al., 2017). A recovering addict's relationship with their family would be robust and positive (Ghazalli et al., 2020). Thus, the more family support the recovering addicts receive, the more likely they will remain sober and avoid relapse (Hemovich, Lac & Crano, 2011). Gilligan (1995) has shown that family support is crucial for developing strong bonds among family members and, consequently, strengthening family members' resilience when faced with stress and difficulties in life. While a study conducted by Bahr, Maughan, and Marcos (1998) indicated that family members with strong connections and bonds could assist keep children out of wrong settings such as drug abuse. On the other hand, bad relationships between family members can intensify family troubles and increase family members' risk of developing substance abuse disorders (Buehler, 2006).

1.2 Religiosity

Religious life or religiosity is critical in human life because religion and knowledge significantly impact an issue's receptivity to acceptance, the development of competitive human capital, and the establishment of commendable morals or attitudes. Additionally, it would affect behaviour, practices, and personality (Muhamad, 2006), life satisfaction and psychological well-being (Carlucci et al., 2015), morality (Aziz, 2021), and happiness

(Ulfa & Puspita, 2020). Mohamed, Che Din, and Ishak (1998) suggested that a lack of religious upbringing and family fragmentation substantially affects adolescents' drug use and abuse behaviours. Pfeiffer et al. (2018) suggested that religious belief is one of the most significant tools for resisting emotional and mental distress and health self-management. Adherence to unambiguous ideas and viewpoints based on religious teachings can help prevent teenagers from engaging in harmful and excessive free association.

Whereas Culver and Lundquist (2017) discovered that people who feel an attachment to the divine are more likely to feel positive about the direction and purpose of their lives. In addition, religious rituals among prisoners foster a constructive attitude toward cognitive and emotional rehabilitation. Finally, these adjustments can stimulate prosocial behaviour, preventing them from re-engaging in crime and facilitating their effective reintegration into society (Giordano et al., 2008).

According to Geppert, Bogenschutz, and Miller (2007), most prior research has demonstrated a negative association between religious variables and addictive behaviour. It demonstrated that the stronger or more fervent an individual's religious convictions, the lower the likelihood of engaging in addictive behaviours. Grier and Gudiel (2011) have discussed how religion might act as a bulwark against various destructive behaviours, particularly among adolescents.

Religion can give social capital (caring and compassion) and social control to an individual. Thus, engaging in various religious activities such as praying, visiting houses of worship, and properly fulfilling all religious obligations indirectly cleanses an individual's soul, heart, and mind, causing them to be calmer, more inclined toward goodness and perpetually abstain from immoral acts. Those dissatisfied, abandoned, and rejected from society are observed to begin rebuilding hope when they feel accepted, loved, owned, helped, and cared for by God despite local community rejection (Inzlicht, Tullett, & Good, 2012). Corwyn and Benda (2000) assert that frequent attendance at religious services is another religious activity that can persuade individuals to abstain from various risky behaviours, including drug use. Mohd Arifin (2017) concurs, adding that one of the criteria determining a religion's well-being is the notion that God loves oneself. The average PuS recognizes that they are still loved by God and believe in a God. Therefore, religiosity is found as one of the factors contributing to their ability to improve their behaviour and feel guilty about resuming drug use.

1.3 Objective

Therefore, since the readiness for change is an important factor in arranging effective treatment for addicts, this study was conducted to examine the relationship between readiness for change with family functioning and religiosity on individuals on surveillance (PuS) in NADA Jempol District, Negeri Sembilan, Malaysia. Specifically, the following hypotheses were tested:

1.3.1 There is a significant relationship between family functionality and readiness for change among PuS in NADA Jempol.

1.3.2 There is a significant relationship between religiosity and readiness for change among PuS in NADA Jempol.

2. Method

2.1 Research Design

This quantitative study uses a correlation study to examine the relationship between family functioning and religiosity with a readiness for change. A correlational research design investigates the relationships between family functionality and religiosity with the readiness for change among PuS in NADA Jempol. A correlation reflects the strength and or direction of the relationship between these three variables. The direction of a correlation can be either positive or negative. We choose this correlational design to determine whether there is a causal relationship between the variables. However, the researcher cannot influence the independent variable due to its impossibility, impracticability, or unethical nature. The survey method is used in this correlational research. It entails randomly selecting variables or participants in the research and completing a questionnaire based on the subjects of interest.

2.2 Participants

This study was conducted on 85 randomly selected samples among Persons under Surveillance (PUS). The study population in this study refers to the clients in a surveillance programme. It is limited to case studies in a single district, namely NADA Jempol, Negeri Sembilan, Malaysia. The study included various races who had completed the Cure & Care Rehabilitation Centre (CCRC) treatment and rehabilitation programme, and they are currently involved in a 6-month surveillance programme.

2.3 Research Instruments

The researcher used the questionnaire method as a research tool. The questionnaire used in this study had four parts, part A (Respondent Demographics), Part B (family function), Part C (religiosity), and Part D (readiness for change).

2.2.1 Part A:

Demographics of respondents. This part is a questionnaire related to the respondents' personal information. The researcher designed it to collect background information of the respondents. The items contained in section A are the respondent's personal information such as gender, age, race, religion, employment status, marital status, academic level, and material intake status.

2.2.2 Part B:

The Family Adaptation and Cohesion Scales III (FACES III) questionnaire measured the family function. Olson developed FACES III in 1983 to investigate family dynamics (Olson, Russell & Sprenkle, 1983) and assess two significant dimensions on the circumplex model: adaptability and cohesion of the family. This measure assesses the degree to which family members are adaptive and attached to their family. In this study, all respondents involved had to answer all the questions according to the complete instructions in the questionnaire form provided. The FACES III instrument contains 20 items with a 5 Likert scale, ten odd-numbered items measuring cohesion, and ten even-numbered items measuring adaptability. The reliability of FACES III for the Malay version was $\alpha=0.80$ (Rohany et al., 2011)

2.2.3 Part C:

Universal Religiosity-Personality Inventory (URPI) Questionnaire is used in the study to measure religiosity. The questionnaire adapted to measure religiosity is the only instrument designed to measure religious practices according to mould and culture in Malaysia. This instrument is known as the Muslim Religiosity-Personality Inventory (MRPI), designed by Krauss, Hamzah, and Idris (2007). MRPI is tailored to Malaysian society comprising various religious and racial backgrounds through the Universal Religiosity-Personality Inventory (URPI). There are two dimensions measured through URPI, namely the dimensions of prosocial and ritual behaviour. The 20 items selected consisted of 10 items to measure prosocial behaviour and another ten items to measure ritual behaviour. A 5-point scale was used to measure religiosity from a range of 1 (never), 2 (rarely), 3 (sometimes), 4 (ever), and 5 (always). Cronbach's alpha values for each dimension exceeded 0.7.

2.2.4 Part D:

We used the University of Rhode Island's Change Assessment (URICA) to assess individuals' readiness to change. The URICA was developed and validated in 1983 by McConaughy, Prochaska and Velicer, to classify subjects into the Stages of change in psychotherapy and can be used for health risk behaviours. This questionnaire has been translated into Malay and has demonstrated reliability with coefficient values greater than 0.70 in local research (Mohd Rafidi & Abdul Halim, 2012; Tharbe et al., 2021). The URICA is a 32-item self-report measure comprised of four subscales that assess four distinct stages of change: Contemplation, Action, and Maintenance.

2.4 Data Collection and Data Analysis

To collect data, the researcher distributed and administered the questionnaire to the respondents. The researcher delivered questionnaires manually on-site, and time was allotted for 30 to 40 minutes. Inferential statistics were used to look at Pearson correlations to identify the relationship of family functioning and religiosity with the readiness for change. The data obtained from the instrument was processed using SPSS software version 26.

3. Results

A total of 85 respondents were involved in this study. They consisted of 80 (94.1%) males and 5 (5.9%) females. Then, there are three age categories, namely 21 - 30 years a total of 14 people (16.5%), age category 31 - 40 years is 51 people (60%) and age category 41 - 50 years people which is 13 (15.3%) and 51 years category and above seven people (8.2%). In terms of the Malay, the race was 79 (92.9%), Chinese 3 (3.5%), and Indian 3 patients (3.5%). In terms of religious beliefs, 80 people are Muslims, (94.1%) Buddhists 1 person (1.2%) and Hindus 4 people (4.7%). The distribution in terms of employment status was 59 people (69.4%) employed, and 26 people (30.6%) were unemployed. Meanwhile, in terms of marital status, the single category was 48 people (56.5%), the married category was 28 people (32.9%), and the divorced category was nine people (10.6%). Then in terms of academic level, a total of 25 people (13.9%) respondents are at the level of PMR / PT3, 17 people (20.0%) are at the level of SPM, at the level of diploma, form 6 or matriculation is a total of 54 people (63.5%).

The degree level is eight people (9.4%). As for the status of substance intake, for the category of continuous substance intake, 12 people (14.1%) had stopped and took back 54 people (63.5%) and continued to stop taking substances 19 people (22.4%). Complete information of respondents as in Table 1.

Table 1. Demographic Data

Item	Frequency (n=85)	Percentage (%)
Gender		
Male	80	94.1
Female	5	5.9
Age		
21 – 30 years	14	16.5
31 – 40 years	51	60
41 – 50 years	13	15.3
51years above	7	8.2
Race		
Malay	79	92.9
Chinese	3	3.5
Indian	3	3.5
Religion		
Islam	80	94.1
Buddha	1	1.2
Hindu	4	4.7
Employment Status		
Employed	59	69.4
Unemployed	26	30.6
Marital Status		
Single	48	56.5
Married	28	32.9
Divorced	9	10.6
Education Level		
PMR / PT3	17	20.0
SPM	54	63.5
Diploma/ Form. 6 / Matric	8	9.4
Degree	6	7.1
Continuous Substance Intake		
Continuous use	12	14.1
Stopped and took back	54	63.5
Continue to stop	19	22.4

There are two hypotheses in this study:

3.1 There is a significant relationship between family functionality and readiness for change among PuS in NADA Jempol.

Table 2. The relationship between family functioning and readiness for change.

	Family Function	Readiness for Change
Family Function	-	
Readiness for change	.43**	-

Note: ** Correlation significant level at 0.05 (2-tailed)

Table 2 shows the results of the relationship between family functionality and readiness for change. The results showed a positive relationship, $r = 0.43$, $n = 85$ $p = 0.00$ between family functionality with readiness for change. The relationship was significant because $p < 0.05$. The relationship also shows a low positive relationship because the correlation coefficient falls between 0.3 to 0.5. Any change to family functionality results in a linear

relationship of weak strength with change for readiness. Ha1 was accepted because there was a significant relationship between family functionality and readiness for change, but the relationship is weak.

There is a significant relationship between religiosity and readiness for change among PuS in NADA Jempol

Table 3 shows the results of the relationship between religiosity and readiness for change. The findings showed a positive relationship, $r = 0.27$, $n = 85$ $p = 0.01$ between religiosity with readiness for change and the relationship was significant ($p < 0.05$). The correlation relationship also shows a very weak positive relationship because the correlation coefficient falls between 0.00 to 0.30 (Hinkle, Wiersma, & Jurs 2003). Any change to religiosity would result in a linear relationship of very weak strength with change for readiness. Therefore, Ha2 was accepted because there was a significant relationship between religiosity and readiness for change, but the relationship is very weak.

Table 2. The relationship between religiosity and readiness for change.

	Religiosity	Readiness for Change
Religiosity	-	
Readiness for change	.27**	-

Note: **Correlation significant level at 0.05 (2-tailed)

4. Discussion

This study aimed to determine the relationship between family functioning, religion, and willingness to change. The findings suggested a little positive correlation between family functionality and readiness for change, while religion and readiness for change had a weak positive correlation. Thus, this study established the effect of family functioning and religiosity on the readiness of PuS in NADA Jempol to change. Although the connection between these two factors is small, they are inexorably intertwined in an individual's life. In summary, these findings educate the NADA, schools, and the general public on the importance of family and religion in each person. Inference analysis showed a significant relationship between functional family variables with the readiness for change low positive correlation. In contrast, the relationship between religiosity and readiness for change showed a significant relationship with a weak positive correlation.

The results showed a significant relationship between family functionality and readiness for change among PuS NADA Jempol. Although the study results showed a low positive relationship, there is still a relationship between family functionality and readiness for change. The research results found that the role of the family affects the readiness for change. Even so, the value of the relationship found is small. The result can be interpreted that many respondents have families that play a good role, but the family situation does not significantly impact the readiness for change. A similar finding by Blancard et al. (2003) found that drug addicts who received treatment lack high motivation and readiness for change. This situation may be because addicts present to receive treatment have been instructed by a court or a particular organization to receive drug treatment and rehabilitation. This coercion has been among the factors of addicts' failure to fully recover from drugs to the point of multi-stakeholder controversy pointing fingers at drug rehabilitation institutions perceived as failing to inject awareness into drug addicts (Wellish, Prondergast, & Anglin, 1995).

According to Bowen's theory, a person with high self-differentiation can control their emotional system. They can differentiate emotions, thoughts and make decisions based on a combination of these two processes. (Kerr & Bowen, 1988). A person with self-differentiation can balance the emotional and thought systems in every action and decision-making and consider the commonality of individuality funds appropriately. Friedman and Beschner (1985) reported that most drug addicts came from families divided due to divorce, separation or the death of the head of the family. A study based on Kulkarni and Biradar (2018) observations found that most abusers opined that family-related issues were the main reason for using substances. Russell's (1980) study found that children who received less love from their parents were more likely to engage in deviant behaviours, especially drug abuse. Low et al. (1996) also found that parents and their children agreed that unfulfilled needs such as 'not being respected recognized for one capabilities' and 'not being loved or treated fairly by parents' were causes of drug abuse. Drug addiction is a problem that is always given serious attention as this issue can affect the harmony of society and increase crime rates.

A study by Rahman et al. (2009) suggested that family members' and others' involvement in the addict rehabilitation process to ensure recovery can be realized. Furthermore, they found that the relationship problems with family members and girlfriends are also a source of recurring behaviour. The findings of this study are in line with the findings of a study conducted by Zeng and Tan (2021), suggest that family members should

collaborate with drug addiction treatment centres and participate in the education and treatment process to help reduce drug relapse. The institution of the family is closely related to the self. Families who can still accept addicts as their members play a role in strengthening the addict's identity. In addition, the family is a very strong anchor because it is associated with the emotional attachment (emotional attachment) of the respondent to the family and the respondent is aware of the implications of their actions on their loved ones.

While the study's findings indicate a weak positive association, there is still a significant correlation between religion and willingness to change. The level of religion is moderate, as is the level of adaptability. Based on their findings, the researchers indicated that the initiative done by NADA in integrated the religious programming into their modules to assist PuS is a good effort. This finding is consistent with Galanter, Hansen and Potenza (2021) findings that religious or spiritually oriented drug rehabilitation programmes develop addicts' self-resilience and personal traits. Additionally, spiritual and religious programmes have been recognized to assist addicts in changing their drug-abandoning behaviours. According to Corwyn and Benda (2000), frequent worship at houses of worship is also a religious practice that might positively influence a person's decision to abstain from many harmful activities, including drug use. It can be concluded that religious or spiritual drug recovery programmes could more effectively mould addicts' personal qualities. Even spiritual and religious programmes have been identified as effective in assisting addicts in changing their drug-free behaviours.

Apart from that, PuS, who are improving in their life, can be seen through several recovery features, namely from religious or spiritual well-being, emotional management, and behaviour in the community. For example, a systematic review and meta-analysis study proved religious interventions' efficacy in helping people with substance use problems. (Hai et al., 2019). Furthermore, it showed that PuS who remain recovering would 'connect' to God because they know every action has a reward. This data is supported by several previous research stating that religion acts as a protective factor over drug addiction (Hodge, Cardenas, & Montoya, 2001; Kulis et al., 2012) and is an important part of the recovery process (Grim & Grim, 2019; Laudet et al., 2006; Walton-Moss, Ray, & Woodruff, 2013).

Similarly, Ibrahim et al. (2017) concluded that spiritual and religious programmes could significantly assist addicts seeking to shift their behaviour away from narcotics. Possessing a high level of religious practice might instil confidence to continue evolving. They feel more at ease if PuS is more oriented toward religious programmes. Additionally, Salam, Wahab & Ibrahim (2013) explained that when a Muslim submits to God through repentance and recitation of the Quran, the GSR (Galvanic Skin Response) changes, indicating a more positive emotional response. It is proposed that emotional regulation, concentration, and meditation with suitable sighs can improve psychophysiological performance. Psychospiritual-based treatment and rehabilitation approaches have a stronger tendency to stabilize recovery than drug-based approaches.

The link between religiosity and openness to change among PuS in NADA Jempol is also weak. This condition can be described by Bronfenbrenner's (1989) ecological systems theory, which states that a kid's growth occurs due to a reaction between the child and the environment. In this case, it is considered that the child's reaction to their environment affects the child's growth and development. According to the notions in this theory, whether we are aware or not that children are microsphere (centred in the middle) individuals, external circumstances can influence them. This religious experience is incorporated into the system that shapes a child's growth. The mesosystem incorporates this religious experience. A mesosystem is a response between microsystems in which problems in one microsystem affect the state of another microsystem. The readiness for change is moderate for PuS in NADA.

According to behavioural theory, this theory considers the environmental factors that cause behavioural problems and the effects of these behaviours. It involves many aspects of personal life. For example, spirituality and family relationships also need to be considered. Grier and Gudiel (2011) also noted that religion is a viable defence against various negative behaviours, particularly adolescents.

Religion can create a sense of security for social capital (caring and love) and individual social control. Thus, partaking in various religious activities such as praying, praying, visiting houses of worship, reading the book, and properly fulfilling all religious obligations would unwittingly purify one's soul, heart, and mind, allowing one to be calmer; loving goodness always steers clear of evil behaviours. Thus, the presence of religious programmes is a powerful deterrent to drug usage. For instance, increased attendance is connected with a decreased risk of marijuana usage (Bartkowski & Xu, 2007). However, other studies have discovered that sporadic religious attendance is connected with an increased chance of drug use (Steinman, Ferketich & Sahr, 2008). Thus, additional research is needed to evaluate how religious attendance explains drug use by affiliation and level of religious relevance. According to Palamar, Kiang and Halkitis (2014), individuals with a high

religious presence may be protected from drug use; yet, religiosity is a personal feature that is difficult to change. While peers of the same denomination can inspire people to attend religious services more frequently, changing one's fundamental views is tough.

Future researchers should consider several study limitations. Given that the results are based on participants' self-reported data, it is feasible that the readiness behaviour questions were answered in a socially acceptable manner. Another drawback is the data's generalizability to other populations, as this study only looked at PuS in NADA, Jempol District, Negeri Sembilan, Malaysia. The selection of the future research samples might be expanded to include the NADA of other districts and states to see significant links. Furthermore, because there is little research on the subject, it can be further studied by including demographic data, self-esteem, loneliness, happiness, or life satisfaction. The researcher thinks that this approach would draw attention to the need for more research into substance abuse.

Furthermore, the amplitude of the associations between family support and religion (.42 to .25) fell within Cohen's (2009) limited range of significance. Thus, these correlations are significant enough to cause multicollinearity issues. Finally, due to the cross-sectional character of this study, no causal implications can be drawn from the findings.

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Assimilation of the KWHL Model: A Review of Learning and Facilitation (LaF) of HOTS for Argumentative Essay Writing

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Abstract

It is a necessity for teachers to develop higher-order thinking skills (HOTS) into learning and facilitation (hereafter known as LaF) processes implemented in the classroom. Teachers should carefully balance the content of knowledge or knowledge they wish to convey and then integrate with other skills, especially HOTS. This research set out to examine the assimilation of HOTS into the LaF of argumentative essay writing as carried out by Malay language teachers in secondary schools. To obtain a holistic overview of the methods used by teachers in LaF, a qualitative case study approach was employed as the research design of this study. Two research participants were involved voluntarily in this study, and it was conducted at a boarding school in a district in Selangor, Malaysia. Data were collected through in-depth interviews and classroom observations with the two participants. The findings revealed that the assimilation of the KWHL model for the LaF of HOTS argumentative essay writing could be seen through (i) the pair-think-share activity; and (ii) the usage of self-assessment whiteboard.

Keywords: the KWHL model, higher order thinking skills, argumentative essay, case study

1. Introduction

1.1 *Assimilating the Higher Order Thinking Skills*

Efforts to assimilate Higher Order Thinking Skills (hereafter known as HOTS) into learning and facilitation (hereafter known as LaF) processes in schools that serve as an important part of the nation's educational agenda have made a significant impact on the Malay language educational system (Bahasa Melayu) (Yahya, 2003). As a result, the teaching of essay writing skills in the Malay language has come to be seen as an ideal opportunity to instill enhanced and sharpened thinking skills in students (Maharam, 2000; Roselan, 2001; Rajendran, 2008; Yahya, 2014; Abdul Rasid, Shamsudin, Azhar, & Juanes, 2016). Writing skills require students to generate ideas, and have a sound knowledge of the accepted standards of essay writing. There is also the need to apply various thinking strategies to produce relevant ideas and keep a check on aspects of language to reinforce their essays.

Writing skills are considered the most complex of communication activities and are directly assessed in examinations. Therefore, a student must grasp a crisp and clear command of writing skills in line with the criteria set for essay writing for examinations, a fact which will inevitably boost the student's potential of obtaining an excellent level of achievement or even a distinction. The implication is that the overall achievement of a student in the Malay language subject exam could be enhanced, which would, in turn, affect the student's overall results in the Sijil Peperiksaan Malaysia (SPM) or the Malaysian Certificate of Education, since passing the Malay language paper in the said examination is compulsory for all students. Consequently, the identification of all the key aspects of teaching essay writing skills could produce Malay language education practitioners who are more focused on guiding and educating students.

The assimilation of HOTS in the LaF process by teachers could help students master competent language skills and self-learning in a more profound, consistent, productive and effective way (Yahya, 2014). Siti Khairiah

(2012) also stated that when carrying out LaF, a Malay language teacher should exhibit expertise, and be thoroughly engaged to achieve the following (i) the obtaining of pedagogical knowledge; (ii) the obtaining of content knowledge; (iii) the providing of a conducive learning environment; (iv) the boosting of students' knowledge by merging language proficiency with activities which possess elements of HOTS such as exploring, information search; reporting, and product creation; and (v) the cultivating of a love for the Malay language. If all the above-mentioned roles are effectively practised, the teachers' rightful claims as the proponents of thinking pursuits among students could be fulfilled to actualise the agenda of national education to assimilate HOTS into the LaF process. The assimilation of HOTS into LaF is crucial to cultivate a lifelong learning attitude among students. This fact is proven through a statement made in Malaysian Education Blueprint (MEB) (2013-2025).

Each student needs to develop proficient inquiry and learn ways to continuously receive lifelong knowledge in order to possess command of various knowledge streams, and create new knowledge. Higher order thinking skills and the capacity to effectuate innovation is particularly critical in the rapid technological growth of technology. Each student is required to master a diverse range of cognitive skills such as creative and innovative thinking (potential to innovate, generate new probabilities and create ideas and new knowledge); critical thinking and reasoning (ability to analyse information, troubleshoot and approach issues at hand critically, logically inductively and deductively as means of finding solutions and eventually arriving at sound decisions); and learning abilities (ability to drive self-learning, as well as the potential to appreciate lifelong learning values).

(Ministry of Education Malaysia, 2013: Section 2-5)

The production of quality writing outputs is also strongly influenced by the LaF implemented by teachers. This is because the teacher's knowledge of the content of the writing, the construction of writing and the use of effective teaching strategies greatly help students develop cognitive ability in building links and continuity of ideas in the process of writing discourse (Marohaini, 2004). In addition, the use of effective teaching and learning strategies, as well as methods to implement HOTS in LaF, can develop students' minds (Wan Mat & Norkhairiah, 2011; Sharifah Nor, Nor Adibah, Mohd Mahzan & Aliza, 2012). In this study, two main issues that are highlighted related to teachers' pedagogical knowledge, namely the application of HOTS in LaF and teachers' content knowledge, which is the process of writing argumentative essays. For issues involving teachers' pedagogical knowledge related to the application of HOTS in LaF, various researches related to the application of HOTS in disciplines at the school level have been conducted (Md. Yusof, 2006; Suhaimi, Baharuddin, Hasnah, Norasykin & Zaleha, 2014; Yahya, 2014; Muhamad Sidek, 2016). Most researchers have the same core of recommendation that HOTS should be improved through the use of effective teaching methods, approaches, techniques or strategies. The variety of these approaches, techniques or strategies act as triggers that can stimulate and generate students' cognitive abilities during PdPc implementation (Shamsuddin, Ruzlan, & Siti Noor, 2016).

To ensure that the above-discussed purpose is ably accomplished, Malay language teachers are expected to consistently integrate creative and innovative elements into their delivery of learning content. This is necessary seeing that the role of a Malay language teacher is not defined by teaching the language as it is delineated in the syllabus alone; instead, the teacher is also required to act as one who propels and opens up young minds by giving equal consideration to the underlying elements of the syllabus (Yahya, 2014). Additionally, Malay language teachers are also required to play a crucial role in empowering the minds of students to ensure that HOTS is effectively mastered to enable enhancement of their language proficiency since through the assimilation of HOTS, students will be able to control, dictate the direction of, and measure the progress of their lessons (Yahya, 2014).

It has become necessary for teachers to strive and produce individuals who are knowledgeable, skilled, and possess spiritual resilience and distinctive personality (Zarina, 2016). To ensure the successful realisation of HOTS's vision and goals, teachers must possess, and exhibit expertise in knowledge and intellectual strength of the highest order; strong professional skills that are further empowered by competency in new skills and technologies; sound appreciation of teaching values and ethics; as well as individual strengths and admirable personalities that are in tandem with the nation's aspirations.

1.2 The Argumentative Essay

The argumentative writing pedagogy entails students to think using HOTS, hence teachers' effective mastery and delivery of knowledge is essential as each phase demands them to present students with the task of designing, translating ideas, revising, refining, and perfecting the work repeatedly through the engagement of very complex cognitive activities in producing high-quality writing (Rajendran, 2000, 2001a, 2001b, 2001c, 2002 & 2008). In

addition, teachers with high mastery of argumentative writing skills can overcome constraints in T&L based on HOTS particularly in the essay writing process, when it comes to students' struggle in finishing the argumentative essay writing assignments (Wolfe, Britt, & Butler, 2009). Besides that, it was discovered that students were confused about the selection of assignment titles (Wei Zhu, 2001) and they were also limited by the argumentative essay page requirement (Wei Zhu, 2001).

Students were found to face challenges in terms of structuring and organising ideas (Hyland, 1990; Jalil & Sukor, 2008; Wei Zhu, 2001), and applying imprecise discourse markers to begin new paragraphs (Wei Zhu, 2001). Moreover, the challenges also include their inability to connect evidence with arguments and assumptions in an argumentative essay writing (Cho & Jonassen, 2002; Brudvik, Hong, & Chee, 2006; Moore & MacArthur, 2011), draw conclusions on the issues being debated (Wei Zhu, 2001) or diversify correct diction and use grammatical sentences in argumentative writing to support the argument (Wei Zhu, 2001; Abdul Jalil et al., 2008; Yusfaiza & Mohd Isha, 2012). There was also no adherence to the format and guidelines with irregular essay structure by the students, which eventually required the guidance of teachers to fulfil the question requirements (A. Rahman, Jamaludin & Zamri (2015). Sahlan, Shalinawati dan Saemah (2013) found that in regards to the essay title, there were students who only wrote one or two statements without elaborations on current issues, and wrote an introductory paragraph with irrelevant content (Sahlan, Shalinawati, & Saemah, 2013).

1.3 The KWHL Model

The Ministry of Education (MOE) is cognizant of the fact that in Malaysia's educational system, thinking skills are used to aid students in their LaF activities which involve conceptualising, decision making and problem-solving. Sensing the need, the Curriculum Development Division (CDD) of MOE devised a model in 2002 which was used to teach thinking skills in schools. The thinking skills model that was developed by the CDD was an adaptation of four existing thinking models (Rajendran, 2001; Siti Zabidah, 2006) which comprise the KWHL model (Barell, 2002/2003), the Boston model (Swartz & Parks, 1993), the CoRT model (de Bono, 1997) and the Programmed Instruction in the Learning Thinking Skills or PILTS model (John Arul Philips & Fatimah, 1992). In this paper, the researchers will only be discussing the assimilation of the KWHL model.

The KWHL model was developed by John Barell (2002/2003) to promote the thinking skills of students who are engaged in information-seeking activities without attempting to classify the said thinking skills into specific categories. The model includes graphic chart management known as Advance Organizer which functions as a link between students' existing knowledge and new knowledge that will be taught (Maria & Nurulhuda, 2013). The KWHL model comprises Knowledge (K – list of what students Know) that refers to students' existing knowledge and the use of critical thinking to identify what is already known; What (W - List of what students Want to know or are Wondering) that is perceived to be acquired knowledge that requires critical and creative thinking; How (H- List of How to go about getting what students are supposed to achieve) which encompasses methods of securing relevant knowledge and involves creative thinking; and Learnt (L- List of what students Learnt) which is learned knowledge and which involves critical and creative thinking. Figure 2.10 demonstrates how the KWHL chart is created for the use of students during LaF in the classroom:

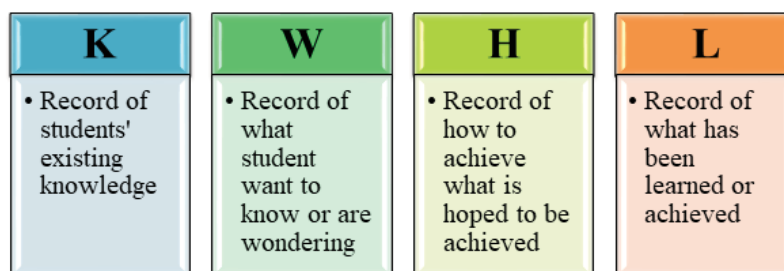


Figure 1. The KWHL Model Flow Chart (Adaptation from Maria & Nurulhuda, 2013)

1.4 Research Purpose and Research Questions

This research set out to examine the assimilation of HOTS into the LaF of argumentative essay writing as carried out by Malay language teachers in secondary schools. The research question is as follows:

- i. How is the assimilation of HOTS into the LaF of argumentative essay writing implemented by the Malay Language teachers in secondary schools?

2. Research Method

A qualitative case study research was carried out in this study to enable researchers to elaborate on the experience, behaviour, emotion, sentiment, and interaction between research participants on the issues discussed, as recommended by Siti Hawa & Santhiram (2001); Noriah, Siti Fatimah, Mohd Izham & Siti Rahayah (2010). Gerring (2007) concludes that among the specific features of qualitative case studies are (i) studies involving a small number of samples; (ii) a thorough and in-depth study to describe a case or phenomenon studied; (iii) the data collected are obtained in a real or natural context; (iv) requires a triangulation process; (v) uses evidence from specific processes (participatory observations, field studies, clinical trials, historical studies, and others.); (vi) the dissemination of a topic that is difficult to distinguish between the case studied and the actual context of the study; (vii) studies involving a single observation and (viii) studies involving a single phenomenon, example or evidence.

In Malay language education, two main steps to be implemented in the process of Malay language teaching and learning naturalisation process (PdP) include (i) the practice on the mastery of accurate sentence structure in accordance with the context of language use; and (ii) the involvement of students in language use activities (communication activities) planned by the teacher to enable students to use the selected structure in the context of language use (Marzni & Marni, 2021). Qualitative research design is of choice among researchers in the field of Malay language because of its qualitative case study ability to make detailed descriptions of the PdP naturalisation process. In light of this, the researchers attempted to understand the adjustment through a detailed inquiry into the Malay Language teachers' experiences, rather than proving or refuting any predetermined hypotheses. Hence, a qualitative approach is deemed to be more appropriate for this study (Ahrari et al., 2019), as the approach offers direct access to the subjective experiences of the Malay Language teachers' adaptation.

2.1 Participant (Subject) Characteristics

This study involved the participation of two Form Four Malay language teachers who acted as data providers. The teachers, Mr Fahmi (not his real name) and Mr Rahimi (not his real name) volunteered to participate in this study. The researcher used the purposive sampling method because the research participants were considered to be experts who possessed significant information in relation to the issues studied (Mason, 2002; Maxwell, 2008; Merriam, 1988 & 2009). The criteria for participants' inclusion in the study include: (a) participants' voluntary participation without coercion; (b) participants hold a degree in the Malay Language Education (c) participants are teachers who teach Form Four Malay Language subjects; (d) participants possess more than five years of teaching experience; and (e) participants' willingness to share personal experiences with the researcher.

Table 1. Participants Profile

Participants Profile		Duration of Observing Process and In depth Interviews
Mr Fahmi (not his real name)	Mr Rahimi (not his real name)	
36 years old	31 years old	LaF
Man	Man	(Observation/ Recording)
Malay	Malay	80 minutes x 7 sessions = 560 minutes
Banting, Selangor, Malaysia	Taiping, Perak, Malaysia	
Degree of Malay Language Education UPSI (1999-2003)	Bachelor of Education: Teaching Malay as a First Language	
13 years of teaching experience	UPM (2005-2009)	In-depth Interviews
Boarding School 1(2003-2014)	8 years of teaching experience	60 minutes x 7 sessions = 420 minutes
Boarding School 2 (2014-2021)	Boarding School 1 (2009-2014)	
Excellence Service Award (2013)	Boarding School 2 (2014-2021)	
The 11 th Malaysian Best Boarding School Subject Teacher Award (2013)	First Batch of i-Think Instructor	

2.3 Data Collection Process and Data Analysis

The data collection process employed two key techniques; in-depth interviewing, and classroom observation. All data were analysed using the thematic analysis technique to build on criteria and relevant themes to answer the research question. Data collected were through the in-depth interviewing technique, 14 times (seven times for each participant); classroom observation for LaF, 13 times (six times for each participant, and concurrent observation for the last session); and document analysis of argumentative essays, textbooks, workbooks,

circulars, teachers' daily teaching plans (TDTP), debate texts and presentation or group work materials.

3. Results

The assimilation of the KWHL model for the LaF of HOTS argumentative essay writing could be seen through: -

3.1 The Pair-think-share Activity

Assimilation of the KWHL model in this study could be seen through the efforts of Mr Fahmi and Mr Rahimi, who carried out the pair-think-share activity. The pair-think-share activity involved idea-sharing within a stipulated period between two students on a topic chosen by the teacher, the results of which are required to be shared with the rest of the class. A description of the said activity can be found in the passage below:

Mr Fahmi: Pair-think-share is about share, share, share, share which means that we are required to share our materials with the classmate beside us, we tell stories, about what he knows; what he wishes to know and what the friend beside him, who heard stories from the friend beside him, learnt ooo so when we talked about neighbourliness earlier, we meant that knowing someone isn't enough and that we have to visit their homes, that's how it is (IV6/line 236-242)

Mr Rahimi: So it's like errr pair and think, there are two students and then they errr share ideas with each other, the friend sees, he then checks and ticks ok (IV12/line 59-61)

Mr Fahmi also considers pair-think-share activities as one of the features of student-centred learning. This is because students will discuss and share ideas with their peers. The following excerpts illustrate this feature:

Mr Fahmi: The main feature is based on student-centeredness, so it is written that the students discuss, share what they know with their peers, what they want to know, what they learn, and all these show student-centeredness (IV6 /lines 142-146).

In addition, Mr Fahmi and Mr Rahimi are also confident that the pair-think-share activity can be used well to apply HOTS in LaF of argumentative essay writing because students can do this activity well. The following are the views of both study participants:

Mr Fahmi: The student shares as he gets ideas through the sharing of ideas with the peer next to him (IV6/line 244).

Mr Rahimi: Before conducting the activity, I was studying the LaF approach with little understanding. However, for today, I tried to see if it is suitable for students when they use pair-think-share. I can see that it can be used based on today's lesson. (IV12/lines 252-256).

Furthermore, Mr Fahmi and Mr Rahimi also expressed their views on the selection of student pairs to ensure the effectiveness of the implementation of pair-think-share activities. According to Mr Fahmi, students are given the freedom to choose their partner to share ideas or tell stories about the topics discussed. According to Mr Fahmi, he stresses the importance of comfort and compatibility of students to share ideas. The following are his views:

As for me, I don't emphasize who the pair is. Rather, it is the willingness of the student whether to share or not during the sharing process (IV116/ line 255-257).

*Mr Fahmi: For me, it is about compatibility with the partner (IV16/ lines 259-260).
Yes. The comfort of the students is more emphasized compared to the others (IV16/ lines 275-276).*

3.2 Usage of Self-Assessment Whiteboard

Mr Fahmi, on his initiative, prepared a self-assessment whiteboard to be given to all students during the assimilation of HOTS in the LaF of argumentative essay writing. According to Mr Fahmi, the use of a self-assessment whiteboard is an innovative example of the type of individual whiteboard used (IV6/line 84-85). The self-assessment whiteboard initiative was divided into three key sections that comprise Know, What to know and Learned. The following passage depicts the sections that are found on the self-assessment whiteboard:

The meaning is as it is in English, Know, Know, What do they know and then Want, but I do not want to use want because want may be seen as what they want (IV6/ line 127-130).

So I write there, adapted to wishes to know, I do wish to change want, so I made it as wishes to know, WTK, K, and Learned, so it becomes easier for learning the writing process (IV6/line 132-134).

The justification provided by Mr Fahmi for using the self-assessment whiteboard as an instrument is that it can be used to replace computers and mobile phones as a teaching medium and because he found it to be a tool that

could sustain the attention of students into the LaF activities he had carried out. This can be observed in the following passage:

Mr Fahmi: Replace computers, perhaps with...with what errr group whiteboard, this is what we could do as suggested by these friends to replace computers. It's more like replacing tools, for schools that do not have computers, one can pick a whiteboard to show or teach the 21st Century Learning method (IV6/line 164-168).

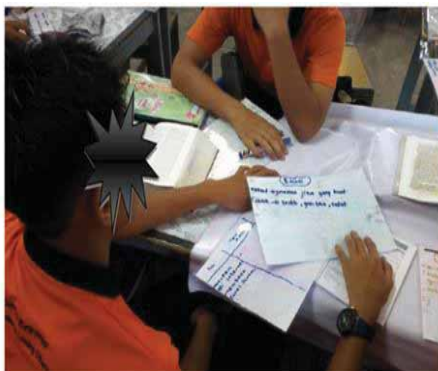


Figure 2. Example the Usage of Self-Assessment Whiteboard (3rd Observation)

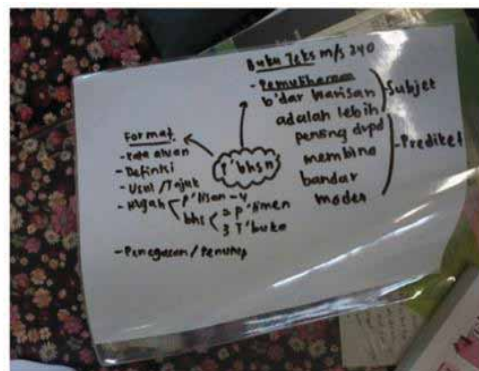


Figure 3. Example the Usage of Self-Assessment Whiteboard (10th Observation)

4. Discussion

The CDD Thinking Skills model (2002) focuses on four main domains which are critical thinking skills (relevance of ideas), creative thinking skills (absorption and generation of new ideas), thinking strategies (thinking process) and reasoning skills (logical and rational consideration) (Zaini, Juriah, & Zarin, 2013; Wan Shahrazad & Rozainee, 2006). Upon scrutiny of the study's findings that were examined using the assimilation of the KWHL model, it can be deduced that on the whole, the assimilation of the model can impact knowledge users (students) and educational practitioners (teachers) into gaining proficiency in argumentative essay writing. This is because all three domains of the CDD Thinking Skills Model are implemented using (i) teachers' understanding of the LaF of argumentative essay writing skills; (ii) teaching methods for the LaF of argumentative essay writing; and (iii) thinking tools that are used for the assimilation of HOTS for the LaF of argumentative essay writing. The assimilation of the KWHL model, which is carried out through LaF activities of argumentative essay writing such as pair-think-share and the use of self-assessment whiteboard, is extremely crucial for students to ensure that they can gain mastery of the structures of essay writing.

The assimilation of the KWHL model into the LaF of HOTS argumentative essay writing carried out in this study is believed to have been made possible by the awareness possessed by the two research participants of the current boom in information and communication technology (ICT) that strongly influences LaF conducted in classrooms. The ICT boom has provided students with wide access to publicly available information which effectively prepares them for the future. The findings of this research are in tandem with findings by Abu Bakar (2013) and Maimunah & Hashimah (2017) which state that teachers must include elements of HOTS that could encourage students to think at a higher level to cohere with the knowledge that they receive. As for students' gaining of mastery of essay writing structures and developing of abilities to produce HOTS-accordant essays, it was noted that they must first be trained to approach writing with mature thinking strategies to effectuate power of imagination of the highest level, and optimise their cognitive abilities to generate sound ideas (Sulaiman & Ahmad Khair, 2007; Suria & Juriah, 2010; Zarina, 2016).

For the finding that was about the future of the students, it was discovered that the awareness possessed by both research participants of the important role played by HOTS in designing the future of the students, is similar to the recommendation made by Nur Hidayah (2015). Both the research participants applied HOTS into the LaF of argumentative essay writing as a preliminary step towards preparing students for the assimilation of HOTS towards fulfilling their academic and everyday demands. The assimilation of the KWHL model into the LaF of the HOTS argumentative essay writing is also implemented by teachers across curriculums, knowledge disciplines and local and global educational system changes. The research finding that showed that the assimilation of HOTS into LaF is crucial for teachers in their efforts to cultivate HOTS, is similar to the view of

Kamsiah (2002), Aminah (2003), Maimunah (2004) and Abdul Halim (2016). This notion can be seen in the assimilation of HOTS into LaF that was carried out by both the research participants, which suggests that they were consciously cultivating HOTS to respond to MOH's call, as clearly delineated in the MEB (2013-2025). Teachers must make conscious efforts to cultivate HOTS-centred thinking into LaF that they carry out to ensure the smooth delivery of multidisciplinary knowledge. Through the assimilation of HOTS, students are continuously encouraged to think fast, and approach issues or topics discussed during the LaF of writing skills from various perspectives. HOTS is also a thinking process that crosses the boundary of curriculums and knowledge disciplines. This particular research finding is in tandem with the concept introduced by MOF (2013) and Abdul Halim (2016). This also further suggests that both the research participants were aware that the assimilation of HOTS into LaF has dominated all branches of knowledge. The demand for change in the global educational system has also affected a ripple effect on the local educational system. Thus, in the context of the argumentative essay writing process, HOTS is a very relevant concept that must be positioned as the essence of LaF in classrooms.

Teachers are further encouraged to begin executing foundational stabilisation processes in essay writing for students from the lower secondary levels to ensure that the latter develop a thorough understanding of outline creation and content development for essays from the early stages of their secondary school education (Maharam, 2000; Musa, 2002; Roselan, 2003a & 2003b). The stabilisation process includes discussions in classrooms; diversity in teaching techniques such as exposure to stylistic essay writing techniques that could enhance the readability factor; use of the ICT medium to sustain the interest of the students in LaF; and use of varied teaching aids (Nur Hidayah 2015). Additionally, the sharing of expertise by teachers who have received Excellence awards and School Improvement Specialist Coaches (SISC+) with Malay language teachers have also opened up possibilities of effective and systematically planned LaF processes to ensure that students master essay writing techniques correctly (Rozita & Abdul Rasid, 2012).

Teachers must be shrewd in identifying students with poor proficiency in writing skills (Mahzan, 2007 & 2008; Abdul Rasid, 2011). Identification of students' potentials to achieve excellence will guide teachers to effectively execute their coaching processes. Subsequent coaching sessions could include the different types of formatted and unformatted essays; scrutiny of students' essays against marking schemes, and from a grammatical point of view; emphasis on the correction of students' writing errors, which must be carried out as an effort to recognise strengths and weaknesses of students in essay writing; and attempts to assist students to gain general proficiency in various fields of writing (Che Zanariah & Fadzilah, 2011). If Malay language teachers are willing to make conscious efforts to effectively shoulder such responsibilities, efforts to conduct LaF of Malay language based on HOTS will most certainly be continuous. The CDD Thinking Skills model (2002) focuses on four main domains which are critical thinking skills (relevance of ideas), creative thinking skills (absorption and generation of new ideas), thinking strategies (thinking process) and reasoning skills (logical and rational consideration) (Zaini, Juriah, & Zarin, 2013; Wan Shahrazad & Rozainee, 2006).

5. Conclusion

The assimilation of HOTS into the LaF of argumentative essay writing is a challenge that needs to be handled effectively and synergised with pedagogical knowledge and teachers' content knowledge. It has also become increasingly important for teachers to act smartly to synergise the best methodologies, approaches, strategies and teaching techniques to match students' receptiveness, and current demands made in the field of education. Such awareness among teachers is crucial to ensure that knowledge culture in classrooms is given due importance without setting aside the key aspects that must be learnt and mastered by students. The assimilation of HOTS into the LaF of argumentative essay writing does bring in a positive impact for people from all walks of life including students, teachers, administrators, the ministry and the general public. On the whole, Malay teachers can and should take class discourses to a higher level by assimilating HOTS into the LaF of all language components (Noor Rohana, 2007a). Teachers should also provide learning situations that are more conducive and challenging to ensure that the learning of the Malay language is not perceived as boring, and students can master language skills at a competent level (Yahya, 2014). Malay language education is believed to play a huge impact in its role as the proponent of the society's culture of thinking seeing that the Malay language is the nation's official language.

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Values Related to Moral Behavioral Practice in Malay Students Context

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Abstract

Malaysia is a country that strives to instill noble or good morals and values among the young generation who will lead the country's development. The importance of values has been clearly stated under the principle of 'decency and morality, the fifth principle in Malaysian National Principles. Adhering to this principle requires constant effort and has its challenges. This study discusses the practices of moral behavior in the daily lives of Malay students. This study uses the case study design (one case, one place) and a qualitative approach to understand this phenomenon. Purposive sampling techniques and specific criteria were used in selecting the participants of this study. The ATLAS.ti 7 software was used to manage the data obtained through observation, interviews, and document analysis. The thematic analysis technique was then utilized to analyze data obtained in this study. These findings show that personal noble values and institutional values are the core of moral behavioral values. Malay students understand the practice of moral behavioral values as a combination of personal values and the institutional values that work in balance to be manifested and practiced consistently in their daily lives. In conclusion, together, the Ministry of Education, schools, family institutions and the community play an important role in inculcating values related to the practice of moral behavior among students. It is suggested that future studies conduct a comparison of values related to moral behavior among various ethnicities as well as categories of students (disciplined and undisciplined groups).

Keywords: values, personal noble values, institutional values, moral behavior, students, Malay

1. Introduction

Values form the basis of an individual's moral conduct in their daily lives. Values are defined as a tendency to choose or agree with one condition over another; rational or irrational, whether something is good or bad, beautiful or ugly, normal or abnormal. All of these are central to the individual and community mental program (Hofstede, 1988). Meanwhile, moral values should be based on core values, specifically compassion and justice (Abdul Rahman, 1987). Maizura (2015) also defined moral behavioral conduct as the practice of pure conception of (enjoining the good and forbidding the evil), with principles and situations by emphasizing personal and institutional values to ensure the well-being of one's self, the society, and the nation.

The Malaysian government is committed to producing an ethical generation with high moral values. For this reason, instilling morality and values has become a national agenda, as emphasized in the country's constitution, the National Principles (Rukun Negara), and policies such as Vision 2020, National Education Philosophy, and the Malaysian Education Blueprint 2013-2025 (MEB, 2012). The aim is to ensure that all Malaysians can appreciate the values and practice the moral behavioral conduct of their daily lives to guarantee the country's continued sovereignty and face the challenges of ethics and morality. In addition, it aims to ensure the well-being of Malaysians of various races and cultures. Therefore, the new generation should exhibit exemplary moral behavioral practices and behaviors in line with society's values and socio-cultural norms and the rule and laws in Malaysia.

The process of instilling value starts from childhood to adulthood. Morals and values are always instilled into various aspects of life formally and informally, whether at home, school, or in the community. Kotaiah (2014) states that home is the first place while school and teachers are the second place to influence children's moral development. Parents can influence the moral development of their children through various means, among them through instilling religious beliefs in children (Tan & Maizura, 2020). Previous studies have proven that parental

moral values applied to children can help the moral development of their children (Melati et al., 2010). In addition, parents can also involve children in their family affairs, be role models in inculcating religious beliefs, communicate regularly and effectively such as practicing moral narratives with children and provide quality bonding time for children.

Under the formal Malaysian education system, after spending six to seven hours a day in school, Malaysian students spend a lot of time with family and socializing with other members of the community, especially the local community (MEB, 2012). Therefore, values instilled by the family institution, community, and school have influenced the development of moral behavior of Malay students (Maizura, 2015). In this regard, values possessed by an individual will determine the thoughts, feelings, and actions they would take in their daily life. In addition, according to Arthur, Wilson, Godfrey, Gray, Newton (2009), values are elements that are closely related to individual characteristics, while Adreas (2007) asserted that action is influenced by the understanding of values.

If parents spend less time with their children because they are busy pursuing careers, as a result, morality among such adolescents will decline (Dalmacito, 2013). The expectation on the parents and teachers is getting higher especially when the students are exposed to a variety of resources, social media and gadgets in this digital era (Gui, Maizura, Nur Surayyah, & Norzihani, 2020). According to Morgan (2016), students spend too much time online and this will affect their moral development. This scenario raises concerns and influences various values related to behaviors that to some extent will undergo changes in both positive and negative directions. This will depend on the extent of understanding and appreciation of the values that have been taught at home as well as in school.

Morality is principles that concern the difference between right and wrong action or good and bad behavior. Morality is important and needed to be taught in school to produce students who are balanced and harmonious in intellectual, spiritual, emotional and physical aspects based on the National Philosophy of Education (Gui, Maizura, Nur Surayyah & Norzihani, 2020). Students in high school are teenagers who seek self-identity by being supported by holding a variety of values. At this point they are easily confused and cling to values that do not support the practice of good moral behavior in their lives. The disciplinary problem among the students is one of the big challenges for the education system in our country nowadays. The problem becomes serious when the students lost their moral compass to discern what is right and wrong for their actions in their lives and also in their future career. Moral behavior is a manifestation of moral values and noble morals that exist in the individual that allows them to practice it in daily life (Maizura, 2015).

The concept of 'person_with noble characteristic' is a goal to be achieved in two subjects based on social studies such as the Islamic Education and Moral Education subjects (Noorzulina & Maizura, 2021). Islamic Education and informal Moral Education are implemented in every school and the teachers have taught and instilled moral values to the students. However, the issue of school discipline is still a major topic (Kok, 2018) involving Malay, Chinese and Indian students in Malaysia. Once the discipline issue arises, the roles of parents and teachers in developing the morality of students will be questioned-by_the society. Formally, the responsibilities of teachers are not only teaching students, but also helping students to develop in every aspect including morality (Gui, Maizura, Nur Surayyah Madhubala, & Norzihani, 2020). However, the parents also have a big responsibility to educate and inculcate values related to moral behavior to make sure the younger generations to be a noble character (Noorzulina & Maizura, 2021). Parents, teachers and members in society should set noble values in each aspect to be a role model for students and teenagers. This act_will enhance the virtuous and moral values through various activities in daily life, as well as through the mass media.

The Malay community has its own set of values highly influenced by the Islamic religion and culture. These include values, such as trust, justice, honesty, cleanliness, modesty, kindness, and love for humans and animals, and plants. Inculcation of the culture and customs, politeness, respect, and mutual aid has long been entrenched in the Malay community (Noraiti, 2005). At the same time, the school institution plays an important role in instilling moral values through formal and informal education to all students regardless of their race and religion. Muslim students are required to learn Islamic Education from primary school until high school, while non-Muslim students in Malaysia are required to study Moral Education. Furthermore, all students in Malaysia must take the Civic and Citizenship subject. This Civic and Citizenship subject aims to provide an overview of the education institution and the personal characteristics that must be present in the mind of every student. Values are also instilled informally through the schooling system in other subjects, such as cross-curricular elements and co-curricular activities. There are 18 values that need to be instilled among students throughout their schooling years, namely belief in God, responsibility, self-reliance, self-appreciation, hard work, gratitude, patriotism, freedom, courage, honesty, rationality, being kind, concern for others, respect, compassion,

cooperation, humility and tolerance (MOE, 2016). Through the emphasis and application of these values in the school system can cultivate good character, which translates into good daily behaviors and practices.

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1.1 Research Objective

The objective of this study is to explore values related to moral behavior practices among Malay students in context of their daily lives. Among the specific objectives of this study is:

- i. To explore values related to moral behavior practices among Malay students in context of their daily lives

1.2 Research Question

- i. What are values related to moral behavior practiced by Malay students in their daily lives?

2. Theoretical Basis of the Study

The theory of Virtues Ethics (Aristotle, 1979) and the theory of social morality (Durkheim, 1961) are the theoretical basis in this study to provide understanding in exploring the values related to moral behavior in the daily lives of Malay students. The theory of Virtues Ethics can provide an idea of how values related to the practice of moral behavior can be explored in depth in this study (Abdul Rahman, 1999). The first theory that supports this study is the ethical theory of noble personality is one of the earliest theories in the writings of Aristotle in 384-322 S.M. which asserts about the personality, temperament and characteristics of noble character. Essentially this theory supports virtues that have the concepts of justice, generosity, courage, honesty, patience and wisdom that play an important and significant role in the moral life of individuals and society.

Moreover, this theory of Virtues Ethics by Aristotle is defined as a tendency for a purpose and does not involve human feelings, abilities or powers of feeling (Aristotle, 1979). This is because man cannot be praised or reviled and is said to be good or evil just because of his feelings or because he is able to feel them. The tendency to achieve a goal will make a person a perfect human being. Aristotle also stated that to have a theory of Virtues Ethics can be achieved through training, practicing the personality until it becomes a habit by creating pleasure and the action makes the act pleasing to the individual.

In addition, one of the traits of a theory of Virtues Ethics (Aristotle, 1979) by adopting the middle path is something that is neither excessive nor too little. In this theory it considers excessive and too little actions to be evil, bad and reprehensible actions. This theory requires a person to act in the right way, behave at a moderate pace and be in the middle ground in all actions. This doctrine of the middle way cannot be applied to evil actions regardless of excess or deficiency because it is still considered a wrong action.

The second basic theory of this study is the Social Morality Theory (Durkheim, 1961). This theory states that moral individuals are those who abide by the rules set by the authorities and emphasize discipline in the context of societal life (Swartz, 2010; Zajda, 2009). Moral values are different and shaped relative between one society and another. This is because the holding of the concept of value does not depend on the authorities and the society in which they live. This theory makes human rules covering society as a guide based on criteria in determining moral actions (Durkheim, 1961, 1973; Schwartz, 1992). Social morality also refers to institutional values that include school institutions, institutions of community norms and religious institutions adhered to by the community.

3. Research Method

3.1 Research Design

This study utilized qualitative design, specifically the case study approach. The study was conducted on a one case, one location basis and involved eight participants. The study's participants were 16-year-old Malay students who attended a secondary school in the Federal Territory of Putrajaya, Malaysia. The researcher played the role of the main instrument in this study, and data were collected through face-to-face structured interviews,

observation, and document analysis. The data obtained were analyzed using ATLAS.ti 7 software, and the thematic analysis was carried out manually by the researcher.

3.2 Research Participant Selection

Eight Malay students were selected through purposive sampling based on predetermined criteria. The participants selected should be ready and willing to share their experiences and opinions about the moral behavior they practice in their daily lives. The participants were asked to provide honest and open feedback during the interview. The observation process and document analysis were systematically conducted with the consent of the parties involved. The selected participants were also asked for their consent to participate in the study. Moreover, consent was also obtained from parents and the school. The students and parents involved were notified of the study's purpose, procedure, and ethics before commencing the data collection. There are three predetermined criteria that need to be met before a Malay student is selected as the subject of the study, namely:

- i. Malay students who are in form four.
- ii. Participate voluntarily and obtain permission from parents and the school after the researcher states the purpose, procedure and ethics of the study.
- iii. Willingness of study subjects to share experiences and practices of moral behavior in daily life honestly and openly in the form of interviews, observations and document analysis.

3.3 Research Location

The study was conducted in a national secondary school in Putrajaya. The school was selected based on the nature and purpose of the study, ease of access, entry and permission, opportunities, and school size (Jorgenson, 1989; Spradley, 1980). Furthermore, the school was selected in light of the school's and students' willingness, permission, readiness to cooperate and participate in the study. Yin (2009) stated that data collection should be conducted at locations that are easy to enter and non-complex after permission to enter is granted. Li (2008) also emphasized that a positive attitude and mutual respect are important in getting continuous consent to conduct observations and interviews. In this case, the school's acceptance of the researcher's presence and the study's participants' cooperation during data collection was very good from the beginning of the study. Therefore, to ensure a positive attitude and continuous acceptance, the researcher tried to build a good rapport with the school's administrators.

3.4 Research Limitation

The study involved eight Malay secondary schools' students studying in a school in the Federal Territory of Putrajaya. All of these students are studying in a government-funded national secondary school. In this regard, all of the school's operating expenses are funded by the Government of Malaysia through the Ministry of Education Malaysia. Limitations in this study are involving Malay Muslim students who are in Form Four. In addition, all these students do not have disciplinary problems in school and are categorized as students who practice moral behavior in the school area and outside the school area. The limitations of this study also depend on the honesty of the study participants during the interview session, the behavior during the observation without participating in the school area and the writing of self-reflection of values related to the practice of moral behavior practiced in their daily lives. In addition, this study also took a long time to form a good report with the study participants to reduce the gap and raise the trust of the study participants towards the researcher. It should be noted that moral behavior practices and values examined were only limited to what was described verbally by the students, through the behaviors observed, and journal entries or self-reflection in relation to moral behavior they practice in their daily lives. The limitations of this study also depend on the extent to which the oral, written, and observed information are honest and true.

3.5 Data Validity and Reliability

A variety of strategies were used to ensure that the findings of this study are valid and reliable, which are prioritizing ethical issues in research, protecting the confidentiality of research participants' identities and locations, obtaining the consent of all parties involved in this study, and explaining the purpose and procedure of the study to the participants.

Table 1. Strategies in Determining Validity and Reliability

Type	Strategy	Research Level
Construct Validity	<p>According to Cohen et al., (2007), the purpose of triangulation used is to obtain a more holistic view of a complex phenomenon. Triangulation is also used to reduce systematic bias in data (Patton, 2001). Therefore, this study applies two types of triangulation in this study, namely various theories and various sources. This is to increase the validity and reliability of the data obtained. In this study, the researcher uses various theories, namely the theory of social morality (Durkheim) and the theory of noble personality (Aristotle). In addition, the researcher uses a variety of techniques such as interviews, non-participation observation.</p> <p>Peer Evaluation (Nabilah, Rohaya, Ghaziah, Shireena Norshidah, 2010). A total of three colleagues with expertise in Moral Education and qualitative studies have been the overall evaluators of the research conducted.</p>	<p>Research design</p> <p>Data collection</p>
Internal Validity	<p>Participant Review (Seale, 2002): Review of information with study participants after completion of transcribing interview sessions that were conducted in order to ascertain the meaning expressed by the research participants during the interview.</p> <p>Making observation: the observation is to ensure alignment between the information obtained during the interview and the behavior practiced.</p> <p>Ongoing Relationships between Researchers and Participants of study (Prolonged Engagement) (Glense, 2006 2011): To ensure study participants are comfortable with the presence of the researcher and are able to share the practice of moral behavior with greater security. Able to build rapport with research participants.</p> <p>The reviewer as a study instrument: The reviewer is the main instrument of this study. The reviewer collects data as a whole and does not involve others in the process of collecting data and interpreting the data obtained.</p>	<p>Data collection</p> <p>Report writing</p>
Reliability	<p>Focus on ethical issues and confidentiality in research. Develops complete data for each participant.</p> <p>Expert Assessment (Crewswell, 2008): Three experts in related fields using Cohen Kappa. The Cohen Kappa (K)</p> <p>Index value found in this study is 0.87, and this value is an excellent reliability value based on the Cohen reading schedule reserved by Stember (2001), i.e., 1.00-0.80, which is a very good agreement.</p> <p>Audit Tracks (Cutcliffe MvKenna, 2004): Providing an audit network involving the process of researching the journey from start to finish</p>	<p>Research design</p> <p>Data collection</p> <p>Report writing</p>

3.6 Data Collection Procedure

The data in this study were collected through semi-structured face-to-face interviews with research participants, document analysis, and observations. The interview protocol was used by the researcher to obtain data related to the value of students' moral behavior. Observation protocols such as checklist forms and document analysis protocols have been used by researchers in the process of obtaining data from various forms of sources. To look at data diversity and check for coherence, what was said during the interview session was compared with the behavior of the participants. In fact, through document analysis and observations, it has enriched the data from the aspects of values related to the moral behavioral practices of the participants.

The entire process of data collection took seven months to complete. Data collection procedures should be clear to facilitate researchers to conduct data collection in this study. According to Othman (2012), the data collection

procedure focuses on the boundaries of the study to ensure that the data obtained can answer the research questions that have been set. In this study, the data collection procedure began with the determination of the study site, selection of study participants, permission to conduct the study, preparation of interview questions, and the work of performing interview data collection, observation and document analysis. Permission was obtained from study participants and parties involved such as parents, schools, the Department of Education and the Planning and Research Division, Ministry of Education Malaysia. The researcher began data collection by interviewing study participants.

Researchers also use non-participatory observation techniques in the classroom as well as in school areas and document analysis to obtain rich and meaningful data. The researcher started an interview session with the study participants and was followed by an interview session before observation and document analysis were conducted. Each information obtained from interviews, observations and document analysis is managed one by one to avoid confusion to the researcher. The data were obtained through interviews, observations and document analysis through the process of rearranging the information to facilitate the analysis of data on the thinking of moral behavioral practices of the study participants. The data management process is done simultaneously with the data collection process in this study to avoid data piles and situations that do not allow data to be analyzed after the data collection process is completed.

This is because the process of data analysis requires continuous and thorough research. After the completion of each interview session, the researcher proceeded to transcribe the interview session. The same goes for document observation and analysis. The researcher makes a summary and conclusion for each observation made to make it easier for the researcher to understand the data. Data obtained from interviews, observations and document analysis are still in the form of words, sentences and narratives of study participants that illustrate their understanding of their moral behavioral practices. In a qualitative research design that uses a case study approach, the researcher encodes quotations, sentences, words and narratives from study participants so that the data is easily interpreted as well as guarantees the ethics of confidentiality in the study. Furthermore, the process of coding and categorizing is done by the researcher to identify the formation of themes related to values related to the moral behavioral practices of Malay students.

4. Findings and Discussion

4.1 Theme 1: Personal Noble Value Practices

Personal noble values could be defined as the pure values appreciated and inculcated by individuals and practiced in their daily lives. In particular, the Malay students in this study believe that personal noble values they need to possess and demonstrate in their daily lives include kindness, concern for others, honesty, self-reliance, hard work, responsibility, compassion, and respect.

The excerpt below demonstrates RP7's understanding and practice of moral values, particularly kindness, in his moral behavior practices.

"...I saw my friend not bringing money to school to buy food. I helped my friends to buy food. In fact, I often give presents to family, teachers, and friends on their birthdays" (F1-1/RP7).

Most of the participants explained that they practice honesty, as shown in the statement given by RP4 "... I am very honest with myself and others" (F1-1/ RP4).

Furthermore, all participants practice self-reliance in their daily lives; RP2 expressed the view that:

"...I am self-reliant by doing something with my own efforts, especially in completing school work. I went to school by myself instead without asking for help from my mother and father to take me to school" (F1-1/RP2).

Responsibility is also another personal value practiced by the students in their daily lives. As asserted by RP7:

"...I am responsible for the responsibilities given. For example, I am responsible for helping teachers maintain student discipline because I am a prefect. When my parents are not home, they gave me the responsibility to take care of the house for a while. By doing something with my responsibilities and not being selfish" (F1-2/RP7).

Hard work, compassion, and respect are also among the personal values practiced by the participants in their daily lives. The following excerpts show RP1 and RP5's views on personal values:

"... I am a diligent person, and I will do what I am assigned to do the best that I can. Furthermore, if I can do the task. I work hard to help my friends in terms of advising them to be better. I usually diligently complete the tasks assigned by my mom on time" (F1-1/RP1).

The following is an example of a statement regarding the compassion practiced by RP4:

“...I practice showing compassion to everyone, including plants and the environment. I do practice my love for children or elders. I really like hanging out with children. I really love and care about the health and well-being of my pet. If I see my pet is sick, I will try to help it getting cured. I am not the type to take revenge on others. It will make my practice messed up if I have vengeance on anyone. (F1-1/RP4).

Respect is another value that is present in all participants. RP8 shared his view over the respect as in the following excerpt:

“... I respect parents, teachers, friends, and older people. I respect parents by speaking politely and not raising my voice. I also respect neighbours by speaking politely and respecting their privacy. (F1-1/RP8).

Another personal value is concern for others. The following is an example of concern for others demonstrated by RP5.

“...I show high concern for others. I also try to be polite and show courtesy. In addition, I show humility when I am socializing with friends at school to avoid misunderstanding. If I make a mistake, I try to apologize to friends or others who feel offended” (F1-1/RP5).

The findings clearly showed that Malay students understand personal values they need to possess as part of the moral practices in their daily lives. These values include kindness, concern for others, honesty, self-reliance, hard work, responsibility, compassion, and respect.

The findings of this study are in line with the findings of previous studies on personal values held by Malay students, namely respect, honesty, kindness, concern for others, and compassion (Muhamad Khairi, 2013). From a theoretical perspective, this view is in line with Islamic moral philosophy, which affirms the good values that need to be possessed by good Muslims (Al-Ghazali, 1898) and bring virtue to most individuals (Bentham, 1789); the values that are beneficial for oneself (Nietzsche, 1887); and the value of the obligation (Kant, 1797). On the other hand, the study's findings illustrate that the students did not perceive justice as a personal value that they need to possess and needs to be considered in their daily moral behavior practices. Previous studies have also shown that the value of justice is less emphasized by youths who are still in school (Muhammad Khairi, 2013). In this light, without justice, one's values and daily moral conduct are still incomplete. This is because the value of justice is considered the main value in one's daily moral conduct.

4.2 Theme 2: Institutional Value Practices

The next theme is the practice of institutional values. Institutional values are defined as values emphasized in an institution, either in school, the community, or religion. The study's findings show that the institutional value is linked to a school's rules and regulations, the value of community norms, specifically community spirit and respect, and religious values such as gratitude, humility, and mutual aid emphasized in Islamic religious institutions.

4.2.1 Sub Theme 1: Values in School

In the context of Malay students in the study, they see the school's rules as the moral behavioral practice that must be their responsibility. It is one of the moral behavioral practices in their daily lives. For example, RP1 is a disciplined student at school, and she arrives at school before the school bell rings. She obeys all the school rules at most times, but she has violated some rules, for instance, by bringing a mobile phone to school to make it easier for her to call her mother to fetch her from school. She realizes that even though her intention of bringing the phone is good, it still violates school rules. Hence, RP1 turns off the phone while in the school area and only turns it on after school hours (F2-1/RP1).

RP6 practices institutional values by adhering to all school rules, respecting teachers, completing schoolwork given by teachers, and packing his belongings at home (F2-1/RP6). From the observation, RP6 was found to be a student who does not violate any school rules (F2-2/RP6) because RP6 has never brought his mobile phone to school despite having one, always adhering to the school's dress code as well as other rules set by school (F2-3/RP6).

In addition, the eight participants of this study have shown that they practice values related to moral behavior in aspects of learning in school. Among them, they have a hardworking attitude, dedicated in school, like to ask questions to teachers if they do not understand, like to help classmates by giving guidance in subjects especially mathematics, English, Engineering Drawing and other subjects. Participants of this study also showed a helpful attitude towards teachers during and after the learning sessions. Among the actions of the participants in this study was to help erase the writing on the blackboard and to help bring other students' items and exercise books to be checked by the teacher to the teacher's room.

Among the values related to moral behavior performed by these students is that they always maintain the cleanliness of the classroom without being instructed by the teacher and never take into account the work schedule to maintain cleanliness. All participants in this study are also proactive students in doing good to teachers and friends. Others willingly help in learning and outside of learning sessions. The kindness of the participants in this study was affected when they liked to bring food to school to share with other friends.

Apart from that, the participants of this study also demonstrated the value of moral behavior through co-curricular activities in school by being actively involved in various club and association programs. The value of their responsibility is evident by gaining the trust of other peers and teachers to hold positions in clubs and associations in the school.

The value of respect is also practiced in the daily lives of the participants of this study in their daily lives either in school or outside of school. The study participants respect their subject teachers and all teachers in the school, schoolmates and even all employees in the community e.g., security guards, gardeners, canteen ladies and even cleaning staff at the school.

Compliance with school regulations is considered important as a practice of moral behavior among the Malay youth involved in this study. According to Sakhilah (2009), if a student violates school rules, the student is considered a problematic student for committing immoral behavior. Thus, it is clear that the value of adherence to the participants in this study is adhering to the rules and practice moral conduct in their daily lives. This finding shows that the Malay students understand that adherence to the school institutional value is a moral behavior that they should practice.

4.2.2 Sub Theme 2: Community Norms Value

Observations of the participants of this study indicate that compliance with societal or community values is part of their understanding of moral behavior. In addition, the values that exist within the community are in line with societal norms, especially community spirit and mutual respect in their daily lives. However, most participants admitted that they are less likely to demonstrate good moral conduct at the community level, for instance, participating in community and volunteer activities. This is because they found it hard to get involved with community-based activities outside of school.

The first participant explained that some neighbours show community spirit in his neighbourhood, but some show no community spirit at all. RP1 and his family demonstrate good moral practices like exchanging food with their neighbours, particularly on special occasions like during Ramadan. While RP1 never participated in voluntary work, such as in old folk homes, he has joined a voluntary activity at an orphanage with his mother and friends. Among the activities at the orphanage are playing with the orphans and donating clothes to them (F3-1/RP1).

RP2, RP3, RP4, and RP8 stated that they were only involved in communal activities within their neighbourhood. Apart from that, they admitted that they had never been involved in any community-based voluntary activity outside of school (F3-1/RP2-RP8). RP5 stated that he always smiles when he meets his neighbours. Sometimes SK5 is also involved in events organized by the community of residence (F3-2/RP5). RP6 has also attended family day programs organized by community members and visiting neighbours and friends during the festive season (F3-2/RP6).

Apart from that, all study participants demonstrated the community norm values, including showing respect to community members inside and outside of the school by greeting them and smiling at them. The study participants also demonstrate good moral behavior as they respect their teachers by greeting them or shaking their hands. This action was observed among male participants who would shake hands with male teachers, while female participants would shake hands with female teachers after each lesson. The participants always thank the teacher after each lesson session.

It was observed that one of the participants, RP1 practices the values of respect for older peers not only at school but also outside of school. He also shows respect to his relatives by greeting and speaking politely with them. Similarly, RP2 practices these values since childhood. RP2 parents always emphasize the need to practice respecting school teachers and others in daily life. This is because RP2 parents believe that the value of respect is the key to the moral conduct that one must adopt. For RP2, she respects her relatives just as much as she respects her parents by caring for their feelings.

RP3 also practices the value of respect in everyday life no matter where he is. For RP3, respect should be shown for older people, peers. RP3 shows respect to others by listening to their opinions. He also observed always greeting the teachers in his school regardless of whether the teacher was teaching him or not (F3-4/RP3).

RP4 also practices community values and norms, such as respect in his school and at home. It was observed that RP4 shows high respect to all teachers. RP4 also showed respect towards his friends at school. RP4 shows his respect to all his classmates and students in other classes (F3-4/RP4). In short, all of the study participants practice good moral behavior based on community norms, specifically community spirit and respect regardless of the community they lived in.

The findings of this study are in line with the concept of morality, where behavior must consider one's personal and institutional values in their daily lives (Falikowski, 1990; Thiroux, 1977), as well as religious values. Furthermore, they align with the concept of morality based on society rules, which influence judgment, morality, or discipline in a society (Abdul Rahman, 1999; Abdul Rahman Chang, 1994). Similarly, values in society that align with societal values are also recognized by Durkheim (1961) as a system of societal rules and guidelines to determine whether a person's behavior is moral or otherwise. The findings of this study also correspond to the norms of the Malay community, which emphasizes the community spirit, mutual aid, and mutual respect between members (Noraiti, 2005).

Societal and cultural rules also determine one's moral conduct (Kohlberg, 1958). In addition, morality refers to all the rules of society and cultivating the pure nature and regulation of the society drafted based on the principles of autonomy, fairness, and altruism (Abdul Rahman, 1986). The institutional value of community spirit is seen to be in line with the findings of this study (Muhamad Khairi, 2013). In this regard, Malay students in this study understand that the value of mutual aid and mutual respect are part of the community institutional values that should be practiced in their daily lives.

4.2.3 Sub Theme 3: Religious Values

Malay teenagers in this study also saw those Islamic values, such as gratitude, modesty, and mutual aid, are closely associated with their moral behavior. This sub-theme is detailed with examples derived from the self-report prepared by RP1. RP1 stated that he always thanked the individuals who gave him something or assisted him, whether to the parents, teacher, siblings, and others (F4-1/RP1). As a sign of gratitude, RP1 always feels thankful for what he has now, even when he is an orphan and his family is living modestly and apart from that, RP1 empathized with the tribulation of others, especially when seeing poor people and those living in hardship (F4-2/RP1).

In addition, all research participants associate the practice of moderation and moral behavior with Islamic religious values. The self-reports showed that the participants recognize moderation as one of the moral behaviors they should practice daily. Subsequently, modesty is embedded in the daily life of RP3 as he grew up in hardship. Subsequently, this has made modesty a norm in RP3 life. RP3 saves money by bringing sandwiches and drinking water to school. He also likes to share his food with other friends (F4-1/RP3). According to his parents, RP3 is also a very modest person as he is willing to use his mother's 10-year-old mobile phone with no shame (F4-2/RP3).

In addition, RP3 does not ask his parents for unnecessary things except for buying educational books and exercise books (F4-3/RP3). Furthermore, RP3 is a very moderate person in terms of clothing and appearances as he is willing to wear old school clothes and shoes as they are still in good condition without buying new ones (F4-4/RP3). RP3 also practices modesty with his friends as he does not speak of things that are not beneficial (F5-5/RP3).

All of the study participants viewed moral behavioral conducts such as gratitude and modesty are linked to religious values. In the meantime, only RP8 and RP4 associated the value of mutual aid and freedom with Islamic values. Other study participants were not linking these values with religious values. Thus, it clearly shows that the study participants linked the practice of moral behavior such as gratitude, modesty, and kindness with Islamic values

This study shows some of the 17 values emphasized in schools, including gratitude, modesty, and mutual aid, are linked to Islamic values (Vishalache, 2012). These values are divided into values in the development of self, family, environment, patriotism, human rights, democracy, and peace and harmony (Curriculum Development Centre (2005) that encompasses the development of personal value and institutional value indirectly. This study also showed that the Malays prioritize Islamic values when dealing with everyday situations (Noraiti, 2005).

In brief, the study participants understand that moral behavioral practices are based on their personal and institutional values instilled in the school, their community, and religion. In this light, balanced practices of these values could ensure the students possess good moral behavior in line with their personal standards and standards set by the societal norms and Islamic law.

5. Conclusion, Implications and Suggestions

Students' understanding of the values and moral behavioral practices influences their actions and decisions in facing their daily moral dilemmas. In this regard, continuous efforts are highly needed from family institutions, schools, and the community to build proper understanding and accordance with the Malaysian social welfare in practicing moral behavior. In practicing moral behavior, students should not separate or divide the value of moral behavior practices as personal value and institutional value. Instead, they need to adopt institutional values as part of their personal values. This is because the segregation of such values will disallow the students from seeing institutional values as holistic values that complement their personal values.

The implications of this study are practical for parents in giving the sense that the process of application of noble personality values should be given serious attention in the family institution which encompasses noble values as a whole. This is very important to ensure that each child is able to make those values as their personal noble values, also making it as a habit to practice voluntarily on a consistent basis. Next, the implications of this study are for education in schools. It includes school administrators, teachers, counselors, staff in schools who set an example to students as an indirect learning process and have a tremendous impact on the moral development of the students. Counselors and teachers are encouraged to be more creative in planning activities that can instill institutional values and cultivate students' personal values towards ensuring that they become virtuous human beings in their daily lives and future careers.

Several suggestions can be put forward for family members, schools, and the community to help Malays students build a clear understanding of moral behavioral practices in their daily lives. First, the students need to have a clear and strong understanding of what values entail when teaching and instilling values such as integrity and fairness. For instance, the study found that Malay students did not prioritize justice as an important value even though justice and morality are particularly emphasized in Islam. Thus, the students need to understand the value of justice.

The second suggestion is that families, schools, and communities should impart the correct understanding of moral behavior in the students' daily lives, for instance, emphasizing the value of fairness to guide students while making decisions, especially when facing a moral dilemma that requires them to make decisions and act on the decisions in their daily lives. In this regard, the family institution has an instrumental role in shaping the value of moral behavior in their daily lives as students spend the most time with their families.

Further research in this field should ensure high moral behavioral practices in the students' daily lives. For example, future research may compare the value of the moral behavior practices between Malay students and students from other races. Moreover, researchers could conduct a thorough study on the roles of personal and institutional values in shaping moral behavior practices among students. It is hoped that the findings of this study will contribute to the development of knowledge and help improve students' moral behavior conduct in their daily lives.

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Students Perception of Moral Education Textbooks Design Components and Learnability

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Abstract

Textbooks are one of the most fundamental learning and teaching tools used in schools all around the world (Nicholls, 2003). Today's technology allows students to access a variety of textbook formats, including online textbooks that they may read from anywhere. This study looks into the style and arrangement of learning textbooks in Malaysia in order to make studying more convenient. The purpose of this research is to see if the dynamics of textbook layout affect students' desire to learn. Thirty Year 6 children from a primary school in the Selangor district of Hulu Langat participated in this study. Students' views of textbook design elements, such as paper quality, printing, colour, and pedagogical aspects, were determined using a quantitative survey. Print and colour were scored higher by the students than paper quality, artwork, and images, according to the data. Furthermore, the research discovered a link between the layout of a book and its actual use.

Keywords: moral education, textbooks, design, learnability, students

1. Introduction

Textbooks are an essential element of the educational environment since they serve so many functions. Textbooks are viewed as the essence of the curriculum by teachers, who teach their pupils the complete material of these volumes from cover to cover. For students, textbooks do more than just summarise the subject's material at their grade level. In this regard, textbooks are organised and illustrated, providing a structure and reinforcement to students' learning (Miller & Berry, 1962). Textbooks have become the curricular guideline and evaluative reference point for education authorities and school administrators.

A textbook's key components are the content, the organisational structure of ideas, and the concepts to be taught. On the other hand, the design of school textbooks is more than just a matter of aesthetics (Neill, 1982). Most textbooks also include important elements like glossaries, pertinent images, and instructors' comments, making them valuable educational aids for teachers. As a result, textbooks have become a type of unified instructional resource for all stakeholders. In contrast, unsuitable textbook design and features may be harmful to students' learning and engagement, rendering this resource useless (Harp & Mayer, 1997). In this sense, the need to make textbooks attractive has spawned an entire discipline called instructional design.

This is a major advancement since reading texts is mostly a visual task with psychological ramifications. To that aim, textbook design has evolved into a branch of science, with textbooks increasingly being created and produced using tried-and-true methods. However, there is still a difference in textbook design and usage between rich and underdeveloped countries. There are several causes for variations in textbook design and use between nations. In most educational systems, textbooks are the most common tool in educating learners. The majority of textbooks add visual images with the aim of helping students have a thorough understanding of topics and contents of lessons. These visual images such as pictures, photos and paints, etc. are adopted to transmit the information of different matters.

Visual grammar describes how language specialists utilise visual and verbal imagery to express meaning. Visual communication is related to framing, colour saturation, and semiotic modality. Textbooks are educational resources that deliver knowledge in a systematic and straightforward fashion. When two semiotic resources are utilised simultaneously, it is essential to understand how visual pictures interact with verbal texts in discourse meaning formation. Textbooks are required reading for non-native speakers of Persian at Iranian colleges and

institutions (Ahmadi et al., 2019).

Malaysia, a developing nation, confronts a number of challenges when it comes to textbook preparation. There is a consensus that textbooks are necessary tools in supporting students' learning and serve as a guideline for inexperienced teachers. However, taking the analogy of textbooks as a backbone of classroom instruction, it would not be wrong to say that the teaching and learning process is particularly wasted in the Malaysian school context. Textbook development and design are the responsibility of government authorities. Textbooks have become the sole learning resource in government schools. In many cases, the textbooks provided do not have supplementary resources such as teacher guides and reference books (Vellenga, 2004).

Furthermore, difficulties such as printing delays, paper procurement failures, and printing mistakes raise worries about the quality of textbooks used in public and private institutions. Nonetheless, under the affiliation of the government test board, end users are frequently harmed by these issues. Therefore, it is worth examining the link between textbook design and students' interest in learning at the primary level. Based on the discussion above, this study aims to identify students' perceptions on textbooks' layout and organization and whether textbooks ease learning. While recent technological advancements have enabled instructors to innovate and achieve new goals, published textbooks remain the most frequently utilised source materials for the majority of educational settings. In language education, the situation is similar, and several new commercial textbooks are released on a monthly basis to address changing instructional focuses and evolving linguistic requirements of learners. As a result of this circumstance, it is critical to determine which language textbooks are most appropriate for pupils in specific contexts. To put it another way, regardless of whether one recognises the worth of textbooks, they meet an acceptable standard or degree of quality and popularity among learners. (Ansary & Babaii, 2002).

1.1 Research Objective

The objective of this study is to examine students' views on the technical design aspects of textbooks, such as print and paper quality, illustrations, pictures, colours and presentations, and graphic materials used in the textbook and whether these elements lead to learnability in the moral education subject.

It is hoped that the findings will provide an overview of the use of textbooks towards the teaching and learning process of effective moral education and promote student learning.

Among the specific objectives of this study are:

- i. To determine the perception towards design components of the moral education textbook among Year 6 students in a primary school in Hulu Langat.
- ii. To determine the perception towards learnability of the moral education textbook among Year 6 students in a primary school in Hulu Langat.

1.2 Research Question

- i. What is the students' perception towards the design components in the Year 6 moral education textbook?
- ii. What is the students' perception towards the learnability of the Year 6 moral education textbook?

1.3 Literature Review

There are three textbook design principles that might potentially have a positive impact on discussions regarding textbook layout and usability. The first of the two textbook design theories is the generative theory Lavrenko, V. (2008). The notion states that how a reader understands the meaning of a text is affected by its design elements. According to this notion, learning is a building project in which every piece of knowledge is utilised to build cognitive links. Thus, visual attention to represented materials is a critical component in the learning process when it comes to constructing information from visuals in geography textbooks. Specifically, educational psychology research indicates that information acquisition is more successful when visuals and text are combined (multimedia effect) than when text or images are used alone (Mayer 2009, Eitel et al. 2013). The efficacy of this approach is improved if it is accompanied with visual aids on a page or if students can see the pictures mentioned in the text. It has been shown that images with captions or labels are crucial in research, and that students will more easily memorise and recall them than they will ordinary text and illustrations, even when the two are put extremely near together on the page.

Harp and Mayer (1997) examined the impact of images on the learnability of scientific texts, employing the same scientific content as in the prior study. They argued that some elements, such as images and language, are attractive. In this light, images and phrases are placed on the page to stimulate readers' interest. On the other hand, these subtleties serve to distract the student rather than assist in concept understanding and subsequent issue resolution. The research classified textual elements into two categories: emotional and cognitive

information. While attractive and amusing, it has been said that drawings are pedagogically ineffective since they serve just to increase the users' emotional interest. On the other hand, images with captions or reduced explanatory text are much more conducive to understanding and therefore have a cognitive appeal.

A second hypothesis focuses on the reader. The idea of a novel way to establish cognitive connections while reading is a generative theory extension. This concept assumes that a text's significance is hidden inside it. Instead, the reader deduces it from the text. Because the context of the book's creation and the reader's motives influence how the text is interpreted, both must be examined (Weinberg & Weisner, 2011). The idea proposes three types of readers: implicit, deliberate, and empirical. The writers used the term "code" to describe how readers might understand a work. Readers tend to interpret content based on its context, which is set by the language employed. Weinberg and Weisner (2011) state that a math student must grasp the textbook's code, symbols, and vocabulary. This code is designed to handle the particular conditions students experience as readers. Students who don't grasp the coding may not be able to use the book's layout or the book's format as intended. The study's subjects may not understand the suggested codes as well as professional readers.

Examples of textbook design and illustration philosophies include verbal learning, reinforcement, and organic reading. Smith (1960) embraced the functional or organic idea by establishing a set of scientific textbook design guidelines. The printing technique and materials utilised, the subject matter's demands, and verbal and nonverbal study behaviour and communication processes all impact the design and artwork of a textbook. Designers must use communication methods to produce impressionistic, abstract, and representational art that fulfils student demands for visual appeal, topic knowledge, content retention, creativity, and textbook organisation. This paper deliberates and examines Mayer, Steinhoff, Bower, and Mars (1995) and Harp and Mayer (1997).

Several studies have looked into how students view the relationship between textbook layout and their ability to study (Lan-drum & Clark, 2006; Landrum, Gurung, & Spann, 2012; Weiten, Guadagno, & Beck, 1996). A variety of research papers are focused on textbooks used in college-level psychology courses. This lack of study on textbook layout perceptions at both elementary and secondary levels has resulted. According to Weiten, Guadagno, and Beck (1996), textbooks may be made more expensive and more informative by their pedagogical aids. Thus, only they should be included if they improve student learning. By definition, textbooks seek to condense and interpret a discipline's knowledge and study. They try to give a sufficient breadth and depth of coverage of a topic so students may begin to comprehend what the discipline is about, as well as the techniques and scholarship that support it. Thus, textbooks represent what is known about a field, according to the audience's requirements, knowledge, and maturity.

Thus, textbooks serve as a standard resource, reference, and teaching tool, and it is unsurprising that teachers teach and students learn from these instructional materials (Woodward, 2012). According to Gurung (2003), pupils who felt that keyword introduction was beneficial were less likely to succeed. The findings indicate that students' views of their learning environment may not necessarily mirror their ability to retain information. Textbooks are critical components of the teaching and learning process since they are the primary means by which knowledge is conveyed to students. Additionally, one of the fundamental purposes of textbooks is to make existential information accessible and obvious to the student in a selective, easy-to-understand, and structured manner. The textbook plays a critical and beneficial role in teaching and learning. They assert that textbooks supply the required input for classroom learning via various exercises, readings, and explanations. As a result, they will always survive on the basis of their ability to satisfy certain requirements (Tok, 2010).

It is generally acknowledged that teachers at the elementary and secondary levels have a heavy burden in the evaluation of textbooks. The important job of conducting a comprehensive assessment is made simpler with the aid of checklists and rubrics. The research team of Mahmood, Iqbal, and Saeed (2009) established a rubric to rate textbook quality, based on the eight qualities Garvin (1987) suggested for superior goods. Three variables most commonly used to evaluate the arrangement of a textbook were the aesthetics, the perceived value, and durability. One of the few original ideas in Malaysia, using this standard, particularly to review student views of textbook design, is worth pursuing.

On the other hand, Weiten et al. (1996) looked at 13 widely used pedagogical aids, including chapter summaries and learning objectives, technical terminology in bold and pronunciation guides, chapter glossaries, review activities and learning checks. The most highly valued components in this category are technical terminology, chapter summaries, and running and chapter glossaries. Learning goals and pronunciation standards were disliked. Student grades and material evaluation had little connection. According to Weiten, a textbook is created with students' views in mind, not teachers' (1998). Applied academic studies can benefit from this strategy.

An objective analysis, teacher surveys, and student involvement research are three techniques used by Landrum

et al. (2012). Another technique is to study student responses and how preferences and self-reporting relate to course grades. Landrum, Gurung, and Spann (2012) used the CSAT and TAUS to measure student comprehension (1996). Purchased textbooks were more likely to be read, the authors suggest. These are textbook components that students read. Details about textbook design and utility. Adopting these methods in Malaysian schools and student views has drawbacks.

2. Method

The quantitative survey research design was utilised in this investigation. Students' views of Moral Education textbooks used in elementary schools were investigated using a questionnaire. The data was analysed utilising the basic descriptive technique since the study's premise is more general than speculative. Non-probability sampling, especially the handy sampling technique, was used for the sampling. The sample of the study includes 30 primary school students in Year 6 in Hulu Langat area who are taking Moral Education classes.

2.1 Item Reliability

Cronbach's Alpha scores, which range from 0.00 to 1.0, were used to evaluate the survey instrument's reliability. A number that is close to 1.0 denotes high dependability. A number around 0.00, on the other hand, indicates that an instrument is unreliable (Yusof, 2004). The range of scores and the degree of dependability are shown in Table 1. Cronbach's Alpha was found to be 0.98 in this research. Table 1 shows that a high value implies more dependability. As a result, it may be inferred that the instrument is successful and consistent, and that it can be utilised for study (Bond & Fox, 2015).

Table 1. Interpretation Cronbach's Alpha Score (Bond & Fox, 2015)

Cronbach's Alpha Score	Level of reliability
0.8 to 1.0	Very good and effective with a high degree of consistency
0.7 to 0.8	Good and acceptable
0.6 to 0.7	Acceptable
<0.6	The item needs to be repaired
<0.5	Items need to be dropped

Table 2 summarises the level of respondent's reliability value (person reliability) that can be accepted. Furthermore, according to Linacre (2005), the value exceeding 2.0 represents a good isolation index. For this study, the value of the respondent's reliability is 0.97 and the separation index (separation index) obtained is 5.65, exceeding the value of 2.0.

Table 2. Reliability Values (Cronbach's Alpha) and Reliability Values and Respondent Isolation for the entire Instrument construct

Isolation of Respondents (Separation Index)	Respondent reliability value (Person Reliability)
5.65	0.97
Cronbach's Alpha reliability value = 0.98	

Table 3 summarises the statistics of the reliability value and item reliability. The study's item reliability value is 0.94, which exceeds the value of 0.80. This indicates that the item is in good condition and acceptable (Bond & Fox, 2015). Meanwhile, the item separation value (item separation) is 4.06, indicating that it is good. As mentioned by Linacre (2005), a value exceeding 2.0 indicates a good index separation.

Table 3. Reliability values and Item Isolation for the entire Instrument Construct

Item Separation (Separation Index)	Item reliability value (Item Reliability)
4.06	0.94

After conducting numerous investigations concentrating mainly on textbook characteristics, the researcher created a six-item measure that was evaluated and accepted by expert researchers. There were two parts to this scale:

There are a number of demographic questions in Section A, such as what your age, gender, and current location are. The significance of print and paper quality, as well as the usage of colour in textbooks, were discussed in Section B. In addition, the participants were asked to evaluate the textbook's characteristics. General layout, cover, title page, table of contents; index; glossary; appendices; chapter layout, including chapter aims, summary, introduction; information boxes; activities; and questions. Textbook usage frequency and student assessments of visual stimulation levels were also addressed. The respondent was asked for their informed verbal permission, and they were instructed about the scale's items, with any misunderstandings explained appropriately. The poll was conducted entirely online using Google Forms. Respondents will fill out a google form to answer the question. The survey took an average of 15 minutes to complete for each student. All completed forms were coded and subjected to a data cleansing procedure, with numerical and category values given to the answers. Simple descriptive tests were run on this data using the SPSS 17.0 software.

3. Results

3.1 Quality of Print, Paper, and Colour

The respondents rated the quality of print as more essential than the kind of paper used to print the Moral Education textbook. The respondents ranked the importance of colour in visuals (pictures, charts, and diagrams) as the highest, learning aids (for coding, classification, and informative categorization) as fairly significant, and information presentation as the lowest (Table 4).

Table 4. Percentage of Perceived on The Importance of the Quality of Print in Textbooks

How important do you consider the following features in a textbook?	Not important	Somewhat important	Very important
Quality of print, font, type, graphics		17% (5)	83% (25)
Quality of paper used for printing	17% (5)	17% (5)	66% (20)
Colour presentation of information			100% (30)
Graphics, Pictures, charts, diagrams			100% (30)
Colour as a learning aid including coding, classification, and categorisation of information		17% (5)	83% (25)

Based on the table above, 100% of the respondents ranked the elements of colours used to present information and graphics, pictures, and charts as very important. This finding suggests that the use of color in presenting compelling information positively affects students' interest towards the moral education textbook. In addition, 83% of the respondents ranked learning aid, including coding, classification, and categorization of information and quality of the print, font, type, graphics, as the most important, while 17% ranked these elements as somewhat important. Next, 66% of respondents said the quality of paper used for printing is very important, 17% ranked this element as somewhat important, and 17% ranked it as not important.

3.2 Satisfaction towards Book and Chapter Layout Features

100% of respondents evaluated the functioning of their textbooks' cover, title page, table of contents, and index as good. Meanwhile, 83% of respondents said their textbook glossaries and appendices were sufficient. Additionally, 100% of respondents thought that their textbook's chapter introductions, exercises, boxes (with recommendations, additional material, and internet sources), and questions functioned well. Finally, as shown in Table 5, all respondents felt that the chapter objectives and summaries in their textbook were good and helpful.

Based on the table above, 100 respondents are satisfied with the book's cover, title page, and table of content. All of them are also satisfied with the appendix. Meanwhile, 83% of the respondents are satisfied with the glossary in the textbook, while 17% are dissatisfied. Finally, 100% of the respondents are satisfied with the chapter layouts, objectives, introduction, boxes, and additional information. These findings indicate that the students are satisfied with the chapter layout and found this element is helpful in their learning.

Table 5. Satisfaction of the Book and Chapters Layout Features

How would you generally rate the following features of your textbooks?	Do not exist	Present but unsatisfactory	Good functional
Book layout			100%
Cover and title page			(30)
Table of contents			100%
Indices of the respondents own textbook		17%	(30)
		(5)	83%
Glossary of the respondents own textbook		17%	(25)
		(5)	83%
Appendix			(25)
			100%
Chapter layout			(30)
Objectives of the chapters			100%
			(30)
Introduction			100%
			(30)
Boxes, additional information			100%
			(30)

3.3 Perceptions of Learnability

As shown in (Table 6), a substantial proportion of respondents think their textbook is aesthetically engaging. Meanwhile, there is little distinction between individuals who think their textbooks make learning simple and those who believe otherwise. In this view, the majority of students believe that the organisation of their textbooks facilitated revision. Additionally, 83% of respondents confessed to often referring to their textbooks (Table 7) for casual or independent reading as well as for assistance in completing teacher-assigned tasks or projects.

Table 6. Student perceptions of learnability

Do you think:	Not sure	No	Yes
Are your textbooks aesthetically appealing?	17%		83%
	(5)		(25)
Your textbooks are engaging enough to make learning more enjoyable?	33%		67%
	(10)		(20)
How does the arrangement of each chapter in your textbook aid with lesson revision?			100%
			(30)

Table 7. Student responses to the frequency of textbook use

How often do you study from your textbooks:	Never	Seldom	Frequently
Independent		33%	67%
		(10)	(20)
In accordance with teachers reading assignments		17%	83%
		(5)	(25)

As shown in Table 6, 100 per cent of the respondents strongly agreed that the chapters in the textbook help in their revision. In addition, 83 per cent of respondents agreed that the textbook is visually stimulating, and 17 percent were unsure. 67 per cent of respondents agreed that textbooks increase their interest and make learning easier, while 33 percent were not sure.

Regarding the frequency of textbook use, 67 per cent of the respondents often use textbooks independently to review lessons, while 33 per cent shared that they seldom use textbooks to study. Furthermore, 83 per cent of

students agreed that they often use their textbook as a reference to complete their assignments, while 17 percent of student's seldomly use textbooks as a reference. This indicates that students will use their textbooks more often to complete the assignments given by the teacher.

4. Discussion

Based on the survey's findings, the following things should be highlighted. To begin with, the findings of the research show that primary children value better textbook print and vivid images above high quality paper. Second, pupils are pleased with the textbook's chapter arrangement. Third, the connection between textbook layout perception and use rate does not seem to be obvious in this research. The overall impression of the textbook layout among the students polled, on the other hand, is favourable.

The first result goes against popular belief about the significance of paper quality. Nonetheless, it may be of interest to education authorities who are responsible for budgetary planning in the field of education. If this result can be extrapolated to a wider population, cost-cutting may begin by utilising lower-quality paper and redirecting resources to more efficient textbook design and printing. Furthermore, this result suggests the necessity for a stronger customer focus from a commercial standpoint in the context of students as customers, particularly in the private sector. Another consequence of this result is that textbook design should be reoriented. Because students valued print and visual aspects above paper quality, switching from paper-based textbooks to e-books or electronic resources may be a sustainable and cost-effective shift.

The second result is important in the context of learning in general. In light of earlier results (Weiten, Guadagno, & Beck, 1996), it is clear that elementary school children valued layout elements such as chapter summaries on a par with older respondents in past research. This shows that elementary kids are becoming more mature, and it provides insight into the psychology of learning at both the pre- and post-adolescent stages.

The third result is consistent with previous research that has looked beyond the usefulness of physical characteristics to the psychological aspects of textbook use. Giordano (1982) argued that even if a textbook's layout is very successful, it may still be inappropriate if it is fundamentally different from the layout of other textbooks in use. Furthermore, if map reading is not taught, important elements such as a map may become more of a learning stumbling block. Furthermore, when considering a textbook as a whole, Geertsen (1977) stated that the significance of students' motivation in utilising a textbook reading is just as important as the layout of the textbook.

Although results one and three seem to be unrelated at first glance, when taken together, they confirm the theoretical implications of emotional and cognitive motivation to learn. While the majority of students valued colourful images and found their textbooks aesthetically engaging, the result may have little impact on desire to study other topics. Harp and Mayer (1997), on the other hand, found that applying this result to additional topics is appropriate.

The following are general descriptions of the textbooks in question: (a) The pictures in this book are mainly ornamental. This explains the little difference in learning ability between those who did and those who did not. The aesthetic features of these textbooks primarily appeal to students on an emotional level, but their effect on their cognitive interest is yet unknown. Teachers' outstanding teaching abilities and competence in utilising the textbook to teach new topics and ideas may explain the favourable reaction to the effect on chapter arrangement in learning. This result emphasises the need of examining textbook design in its proper context. It is essential to view the function of a teacher as a mediator.

For obvious reasons, historically linear, text-based, teacher-centric textbooks that force teachers to pay careful attention to the books' content and pedagogy as well as to be extra-creative with teaching strategies and in using a variety of strategies to make up for the textbooks' inadequacies just won't cut it anymore (Giordano, 1982). In order to properly evaluate the results of a research, it is necessary to look at the findings in context, as well as to understand how textbooks' layouts could affect classroom dynamics. Although this is not the first study of its type to be conducted in Malaysia, the findings may open the door for further research in this field. By putting students at the centre of textbook creation, we can ensure that textbooks are more valuable as teaching and learning aids.

5. Implication Toward Educational System in Malaysia

Textbooks can help achieve teaching and learning objectives when the materials are appropriate to students' levels and needs. The types of materials in a textbook are main contents, exercises, and activities. Teachers can ensure the materials suit students' ability by using the materials directly, modifying, or supplementing with additional materials if the available material is not enough for students to master the skills.

According to Gopinathan (1983), textbooks are widely used in the classroom, despite the innovation of more sophisticated teaching aids in the information technology era. Textbooks are important learning tools and are difficult to replace with other materials. Therefore, textbooks play an important role in the education system in Malaysia. It is acknowledged that although despite the various modern and sophisticated teaching aids available in today's information technology era, we cannot ignore the role of textbooks. Realising its importance, the Ministry of Education has issued directives on using textbooks as the main resource in the classroom. Many studies show a positive effect between the use of textbooks and student academic achievement. From the teachers' perception, many teachers have recognised the importance of textbooks as a teaching and learning resource.

Given the important role of textbooks in the Malaysian education system, it is suggested that a more detailed study can be conducted by certain parties, especially the Education Resources and Technology Division (BSTP) of the Ministry of Education, to see the level of quality of textbooks and suitability and its use in the teaching and learning process. The study could involve samples from various parties such as teachers, parents, or guardians of students and students who cover a wider geographical zone to further increase the study's reliability, validity, and accountability. Surveys can also be conducted on respondents from different schools like private schools, and comparisons about their levels of feedback or views could be done.

6. Conclusion

To summarise, the physical characteristics of textbooks, particularly their print, chapter structure, and vibrant pictures, are critical for primary school pupils. In this perspective, there will always be opportunity to improve textbook design by concentrating on factors such as simplicity of use, textbook sustainability as a resource, and economics. This research of Year 6 students in the Hulu Langat district discovered that primary children do not place a premium on the quality of the paper in a textbook as long as other layout requirements, such as chapter components or colour, are met.

This research has important ramifications for educators. There must be a coordinated national effort to assist students in becoming significantly, if not completely, self-sufficient consumers of school texts. Reduce reliance on instructors as lesson mediators by eliminating the need to take notes on unneeded, long extracts from school-required textbooks. Additionally, there is a demand for more engaging and interactive textbooks. This need may be met by concentrating on the physical characteristics of elementary school textbooks without diminishing the significance of excellent textbook content. There are also clear consequences for textbook designers, who must adapt to advancements in publishing, instructional design, and educational technology by transitioning to the digital platform.

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Narrative as an Alternative Teaching Approach of Moral Education

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Abstract

This paper discusses how the Narrative Approach has the potential to be one of the alternative teaching approaches in the teaching and learning process of Moral Education. This paper begins with an introduction to Moral Education in Malaysia. Also described in this paper is the history of how Moral Education in Malaysia began. Next, this paper discusses the Standard Curriculum and Assessment Document (DSKP) policy that drives the direction of the Education system in Malaysia in terms of, what is to be achieved and how it should be implemented in achieving the goals outlined. Then, the discussion continued by detailing the teacher training program for Moral Education teachers in Malaysia. Finally, this paper elaborates the description of the Narrative Approach and how its implementation in a teaching and learning process can provide the best added value to teachers and students; especially in producing 'student-centered' learning.

Keywords: narrative approach, teaching and learning, moral education, DSKP, student-centered

1. Moral Education (ME): Malaysia Case

Before the implementation of Moral Education (ME) in 1983 as a required school subject for non-Muslim students, Muslim students were instructed to commence Islamic Education. During that time moral education was instructed in a different formal and casual way. For example, moral education was officially instructed under Pendidikan Islam (Ugama Islam) for Muslim students whereas the non-Muslim students had a choice of learning religious matters, separate the ordinary educational timetable (Balakrishnan, 2010). Then, Civics Studies was presented in 1972, as a compulsory school subject to all students since Standard Four (10 years of age) to Form Three (15 years of age), however the civics components were joined in the Local Studies course for Standard One (7 years of age) until Standard Three (9 years of age). The Civics curriculum, which depended on the *Rukun Negara* and the Federal Constitution, was intended for inspiring patriotism, and furthermore to grasping and undertaking social issues. In 1970 The *Rukun Negara* was presented as the National Ideology and frames the formation of Malaysia's national approaches, as well as in the education field, until now.

In spite of that, the audit of the Cabinet Report (1979) which is the national training framework, found that the implementation of Civics as a school subject was not pleasing. As it is a non-exam subject, teachers and students seeming the subject to be less significant, consequently, in many schools the time allocated for Civics was substituted with the instructions of other subjects as the school examinations moved closer (Ministry of Education, 1979). However, in the middle of 1970s, there was an emerging worldwide alarm on the social problems among the youths that drew the attention of educationists (Mukherjee, 1983). Thus, schools could be the responsible party to nurture good character of the students. In Malaysia, these worries were correspondingly transferred in the Parliament which indicated that there was a necessity to give some types of good direction that educational institutes ought to manage (Mukherjee, 1983). Consequently, the Cabinet Report (1979) prescribed that, while the components of Civic ought to be coordinated in all subjects, ME ought to be presented as a subject for school examination. It stated;

In creating a disciplined, cultured and united people, the Cabinet Report (1979) suggested that by the time Muslim students learn Islamic Knowledge, non-Muslim students should be taught Ethics and Moral Education. They have to sit for an exam for this subject. Through these two subjects, respect for the individual and freedom to embrace any religion in a multi-religious society should be nurtured (Ministry of Education, 1979, p. 49).

To explain the proposal in the Cabinet Report, the Ministry of Education (MOE) submitted the New Primary

School Curriculum (known as KBSR) in 1983 and the New Integrated Secondary School Curriculum (known as KBSM) in 1989. Through KBSR and KBSM, Moral Education (ME) was first introduced as a compulsory school subject for non-Muslim students at the primary and secondary school levels. Thus, starting at that time, the ME syllabus underwent two remarkable changes, namely in 2000 and 2010. The structure of Moral Education (ME) in Malaysia is based on the noble values (known as *Nilai Murni*) that are imperative to Malaysian plural society. For this situation, the *Nilai Murni* refers to values that depend on different religions, conventions and societies of various groups (Ministry of Education, 1983). These values would stipulate the standard to characterize good or honourable character and capable peoples that will empower them to lead a satisfying life and contribute towards the peace and harmony in Malaysia.

In Malaysia, this arrangement of values appears to change with every modification of the national educational programs. In the primary as for the Moral Education syllabus of 1983, there remained 16 core values and 64 sub values (80 values in total). However, in the 2000 ME syllabus, there were 36 values and further in the 2010, ME syllabus for elementary schools consisted of only 14 values. This brought up the issue of the rundown of set values and in addition the quantity of values that would be fused in the ME syllabus for secondary schools. Apparently, these values have been instructed to promote moral thinking/reasoning, moral feeling and moral behaviour. Therefore, the Moral Education in Malaysia seems to take the structure of character instruction that expands on moral values that are essential in building character together with applying moral thinking, feeling and action/act in daily life.

However, The Standard Based Curriculum for Secondary Schools (KSSM) which was implemented in 2017 has replaced the Integrated Curriculum Secondary School (KBSM) which began in 1989. KSSM was formulated to meet the new policy requirements under the Malaysia Education Blueprint (PPPM) 2013-2025 to the quality of the curriculum implemented in secondary schools is in line with international standards. International standards-based curriculum has been incorporated into KSSM through the drafting of the Curriculum and Assessment Standard Document (DSKP) for all subjects containing Content Standards, Learning Standards and Performance Standards. Efforts to incorporate assessment standards into curriculum documents have changed the landscape of history since the National Curriculum was implemented under the National Education System. Continuing students can be assessed on an ongoing basis to identify their level of mastery in a particular subject, as well as enabling teachers to take follow-up actions to improve student achievement.

The DSKP has also integrated the six pillars of the KSSM Framework, which is integrating knowledge, skills and values, as well as explicitly incorporating 21st century skills and higher order thinking skills (HOTS). The integration is planned to produce people who are intellectually, spiritually, emotionally and physically balanced as has been demanded in the Malaysia National Education Philosophy. In order to be efficacious in implementing KSSM, teachers' teaching and learning should emphasize the Inquiry-based Learning and Project-based Learning approach, so that students can master the skills that are required in the 21st century. It is an expectation by the Ministry of Education (MOE) that the implementation of KSSM will achieve the aims and objectives of the National Education System as a whole. As Malaysia National Education Philosophy stated that; Education in Malaysia aims to develop the ability of individuals holistically on an ongoing basis, to produce balanced individuals in terms of intellectual, spiritual, emotional and physical, based on strong faith and loyalty to God. The measure is taken to produce Malaysian citizens who are knowledgeable and competent, have high moral standards, responsible human beings who are able to achieve high personal well-being and able to contribute to the harmony of the family, society and the country in general. (Ministry of Education Malaysia, 1988)

2. Standard Curriculum and Assessment Document (DSKP)

The subject of Moral Education (ME) is an effort to teach students to be moral and ethical persons by emphasizing the developmental aspects of moral reasoning, moral emotion and moral conduct. It is expected that this course will produce students who are knowledgeable, dignified, and of a patriotic unity and enthusiasm towards contributing effectively to themselves, their families, their community and their country.

The Moral Education (ME) curriculum is realized through the Standard Curriculum and Assessment Document (DSKP) which is a mandatory document that every teacher must refer to, in order to plan and evaluate their teaching and learning. Therefore, teachers need to plan to translate this DSKP wisely to make teaching and learning more effective and attractive. In addition, teachers need to understand the level of mastery outlined in the DSKP and should always ensure that these levels of mastery are grasped by the students.

The DSKP's curriculum also provides understanding and appreciation and ensures that students practice universal values in the religions, traditions and customs of the various races and laws of this country. The

curriculum also offers a guide for students to make decisions and actions that empower them to perform moral and social responsibilities toward society, the country and as well as the world. It is also in line with the three moral principles, altruistic, autonomous and fair, which is crucial in building-up and maintaining a moral and ethical society. In this DSKP, there are 18 universal values that have been included in the Moral Education curriculum.

Besides, the DSKP also emphasizes the skills that the students need to acquire in order to prepare them for the challenges of the 21st century through the teaching and learning process of Moral Education. The mastery of these skills will help the students to build up their self-confidence in their daily lives. Thus, various teaching and learning approaches are also recommended to teachers in order to ensure their students experience a more meaningful Moral Education curriculum. The DSKP also emphasizes the understanding of the values of cohesion and good relations among people in order to produce a peaceful and harmonious citizenry.

Thus, together with the DSKP, the focus of KSSM Moral Education is to build a high standard moral character of the students. The development of this noble human being can be realized by adopting three moral domains, namely moral reasoning, moral emotion and moral conduct among students. Actions reinforced by moral reasoning allow students to think before acting. Moral emotions will motivate students to engage in moral action. Thus, in this way the moral conduct of a student will lead to a man of noble character. This moral domain will also encourage a student to make appropriate, accurate and consistent moral judgments. Moral considerations are a key aspect of moral formation that enables students to take action based on universal rules or values.

3. Moral Education Training for Teachers in Malaysia

Preparing learners for their character and values development is a vital part of the instruction process. Every teacher is a moral agent and has a great responsibility to nurture the moral development of their students. Therefore, instructors-teachers play a critical part in cultivating moral development in students. According to Ryan (1975), instructors (lecturers) have a commitment to enable pre-service teachers to get the most effective approach to make "ethical educational modules" in the classroom. The substance of teacher training must encompass more than scholastic substance plus educational aptitudes (Ryan, 1975).

In Malaysia, the University of Malaya (UM) was the early institution to provide a Moral Education course in their undergraduate programme. Moral Education was open as a minor course at the Faculty of Education at UM. Initially, the Moral Education course was offered under the Bachelor of Education (Teaching of English Language as Second Method) programme in 1989 and later in 2001 it was offered under the Bachelor of Education (Teaching of Tamil Language) programme (Chang, 2003).

In Universiti Putra Malaysia (UPM), the Faculty of Educational Studies has offered Moral Education as a minor programme since 1999 for students of Bachelor of Education. Meanwhile, at the postgraduate level, the master's program in the field of Moral Education has been offered since 1996. In the same year, 1996, International Islamic University Malaysia (IIUM) started to offer Bachelor Education specializing in Moral Education for the Teacher Graduation Special Program (*Program Khas Pensiswazahan Guru - PKPG*) and after that, retains it as a minor for the Bachelor Education Degree programme until now. Finally, in 2005, three public universities including Universiti Putra Malaysia (UPM), Universiti Utara Malaysia (UUM) and Universiti Pendidikan Sultan Idris (UPSI) started to offer Moral Education as a major in their Diploma and Bachelor of Education programmes.

Although this subject has been embedded in the school system for almost three decades, most of the teachers who teach Moral Education in primary and secondary schools are not among the teachers with special experience in Moral Education teacher preparation programs, sometimes the course is taught by teachers from specialization of other subjects (Balakrisnan, 2014). According to Balakrisnan (2019), a study she conducted in 2013 and 2016 on Moral Education found that 50 percent of teachers who teach Moral Education in primary and secondary schools do not have formal qualifications as Moral Education teachers. Most of the teachers were asked to teach the subject simply because they had an empty slot in their timetable. This would be very surprising if it still happens to this day. This suggests that Moral Education is viewed as a light and easy subject, where any teacher regardless of specialization background is qualified to teach it formally in the classroom. The truth is, Moral Education should be taught by teachers who are well-trained from the aspects of teaching and learning (content, pedagogy, skills, assessment, curriculum etc) of Moral Education (Chang, 2010). Moreover, Moral Education is taught to students with multi-ethnic backgrounds, therefore teachers are required to have special expertise in ensuring that it can be delivered as well as possible. Apparently, teachers hired to teach this course must have adequate qualification in terms of knowledge, skills and enthusiasm in developing the domain of moral development of students (thoughts, feelings and moral actions). A study by Sanderse and Cooke (2021)

found that acting on moral grounds is not an easy thing, especially if the teacher needs to teach it during the class, and he or she is not a specialized teacher in the field of Moral Education. This is because teachers' education programmes focus primarily on mastery of subject-specific content rather than teaching values as a whole. This reinforces that Moral Education needs to be taught by professionally qualified teachers in the field of Moral Education. With the intention of being more serious in implementing Moral Education as an official subject, the Ministry of Education (MOE) and other organizations such as universities and teacher training institutions need to be serious in expanding and exploring the methods of this subject in their teachers' education programme to provide teachers with professional knowledge and skills as subject specialists.

4. The Narrative Approach

According to Diekelmann (2001), the Narrative Approach is not just about using storytelling as a strategy for learning, nor is it a teaching strategy as such. Narrative Approach is an approach by gathering all the pedagogies (including traditional) into converging conversation such that the possibility for anything to show itself is held open (Diekelmann, 2001). In addition, Narrative Approach is an alternative pedagogy that invites active students' participation in learning and empowers them to take more control in their learning while promoting their reasoning skills (Dahlberg, Ekebergh, & Ironside, 2003).

As stated above, approach is often understood as teaching methods. However, in this Narrative Approach, 'approach' is more as a way of thinking about and comportment within education (Ironside, 2003). Therefore, approach in this sense, can be considered more as an epistemological aspect in learning and teaching in the Moral Education teacher programme. Narrative Approach is not a strategy to be implemented, but rather a way to create an environment within teacher's education that invites lecturers, preservice teachers, and their former experiences into converging conversations (Dahlberg, Ekebergh, & Ironside, 2003).

According to Diekelmann (2001), Narrative Approach is a site-specific process to teaching, learning and schooling. Furthermore, the Narrative Approach is specific for two reasons. Firstly, Narrative Approach challenges the assumptions inherent in conventional approaches. However, these assumptions are different from school to school. Secondly, one of the aims of Narrative Approach is to create opportunities for instructors and learners to engage in conversations about what is going well and what is not (moral issues). Yet, these conversations will differ from one educational setting to another. In the current study, using Narrative Approach in preparing Moral Education teachers has broadened the opportunity for the preservice teachers to groom their moral reasoning.

Apparently, the produced solutions are not generalized to all kinds of schools or classrooms, but the processes of Narrative Approach are transferable and can be enacted in any school or classrooms (Andrews et al., 2001). Narrative Approach is dedicated to reducing the power of the instructor-teacher, which means students have a voice on determining how the course is taught; as a result, they are encouraged to participate in the learning activities. Hence, by implementing Narrative Approach in the Moral Education field, or even in preservice teachers' programme, moral experiences (stories) or cases become tools for learning in the classroom. Besides, by critiquing and interpreting these stories/cases results in meaning-making activities, they ultimately lead to deeper learning that would promote preservice teacher's moral reasoning (Swenson & Sims, 2000).

Subsequently, engaging in a Narrative Approach learning environment could play a significant role in a curriculum. Thus, the Narrative Approach will provide two pedagogical goals, namely as learning efficiency and enthusiasm. The concept of learning efficiency has grown noticeably recently as teachers-instructors started to adapt constructivist learning in their teaching and learning processes, which highlights on knowledge creation instead of repetition instruction (Mayer, 1989).

Thus, Piaget (1954) asserted that due to the active narrative feature, by way of engaging students in a captivating world inhabited by diverse characters, this would encourage students to participate in extraordinary measures such as; first, co-construction (participating in narrative construction), second, exploration (actively engaging in narrative exploration by seeing how characters' intentions influence their actions in the evolving narrative), and finally, reflection (engaging in post-hoc analysis activities by reflecting the narrative experience and the theme). These three procedures are considered as significant steps in promoting cognitive development such as moral reasoning ability among students.

5. Narrative as a Teaching Approach in Moral Education

It is essential to a moral education teacher to know tremendous approaches to teach Moral Education as according to Abdul Rahman Md Aroff (1985), teachers cannot depend on only one single approach to moral education as an attempt to educate pupils' morality or in promoting them to develop morally. In fact, according

to Hersh, et al. (1980), each one of the main approaches to moral education has its weaknesses (and strengths too) for examples; Rationale-Building Approach, Farmington Trust project, Value Analysis Approach, Values Clarification Approach, Humanities Curriculum Project and Cognitive Moral Development approach.

Until now, the Cognitive Developmental Approach is still the most favoured Moral Education teaching approach in Malaysia and other countries. As a result, it is not an easy task to introduce the Narrative Approach as one of the alternative approaches in Moral Education. However, according to Tappan (1990), it was relevant to implement the Narrative Approach as one of the teaching approaches in teacher education programme as this approach has been proven beneficial in developing moral reasoning abilities in other educational programme (for instance, nursing education programme). In fact, as future teachers, especially Moral Education teachers, preservice teachers should be trained to have a well-developed moral reasoning skill to support their future students to also have a good moral reasoning capability. As Kohlberg (1976) claims, an instructor that have higher levels of moral reasoning skills will be able to perform teaching and learning processes more attractively and it is valuable in promoting students' moral reasoning skills.

Consequently, Tappan (1990) cited that the Narrative Approach is an approach of teaching that delivers an alternate way of learning for students. This was because the use of Narrative Approach in teaching and learning activities is more to practice the elements of using narrative to form an environment that offers students, teachers, and their former experiences into converging conversations to enhance student's learning experiences. For example, by learning to understand situations in the context of students' moral experiences and applying the knowledge learned through traditional methods in a moral education classroom, there is a stronger emphasis on critiquing, examining, exploring, and deconstructing moral situations that students have experienced. Thus, all these techniques would promote students' moral reasoning competencies as well.

Additionally, the strong point of the Narrative Approach is the opportunity to interconnect and share contextual ideas related to ethics, values, culture, and relationships to create changes and actions within the students and instructors as well. Furthermore, by practicing Narrative Approach in the Moral Education classroom, it could enable the process of gaining the attention of students by exposing them to moral experiences and problem-solving exercises. In the Narrative Approach, students are also required to share their moral stories (experiences), develop a sense of community, explore the personal and professional roles in their lives, in which these criteria will help them engage in moral reasoning. Hence, through practising an open discussion in the Narrative Approach, students will obtain chances to engage with each other and collaborate to interpret the meaning of their moral experiences.

Undeniably, the use of Narrative Approach in educational settings around the world is wide spreading lately. For example, in the Japanese former school system, the concept of learning is more to a teacher-centred emphasis. However, this concept has minimized the students' ability to practice self-directed concepts which is vital in higher education. Therefore, in a Japanese universities conference in 2002, scholars discussed the need to evaluate and modify their educational practices to give students better learning experiences especially in promoting their moral reasoning skills. One of the suggestions was to implement the Narrative Approach together with the traditional method of teaching and learning in teaching and learning processes (Kawashima, 2005). They believe by this way, students and instructors will acquire chances to share their life experiences and get a lot of benefits through their discussions. Narrative Approach is useful in assisting the students to be more open in sharing their perspective in teaching and learning processes, as Wells (1986) points out;

Organizing stories in the mind or even storytelling, is one of the most important ways to make-meaning; Thus, it is an activity covering all aspects of learning.... Through sharing narratives, teachers and students can share their understanding of an issue and make their mental model of the world closer. In other words, stories, and narration are relevant in all areas of the curriculum, in developing students' reasoning potential (Wells, 1986, p. 194).

Accordingly, by integrating the Narrative Approach into Moral Education teachers' programme, it is presumed that it would assist preservice teachers to appreciate their differences of moral experiences, views, cultural background and let them develop a professional identity as future Moral Education teacher with a competence level of moral reasoning. The reason is, through critical analysis of other narratives and by expressing their own moral stories, the preservice teachers will be able to gain insights regarding their own experiences and others, and finally engage their moral reasoning as well.

Apparently, another field that has implemented Narrative Approach dedicatedly as their teaching approach is the nursing and midwifery schools in Australia. Nancy Diekelmann (2001), who is a leader in nursing education research, has introduced the Narrative Approach while conducting study in nursing education. She strongly held that the crucial framework of the Narrative Approach is the concept of 'caring in community'. This means that

the purpose of Narrative Approach is to achieve consideration of phenomena through clarification (Seaton, 2005). Another scholar who is a proponent of the Narrative Approach is Dinkins (2005). She remarked that the Narrative Approach is not a method at all but a mode of understanding, that leads learners to involve in making-meaning actions, thus, promoting their moral reasoning ability.

6. Conclusion

This paper explores the elements and concepts that can be used as the foundation of research in teacher training program especially for Moral Education teachers. The overview of DSKP's policy that has connection to the pedagogical approach which supports the Moral Education in Malaysia also have been discussed in this paper. Then, this paper examined the background of the existing Moral Education program in Malaysia, in a way to provide an understanding on the rise of the Narrative Approach in Malaysia context. Subsequently, by using the Narrative Approach in Moral Education setting, it is hoped to offer an approach for teaching and learning in terms of inviting instructors and pre-service teachers to seek new meanings of their education experiences. Therefore, it could lead them to acquire better moral reasoning skills on the way to prepare for better future Moral Education teachers. Therefore, hopefully this paper could offer some insight to find the best way to make an alternative teaching approach such as Narrative Approach to be more successful in teaching and learning of Moral Education.

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Augmented Reality Mobile Application Co-Design Experience: Delineating the Nuances from the Lens of a System Developer

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Abstract

With the rapid development of educational tools, co-design has been on the rise. Co-design is instrumental in successful product development as it merges two key perspectives, namely consumers' insights and professionals' knowledge. The roles of users, designers, and developers are now blurred as educators have begun to construct their own tools for teaching based on problems and ideas conceived in their classrooms, thereby assuming roles as designers and to some extent, as developers. A more common practice in recent days is educators' co-designing of tools with system developers to achieve their targeted goal. This study attempted to explore the process of co-designing an augmented reality (AR) mobile application and the role of a system developer in mediating the design process with non-designers, namely academic members of the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia. This study further aimed to delineate the nuances of the AR mobile application co-design experience from the perspective of the system developer. Semi-structured interviews, observations, and document analyses were conducted to examine the detailed process of co-designing and developing the AR application as well as to understand the developer's interaction with the consumers. The main findings of this study suggest that the waterfall model of the Software Development Life Cycle was in use during the co-design process. This cycle generally involves five stages, namely (i) planning, (ii) analysis, (iii) design, (iv) implementation, and (v) maintenance, which are iterative in nature. The designer's role in mediating the co-design process encompassed balancing their knowledge and experience with the needs of consumers that do not necessarily match the designer's expectations. This was achieved through (i) precise communication, (ii) commitment to the delivery and quality of the AR mobile application, as well as to building cohesive working relationships, and (iii) motivation to work with co-designers during the development process. The findings shed light on the value of co-design and the complex role of designers in mediating the design process with non-designers, which when accounted for, can lead to more feasible project development.

Keywords: augmented reality mobile application, co-design experience, Software Development Life Cycle, Waterfall Model, communication, commitment, motivation

1. Introduction

Exponentially emerging technologies have brought significant changes to classrooms, transforming the landscape of education and teaching and learning practices. Several educational tools have been built from the ground up as a result of classroom research carried out by educators to optimize technologies in response to their learners' needs. Consequently, the role of users, designers, and developers have blurred as educators are now constructing their own tools for teaching based on problems and ideas conceived in their classrooms, thereby assuming roles as designers and to some extent, as developers.

This study presents the scenario of a designer who, with a group of academicians from the Faculty of Medicine and Health Sciences (FMHS), Universiti Putra Malaysia (UPM), co-designed and developed an augmented reality (AR) mobile application for the teaching and learning of the Central Nervous System. Medical education nowadays leverages three-dimensional visualization software, mobile applications, and virtual cadavers for the teaching and learning of medical courses, especially those that involve human anatomy (Darras et al., 2019; Van Dijck, 2000). These technologies do not only provide a more realistic and advanced representation of the human body but can also be used and reused without limitations. In tandem with efforts to integrate digital technologies in the teaching and learning process, using AR technology benefits instructors and learners in understanding core

concepts via three-dimensional visualization. To successfully develop this AR mobile application, the system developer and academicians came together to co-design the system.

Co-design is instrumental in successful product development as it merges two key perspectives, namely consumers' insights and professionals' knowledge (Trischler et al., 2017). According to Sanders and Stappers (2014), co-design is the collective creativity of collaborating parties (who comprise designers and non-designers) in a design development process. Co-design has become a more common practice in recent days as designers are moving towards human-centric design (Sanders & Stappers, 2014). This shift has opened up opportunities for educators to co-design their tools with system developers to achieve their targeted goals. Some have suggested that such collaborative work can beget myriad innovative solutions for complex issues, reduce the duplication of efforts through the concerted initiatives of multiple individuals, and promote the efficient management of financial resources (Boyd & Peters, 2009; Brown et al., 2012). The study by Warburton et al. (2008) further confirmed that the benefits of collaborative work extend to the creation of a higher quality program and a more comprehensive system.

Even though Trischler et al. (2017) suggested that co-design teams that work collaboratively to develop design concepts can achieve higher user benefit and novelty, they also found that such teams can result in lower feasibility. This means that the designer may have to compromise the feasibility of the system to fulfill the needs of consumers. Conflicting insights and values are also common during co-design. Having pointed this out some time ago, Ceraulo (2005) mentioned that unresolved issues caused by differences between designers and their consumers may affect the quality and function of a system. Thus, finding harmony within dissonance is the major challenge of the co-design practice (Molnar & Palmas, 2021; Mulvale et al., 2020).

Molnar and Palmas (2021) identified the co-design process as a negotiation-based search for settlements in a way that may not necessarily solve conflicts but may suspend the potential effects of a conflict should it happen between the system developer and the consumers. Negotiations and diplomacy are key to the success of co-design; as such, the process of co-design is typically conducted within a "designerly peacemaking" setting (Molnar & Palmas, 2021, p. 1). To ensure co-design success, Trischler et al. (2018) recommended system developers to carefully select customers, assemble designer teams, and manage intra-team dynamics.

It is evident in the literature that the cohesive relationship between co-designers (i.e., system developers and consumers) must be understood, as the co-design process faces several challenges in this regard. A study by Marek et al. (2015) indicated that although collaboration can be seen as an effective means of improving work culture issues, successful collaboration is still difficult to achieve; rather, failure is more prevalent. In a more recent study by Dimopoulos-Bick et al. (2018), it was found that challenges in co-design usually revolve around power and equity for equal say, commitment to the process, methods of gathering experiences that are usually not interpreted or contextualized collaboratively, design improvements, and implementation. The authors added that limited resources, such as time and money, and a traditional hierarchical decision-making process may impact co-design projects as well, to the extent that they can stall implementation efforts.

Adding to these findings, Jones et al. (2020) outlined several forms of consumer participation in co-design, including survey questionnaires, interviews (face-to-face, over-the-phone, or digital), interactive workshops or meetings (face-to-face or digital), design charrettes (face-to-face or digital with bigger groups), design jams (face-to-face or digital with smaller groups), crowdsourcing (open calls to a larger group), hackathon (digital events with large groups), and ethnographic approaches like observations. Although several studies have reported the many benefits of collaborative work in fostering effective co-design practice, the aforesaid forms of participation in co-design come with their own challenges. Among others, an approach may be intrusive and make consumers reluctant to give feedback. Some techniques may also be unable to appropriately measure the breadth and depth of the problem, subject to social biases, or lack harmony when there is dissonance between designers' knowledge and consumers' insights and needs (Jones et al., 2020; Molnar & Palmas, 2021; Mulvale et al., 2020).

Despite these issues, Ashkenas (2015) highlighted that well-meaning cooperation is the key to collaborative behavior. Marek et al. (2015) echoed that successful collaboration can still be achieved if the factors of communication, function, leadership, process, members, resource, and context are fulfilled. Furthermore, Keys et al. (2016) concluded that organizational dynamics and a variety of communication strategies are the most common elements of successful inter-profession collaboration. Molnar and Palmas (2021) also recommended negotiation and diplomacy as essential elements of successful co-design collaboration between system developers and consumers.

In another study, a clear understanding of roles and information design were identified as success factors in

easing into the culture of co-operating and providing solutions to common communication problems (Waller et al., 2016). This has long been recommended by Yousuf et al. (2008), who asserted that more effort needs to be focused on communication and organization in team meetings to ensure individuals are aware of their roles and responsibilities and improve their commitment towards achieving expected goals.

Saraiva and Iglesias (2016) revealed evidence that time constraints and time-related variables may affect people's roles in terms of whether they want to cooperate or compete in organizations. This is due to the social dilemma that forces individuals to choose between a personal need and group goals; often, they need to sacrifice one for the other. This is consistent with the study by Van Lange et al. (2013) that examined social dilemmas, the need for people to cooperate, and how such cooperation can be improved and maintained in groups.

One of the most significant current discussions within the field of co-design is team motivation. Team motivation can be defined as the coordination of collective efforts with high intensity to achieve team goals (Grant & Shin, 2012). The growth of literature on team motivation is not surprising considering the vast amount of extant research on team organization and work teams (Hollenbeck et al., 2012). For example, Zhu et al. (2016) focused on the effects of intrinsic and extrinsic motivation on the creativity of employees. They suggested that collaborative and competitive climates influence employees' creativity and improve their motivation.

From another perspective, Dent-Spargo et al. (2018) highlighted the importance of the self-determination theory in supporting co-design activities. They proposed that the participants of a co-design process are motivated to contribute more and even work outside their comfort zone if their psychological needs for autonomy, competence, and relatedness are met. This finding was supported by Lindblom et al.'s (2021) work which demonstrated that acknowledgement of participants' insights motivates them to contribute more, even if they do not fully understand their role as co-designers.

Based on the aforementioned studies, we found it imperative to understand how interpersonal experiences between the designer and his co-designers affect the development process. The questions that drove this study were: (i) what does the process of co-designing an AR mobile application look like? and (ii) what are the experiences of a system designer in mediating the co-design process with non-designers?

2. Method

Because a system developer plays a vital role in translating ideas into viable concepts, this study focused on the experiences and roles of Riz, a system developer who was involved in the co-design and development of an AR mobile application for the study of the Central Nervous System. The co-design involved academic members of FMHS UPM, whom we regard as non-designers in this paper. Eliciting his experiences may offer insights into the value of co-design and the complex role of designers in mediating the design process with non-designers, all of which can lead to feasible project development.

As proposed by Merriam and Tisdell (2015), we adopted the qualitative research approach to gain an in-depth understanding of Riz's interpretation and meaning ascription surrounding his experiences in mediating the co-design process. Semi-structured interviews and observations were conducted while documents were analyzed to provide rich and descriptive findings (Fraenkel et al., 2011). Prior to data collection, the system developer gave his consent to participate; the name 'Riz' is a pseudonym to safeguard and protect his anonymity.

A total of three audio-recorded interviews with Riz, each lasting between 60 and 90 minutes, were transcribed. We read and re-read the transcripts to familiarize ourselves with the data (Creswell & Poth, 2016). Meanwhile, observations were carried out each time Riz had meetings with the academic members of the FMHS. We observed a total of four meetings utilizing the non-participatory technique (Patton, 2002), as we wished to keep the co-design process as organic as possible without tampering with it. Field notes were taken during the observations. Finally, the documents we collected were screenshots of the AR mobile application, flowcharts, wireframes, and user interfaces provided by Riz, the system developer. Numerous memos were written as a pre-analysis of the interview transcripts, field notes, and documents before we began open coding (Charmaz, 2006).

3. Results and Discussions

We picture Riz as a fully dedicated and inspiring young man. He is knowledgeable and had over three years of experience in software development at the time of this study. He was the only system developer involved in the co-design process for the AR mobile application project. Having no medical education background, Riz depended on the insights of the FMHS academic members to understand latent users' needs.

3.1 The Process of Co-designing an AR Mobile Application

In this section, we discuss our findings for the first question – what does the process of co-designing an AR mobile application look like? The themes that emerged suggest five phases in the process of developing an AR mobile application: i) planning, (ii) analysis, (iii) design, (iv) implementation, and (v) maintenance. These phases mimic the Waterfall Model, which is one of the Software Development Life Cycle (SDLC) models commonly used in the process of creating computer systems and software in the industrial and engineering fields (Thayer & Yourdon, 1997). This is evidence that the system developer adhered to a specific SDLC model to work systematically towards the targeted output.

3.1.1 Planning Phase

The co-design process commenced when the system developer received requests from the academic members of the FMHS to design and develop an AR mobile application for the teaching and learning of the Central Nervous System. This phase set the foundation for the mobile app to be developed. At this point, Riz gathered input from his co-design partners, namely the FMHS academic members, specifically in identifying and analyzing the problems that occur in the medical classroom. The forthcoming excerpt explains the process:

At this phase, the stated problem was that the medical students need a model of the human brain when they want to study about the central nervous system. Because of the limited availability of this model, they could only use the model in the laboratory. They could not learn outside the laboratory as the model was not there. The purpose of this app is to provide them access to a model of the brain when they want to learn anytime. (Interview 1)

In this phase, Riz highlighted the importance of identifying the requirements of the user. He added that the dynamics of user requirements have a follow-up impact on learners' and educators' intuition when using the application. Therefore, both parties involved in the co-design process had to resolve any discrepancies that may arise:

In the planning phase, for me, user requirements are very important. The requirements show what the problem is, what learners' needs must be addressed, and what educators want. This is why I held several meetings with the FMHS team to clarify the requirements. They also required my expertise to explain the available technology and how to integrate it with the proposed application. (Interview 2)

System feasibility is the first phase of the Waterfall Model (Boehm et al., 1976). Focusing on the development proposal, this phase included the project's timeline, estimation plan, and communication plan. As it is the most crucial part of a system's development, it necessitated creating Gantt charts and flow charts from the beginning of the development until the implementation phase. Riz also utilized an instant group-messaging platform to facilitate swift communication between him and his non-designer co-design partners. Unanimous understanding and approval of all the co-designers ensured time efficiency. Figure 1 illustrates the flow chart of the AR mobile application project's planning.

3.1.2 Analysis Phase

The system developer then proceeded to the second phase – analysis. In this phase, Riz had to guide his co-designers in determining the necessary requirements for development. From the design jams he had with the academic members of the FMHS, they managed to consolidate a detailed outline on how the system should function along with its objectives, specifications, and application requirements. At the end of the final design jam, he collected the requirements from his co-design partners, as described in the following excerpt:

The FMHS academic members provided me with the user requirements, where the objective of the app, the justification for its development, and the required function of the app were consolidated in a single document. They also provided a draft interface on how the app should look and function (Interview 1)

A market search was deemed important at this stage to prevent redundancy in application functionality as well as to add novelty to the proposed mobile application. The following excerpt explains this step:

In this phase, I was required to explore various types of articles and journals. I also reviewed some applications in the current market. This gave me more information on how the proposed app should be, [such as] its design interface and content. (Interview 1)

Additionally, Riz emphasized other areas that needed equal attention, which were user scope, content scope, and system scope. Interestingly, his co-design partners were involved only in the user and content scope. The forthcoming interview excerpt explains this:

Based on my previous experience, when I need to design a new system, I normally divide it into three scopes. First is the user scope, then content scope and system scope. For the user scope, I need to analyze

the user requirements given by the medical faculty. Then in the content scope, I look at the storyboard provided, and the system scope is where I prepare a design for the system and later present it to the stakeholder. (Interview 2)

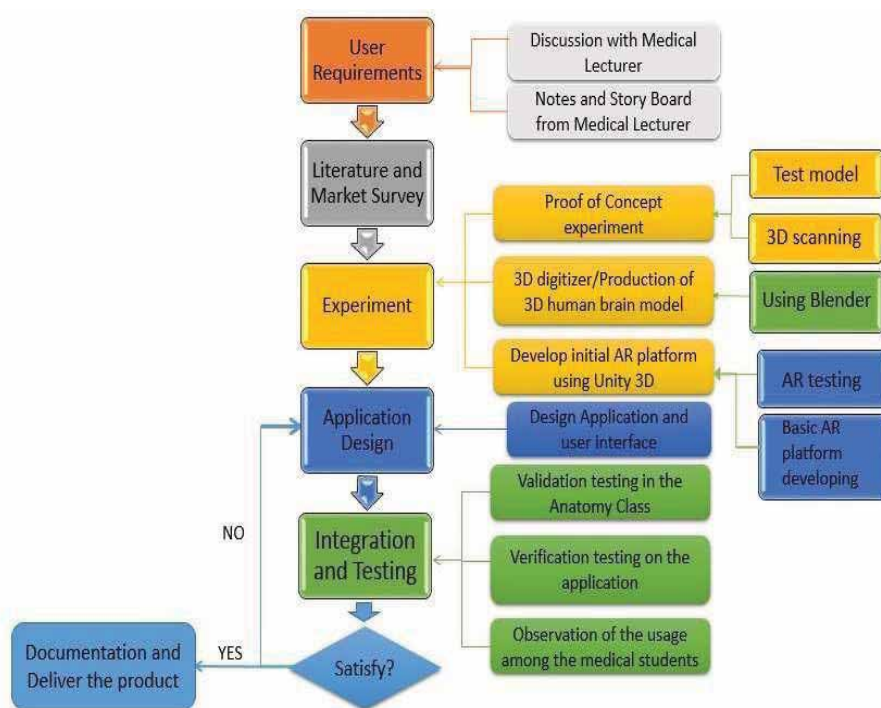


Figure 1. Flowchart of the AR mobile application project development plan

Riz also emphasized the technique used to ascertain the requirements given by his co-design partners. In this project, Riz employed an observational ethnographic approach to examine the current learning process and existing software system using AR technology. He stated that:

[...] traditional method is when I observed the current learning process in the classroom, and for application review, I analyzed and compared the strengths and weaknesses of each app related to this project. For example, the applications that I reviewed were Chemistry 101, AR flashcards, and the Octagon humanoid. Based on these apps, I looked into the system, interface, and function of the app. (Interview 3)

3.1.3 Design Phase

In the design phase, Riz worked on the storyboard to translate the requirements outlined by the academic members of the FMHS into a viable document. The storyboard served as their point of reference in understanding the architecture of the AR mobile application and its fulfillment of his co-design partners’ requirements. Although Riz worked on the storyboard by himself, collaboration in this scenario took the form of sharing the storyboard with the academic members, who then verified or rectified the storyboard.

In the design phase, I created a storyboard like a blueprint which follows the requirements outlined by the medical faculty members. From their complex requirements, I simplified it into a storyboard. I also made a draft interface for the design application – around 20 pictures of the application interface that represents how the application looks, its specific buttons, and how they interact with the content – then I presented it to the faculty members. (Interview 1)

3.1.4 Implementation Phase

The implementation phase focused on translating the abstract concepts into a tangible product. In this phase, Riz played three important roles, namely programmer, interface designer, and tester specialist. Apart from this, the co-designer partners and Riz collaboratively worked on six key activities to complete the AR mobile application. The activities were modelling through the digitalization process, coding, video recording, testing, re-testing, and documentation. With the academic members, Riz took a digital photo of the real brain model from several angles to build a digital three-dimensional model for the AR experience. He worked on anchoring each picture, symbol,

button, and model to specific actions; his co-design partners were not involved in this activity. He later proceeded to the video recording activity, about which he commented:

Based on the requirements agreed with the academic members, I was given a task to develop a video specifically for this app. I needed to set up a schedule with the medical academic members and do a video recording of an academic giving a lecture on the central nervous system.” (Interview 3)

Testing was then conducted to confirm if the application adheres to the users’ needs and follows their plan. For this purpose, a series of validation sessions were conducted with the FMHS academic members who are subject-matter experts on the Central Nervous System. The participants contributed their feedback on ways to improve the mobile application, as explained below:

In the testing phase, I had to do a validation process to confirm the function of the app tallied with the requirements of the stakeholders. The first step in the testing phase was validation with medical experts. They tried the app and then gave feedback on the function and content used. (Interview 3)

Additionally, a re-validation was carried out with medical students as they are the targeted users of the application. The interview excerpt below explains the activity:

After the testing process with the medical experts, I had to make some improvements. After one week of improvements, I did re-testing with 12 students from FMHS to get feedback from their perspective. (Interview 3)

Feedback from both sessions was then consolidated and taken into account when finalizing the AR mobile application. According to Riz, the implementation phase involved the most work compared to other phases:

For me, this phase was the longest and most difficult compared to other phases, because I took a longer time to find the right technique for the digitization process. I should have completed it in week 10; however, due to the difficulty in the digitization process, I completed it in week 13 as I only discovered the right technique then. (Interview 1)

3.1.5 Maintenance Phase

Maintenance is the final phase after the application was finalized. This phase is important in sustaining the optimum use of the application. However, the designer mentioned that the maintenance for the AR application was borne by his co-design partners, namely the academic members of the FMHS as he was engaged only as a freelancer and did not directly belong to the team.

3.2 The System Developer’s Experience in Mediating the Process of Co-design with Non-designers

This section discusses the findings of the second research question – what are the experiences of a system developer in mediating the process of co-design with non-designers? The findings for this question echo the findings for the first one. Through our analysis, we found that Riz played an instrumental role throughout the process of mediating the designer and co-designers’ (i) communication, (ii) commitment to building a cohesive working relationship as well as to the delivery and quality of the AR mobile application, and (iii) motivation in working together.

3.2.1 Communication

Communication was one of the main factors behind the successful AR mobile app co-design process that led to its feasible project development. Without effective communication, Riz mentioned that several conflicts would have arisen, such as misunderstandings about the responsibility of each co-designer’s role. His effort in creating a communication platform via an instant messaging system accessible on each member’s smartphone made the process swift. According to Riz, the positive impact of well-managed communication did not only create a meaningful co-design experience, but more importantly, led to the success of the AR mobile application’s development. This aligns with Waller et al.’s (2016) assertion that the clear understanding of roles, responsibilities, and information design is a key success factor in shaping a culture of cooperation and providing solutions to common communication problems.

3.2.2 Commitment to Building a Cohesive Working Relationship and to the Delivery and Quality of the AR Mobile Application

The aggregated comments given by Riz gave a clear message that every member of the co-designer team had to fully commit to ensuring the project was delivered on time. Each person’s commitment to success was essential during the development process. The system developer mentioned that following best practices to manage delivery time was just as important as preserving the quality of the AR mobile application. This demonstrates the

level of professionalism and commitment necessary for creating a quality product. Riz further underscored that maintaining healthy and robust bonds with his co-designers was vital in building a working relationship, despite some disagreements along the way. By doing so, he initiated a higher level of volition among his co-designers, which led to their increased engagement and quality contributions (Dent-Spargo, 2018; Lindblom et al., 2021).

3.2.3 Motivation in Working with Co-designers

Through the memos garnered from the observations, we detected a sense of pride and accomplishment among the co-designers when the AR mobile application was completed. In some instances, it was evident that the co-designers had genuine affection for one another; this sense of friendship is what made their working relationship stronger. According to Dent-Spargo (2018), participants in a co-design process are usually motivated to contribute above and beyond their duties when their psychological needs for autonomy, competence, and relatedness are met. Recent work by Lindblom et al. (2021) resonates with these findings by adding that although participants may not fully understand their participatory role, they are more motivated to contribute when their insights are valued. Indeed, Riz said that the moral support, affection, and kindness shown by his co-designer partners made him enjoy his work more.

The system developer's experience and roles in mediating the process of co-design with non-designers are explained in Figure 2.

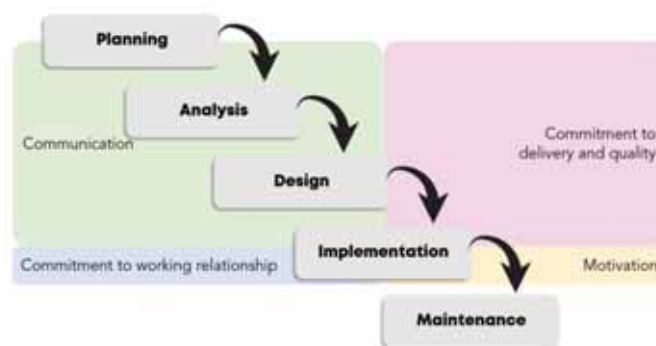


Figure 2. System developer's role in mediating the co-design process through the Waterfall Model.

4. Concluding Remarks

This research found that it is imperative for a system developer to adhere to a certain SDLC model to develop an AR mobile application. In this study, the system developer followed the Waterfall Model to assist him throughout the co-design process that he mediated with his non-designer co-design partners, namely the academic members of the FMHS. We found that the phases of the Waterfall Model reciprocated one another in a non-linear method throughout the co-design process, as the process involved several negotiations between the system developer and his co-designers. This led to several revisitations to the phases of the model, namely planning, analysis, design, implementation, and maintenance. Because the system developer had non-designer counterparts in the co-design process, his role was vital in ensuring the success of the AR mobile application. Consequently, communication, commitment, work enjoyment, and satisfaction emerged as important factors that he needed to mediate in ensuring the feasibility of the project. This was embodied by the co-designers' motivation and willingness to contribute during the sessions and sustain their involvement throughout the process. Since the co-designers were also users of the AR mobile application, they showed great responsibility in expressing themselves creatively as they had a sense of ownership over their contributions. Listening to, understanding, and valuing the non-designers was important for the system developer in mediating the co-design process as well, so that the co-design partners knew that they had control over what they envisioned to achieve. Overall, since system developers possess more design knowledge, their role in finding the right balance and mediating the co-design process with their non-designer partners is instrumental in ensuring the success of any system development. We conclude that system development through co-design is a concerted effort that involves dynamics of power between system developers and their non-designer counterparts. In this regard, this study has shed light on the roles of the system developer in the co-design process in each phase of the Waterfall Model under the SDLC.

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English Language Anxiety and Motivation Towards Speaking English Among Malaysian Pre-University Students

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Abstract

This study aims to identify the level of English language anxiety and level of motivation in speaking English among Malaysian Pre-University students. The research sample was composed of pre-university students in Selangor, Malaysia. Using a quantitative research method, the researcher distributed a survey questionnaire which was developed by adapting existing questionnaires by Pappamihel (2002) for English language anxiety scale and Schmidt, Boraie, and Kassabgy (1996) for motivation. Results of the data analysis established there was a low level of English language anxiety in speaking English among pre-university students, and moderate level of motivation, yet the level of intrinsic motivation was slightly lower than the level of extrinsic motivation in speaking English among pre-university students. The results showed there was a significant correlation between English language anxiety and motivation in speaking language. However, there was no significant difference in gender for English language anxiety and motivation. There was a significant difference on races for English language anxiety and insignificant differences on races for motivation. The findings of this study may serve as a platform for school authorities and policymakers in developing motivation and reducing language anxiety among students.

Keywords: English language anxiety, motivation, English language speakers, pre-university students

1. Introduction

English is an international language and has been spoken in many countries as native or second and foreign language. Almost in every country the English language has become mandatory to be taught in schools. Thus, in countries like Malaysia, the knowledge of English language is becoming increasingly widespread and those who have good command of English, would help them to broaden the chance of employability in the future, especially for university students (Hanapiah, 2004). The role of policy makers is very important in any sector, mainly in the education system because in order to bring changes and progress in education the policy makers have to put in effort which brings benefits to the people who engage with the education. According to Khemlani, Cavallaro, and Coluzzi (2009), in the year of 2000, after two decades, English was re-implemented as a compulsory subject in pre-university for those students who wish to enrol in local universities.

Initially, Malaysia is one of the Asian countries that is adopting a bilingual system of education. The English subject was introduced as Malaysian University English Test (MUET) and the government made the students sit compulsorily for the examination in order to enter public universities. Miskam and Saidalvi (2018); Khemlani et al., (2009) reported the new policy was introduced in 2002 that Science and Mathematics must be taught in English language in all government schools and later on Miskam and Saidalvi (2018) added that MBMMBI (Uphold *Bahasa Malaysia* and Strengthen the English Language) was introduced in 2009 for the students to improve English language proficiency level. The coherent explanation was given by the government over the changes that they (Ministry of Education) want to ensure all students should not be left behind in this world of globalization.

In this regard, this article focuses on the influence of affective variables in English language learning. Many of the factors have been identified in the English learning environment, but this article will focus on two major categories of affective factors, namely language anxiety and motivation. In terms of instrumental/integrative motivation, research has revealed strong evidence that an integrative approach to language acquisition is helpful (Ametova, 2020). Anxiety has a substantial impact on second language learners' classroom performance once

they enter university. Specifically, Malaysian pre-university students will encounter few problems if they score low bands from band one till band three in MUET examination, it might prevent them from entering public universities (Harun et al., 2021). Since MUET is a mandatory requirement, students need to score at least band three, which is considered as good in their speaking skill test (Harun et al., 2021). English-speaking skills are also very important when they start looking for jobs. During the interview, most candidates have to speak in English since it is the medium of interview. When the students do not have good proficiency, they might not get a good job. Hence, mastering the English language is quite important among Malaysian university students. However, some of them are facing problems in learning English due to anxiety and motivation to speak English. There are higher chances for them to have high levels of anxiety and low levels of motivation in learning and speaking English language (Barnes & Smagorinsky, 2016). Therefore, the primary purpose of this study is to present empirical evidence on English language anxiety and motivation among Malaysian pre-university students. The study has three main aims: first, to determine the levels of English language anxiety and motivation to speak English among Malaysian pre-university students. Second, to examine the relationship between language anxiety and motivation; third, to determine whether there is a substantial difference in language anxiety based on gender and race.

2. Literature Review

2.1 Language Anxiety

Language anxiety is a difficult and multifaceted phenomenon of self-perceptions, beliefs, feelings, and behaviours connected to language acquisition. It is characterised as a complicated and multidimensional phenomenon of self-perceptions, beliefs, feelings, and behaviours associated with language learning (Kralova, 2016). In the past years, research has shown that language is the specific type of anxiety mostly related with second language acquisition as asserted by Horwitz (2001), who claimed language anxiety can weaken learners' learning process in language learning and raise anxiety among learners. The anxiety that the students experience may have a debilitating impact on their ability to speak out. Thus, this explains that when the students encounter anxiety, it will affect their learning process of language and also gives difficulties in improving their language that they have learned. When the students encounter difficulties in learning, it will automatically develop negative thoughts of themselves in their mind. Cheng, Horwitz, and Schallert (1999) said that students have certain negative assumptions, in the aspect of communication, avoidance of certain kinds of social exchange, and fear of being evaluated. Students are always afraid of their audience that they might judge them negatively or underestimate them when they have low proficiency in language which develops language anxiety.

The theory related to language anxiety was developed by Horwitz in 1986 (Horwitz, 1986). This theory has explained three components of language anxiety which is communication apprehension, fear of negative social evaluation and test anxiety. The first component which is the communication apprehension suggests that language students have mature ideas and thoughts but also have low access to second-language vocabulary when they need to convey a message. The inability to know more vocabulary leads to frustration and apprehension. The second component is fear of negative evaluation. Fear arises due to negative evaluation and because of this, students are not confident of themselves and what they are expressing. They will have a negative assumption that they are unable to make a suitable social impression. The third component is test anxiety, which means students will have fear of academic evaluation. The instructional method requirements of the school and teachers' high expectation on the student's progress lead to test anxiety. These three components lead to a massive negative effect on second-language anxiety (Zheng & Cheng, 2018).

2.2 Motivation

Motivation can be categorized into two major types; intrinsic and extrinsic motivation as claimed by Deci and Ryan (1985). The researchers developed a self-determination theory which related to motivation. In that theory they developed a sub-theory which is Cognitive Evaluation Theory (CET) for intrinsic motivation and Organismic Integration Theory (OIT) for extrinsic motivation. As for the CET, it explains the variability in intrinsic motivation. CET is enclosed in terms of social and environmental aspects that supports and weakens intrinsic motivation. It explains that intrinsic motivation will be catalysed when students are in conditions that lead to their expression. Students with personal interest, who enjoy the language and inherent satisfaction will have a high level of intrinsic motivation. If they do not have any of these, they will tend to have low intrinsic motivation. Plenty of studies have shown that motivation plays an essential role in the success of language learning. In the order to explain the success or failure of any difficult activity, motivation is the key factor. Mitra (2016) said that numerous studies and experiments claimed that second language learners will be successful with the right motivation in human learning. Therefore, it is essential for all parties to focus on the students'

motivation levels in order to gain success in second language learning.

Study on extrinsic and intrinsic motivation has been widely carried out and the difference between them has been discovered on the importance of both development and educational practices. The most basic intrinsic motivation is humans doing something due to the inherent interest and joy whereas extrinsic motivation is humans doing something because it leads to different or separable outcomes (Ihsan, 2016). Thus, a language learner who is self-motivated to learn a language and chooses to do so of their own will, will be more successful in reaching their goals. Moreover, since humans also have some desires to be part of the community, extrinsic motivation can also be internalised and become a part of learner's intrinsic motivation deals with behaviour of oneself, in order to experience pleasure and satisfaction such as a sense of achievement, self-esteem, being able to use the language appropriately and more. Moreover, Ihsan (2016) claimed that motivation is solely a concept without substantial reality because none has seen motivation and all we have seen is effort, interest, attitude and desire in regard to motivation. On the other hand, extrinsic motivation deals with performing a behaviour which usually ends or involves other consequences of success on the task such as prizes for doing great, getting rewards, a promotion in job and more.

2.3 Relationship Between English Language Anxiety and Motivation in Speaking English Language

Several previous studies have found links between English language anxiety and motivation. Liu and Chen (2015) reviewed a study by exploring the association between language anxiety and motivation among Taiwan junior high school students. The researchers found that motivation and anxiety were correlated and motivation can serve as an important predictor of language anxiety. Two motivations, which are eager to learn and speak the language and motivational intensity, contributed to the predictions. They also stated that the speakers with anxiety tend to be more concerned with low motivation which leads to poor proficiency in speaking.

In addition, the study by Nishitani and Matsuda, (2011) investigated the relationship between language anxiety, interpretation of anxiety, intrinsic motivation and the use of learning strategies. The researchers focused on how language anxiety and intrinsic motivation affect the use of learning through the acknowledgement of failure. The findings revealed that students with a high level of intrinsic motivation realized the benefits that they gain from failure and they make use of the learning strategies. In contrast, the students with a high level of language anxiety accredited failure to anxiety and making use of learning strategies to overcome the failure was very less.

As previously written, motivation in language learning and speaking has been researched over the decades. It has been declared that motivation correlates with speaking skill for achieving good proficiency in the language. However, both motivation and anxiety are the variables that might change over the time period. A study conducted by Gardner, Tennant, Masgoret and Mihic, (2004) on language anxiety among a bunch of students learning French language for almost a year. The researcher seeks to decide if and up to what extent the variables that establish in the Socio-Educational Model changed over time. The researcher found that there was a minor change in French used anxiety over a time period, but a major change in anxiety which also relates to language anxiety over the years. There was also serious change in motivational need among the learners and speakers. Additionally, Gardner et al. (2004) figured out that there was some variation in motivation or anxiety across courses. According to their findings, the results showed that students, who have scored an A, have high levels of motivation and low levels of anxiety. Students, who have scored B, have average levels of motivation and anxiety. Both variables were at an equal level. Students, who have scored C to F, have low levels of motivation and high levels of anxiety towards learning and speaking the language. In conclusion, these results demonstrate an inverse relationship between motivation and language anxiety. It summarizes that students with low motivation tend to show low proficiency in speaking and undoubtedly anxiety increases. This could lead to poor proficiency, low self-esteem and low self confidence in order to learn and speak the target language. The conflict and tension that arises from this situation, leads to failure in language learning which results in language anxiety.

3. Method

A quantitative survey method was used to gather questionnaires from the sample. The questionnaires were distributed among the respondents to identify their level of language anxiety and level of motivation. Descriptive statistics; means and standard deviation are used to calculate the data of demographic variables such as gender, race, MUET speaking skill result and participants' language proficiency level.

3.1 Population and Sampling Method

The population of this study is pre-university students in form six colleges. There are about 77 secondary schools in Selangor which offer form six in their schools and there are about five form six colleges in Selangor. Two form six colleges were chosen by using the snowball method. There are about 366 form six students in both of

the schools. According to the Raosoft calculator of sampling, a minimum 188 participants were recommended to be used as the sample from the overall population. After filtering the survey result, the researcher managed to collect about 265 completed responses.

Stratified random sampling technique was used as a method of the study. Stratified random sampling technique requires the population to be separated into groups where the respondents are chosen according to those who have taken the MUET examination, based on the suggestion by the schools. Using a quantitative research method, the researcher distributed a survey questionnaire which was developed by adapting existing questionnaires by Pappamihel (2002) for language anxiety scale and motivation by Schmidt, Boraie, and Kassabgy, (1996). The pilot test has been done on 30 matriculation students, with Cronbach Alpha scored for English Language Anxiety Scale (ELAS) is .84 and Motivation Questionnaire is .71.

4. Results

This part presents the profile of the respondents. The demographic information here refers to the gender, race, MUET speaking skill result, and speaking proficiency level of the respondents.

4.1 Profile of the Respondents

Table 1 shows the frequency and percentage of the demographic information of gender, race, MUET speaking skill result, and speaking proficiency level of the respondents. The total valid responses were 265 which were collected from the pre-university students in Selangor. There were 38.9% (n=103) male and 61.1% (n=162) female. Certainly, the number of genders in this study was not equal. Most of the respondents were female. Meanwhile, in terms of races, there were 56.2% (n=149) Malays, 17.0% (n=45) Chinese and 26.8% (n=71) Indian respondents involved in the study. The data shows most of the respondents were Malays.

The finding of the study shows that 38.1% (n=101) respondents took MUET exam before or in session two June/2019, 18.9% (n=50) respondents took MUET exam in session three Sep/2019, 4.2% (n=11) took MUET exam in session Jan/2020, 4.2% (n=11) took MUET exam in session Feb/2020 and lastly 34.7% (n=92) took MUET exam in session March/2020 or after that. The number clearly shows that most of the respondents took the MUET session before or in session two June/2019.

The demographic data shows the frequency and percentage of the MUET speaking skill result of the MUET takers. There were 1.5% (n=4) respondents got band 1, 16.6% (n=44) respondents got band 2, 38.5% (n=102) respondents got band 3, 35.5% (n=102) respondents got band 4, 6.8% (n=18) respondents got band 5 and 1.1% (n=3) respondents got band 6. The number visibly shows that most of the respondents got band 3 in their MUET speaking skill test.

Finally, table 1 also shows the frequency and percentage of the proficiency level in speaking English of the respondents. The data shows that 5.7% (n=15) respondents speak very well, 42.6% (n=113) respondents are in good level, 41.9% (n=111) respondents are in okay level and 9.8% (n=26) respondents are not okay in speaking English. The finding obviously shows that most of the respondents are good in proficiency.

Table 1. Demographic of the respondents

		Frequency (N= 265)	Percentage %	Cumulative Percentage
Age	18	14	5.3	5.3
	19	158	59.6	64.9
	20	66	24.9	89.8
	21	27	10.2	100.0
Gender	Male	103	38.9	38.9
	Female	162	61.1	100.0
Class level	Lower six	7	2.6	2.6
	Upper six	258	97.4	100.0
Race	Malay	149	56.2	56.2
	Chinese	45	17.0	73.2
	Indian	71	26.8	100.0
MUET Session	Before or Session 2 June/2019	101	38.1	38.1
	Session 3 Sep/2019	50	18.9	57.0
	Session Jan/2020	11	4.2	61.1
	Session Feb/2020	11	4.2	65.3
	Session March/2020 or After	92	34.7	100.0

MUET speaking skill result	BAND 1	4	1.5	1.5
	BAND 2	44	16.6	18.1
	BAND 3	102	38.5	56.6
	BAND 4	94	35.5	92.1
	BAND 5	18	6.8	98.9
	BAND 6	3	1.1	100.0
How well do you speak in the English language?	Very well	15	5.7	5.7
	Good	113	42.6	48.3
	Okay	111	41.9	90.2
	Not okay	26	9.8	100.0

4.2 Level of English Language Anxiety in Speaking English

Table 2 shows a descriptive analysis of language anxiety level towards speaking English among pre-university students in Selangor. The finding of the study shows the levels of language anxiety were low and the scores for language anxiety ranged from 0.50 to 2.50 ($M=1.5802$, $SD=.42232$)

Table 2. English language anxiety level towards speaking English

	Minimum	Maximum	Mean	SD
English Language Anxiety	.50	2.50	1.5802	.42232

Table 3 shows the level of language anxiety based on the MUET speaking skill results acquired by the respondents. The mean score of Band 1 is ($M=1.6719$, $SD=.56912$), Band 2 is ($M=1.8437$, $SD=.35394$), Band 3 is ($M=1.6513$, $SD=.35611$), Band 4 is ($M=1.4461$, $SD=.40552$), Band 5 is ($M=1.2188$, $SD=.45690$) and lastly the mean score of Band 6 is ($M=1.5417$, $SD=.84394$). Based on the mean score, the table indicates that respondents who got Band 2 were having the highest level of language anxiety and the respondents who got Band 5 were having the lowest level of language anxiety towards speaking English.

Table 3. MUET speaking skill results

MUET speaking skill result	Mean	N	SD
BAND 1	1.6719	4	.56912
BAND 2	1.8437	44	.35394
BAND 3	1.6513	102	.35611
BAND 4	1.4461	94	.40552
BAND 5	1.2188	18	.45690
BAND 6	1.5417	3	.84394
Total	1.5802	265	.42232

4.3 Level of Motivation in Speaking English

Table 4 shows a descriptive analysis of motivation level towards speaking English among pre-university students in Selangor. The finding of the study shows the levels of motivation were moderate and the scores for the motivation ranged from 1.04 to 2.50 ($M=2.1210$, $SD=.20972$).

Table 4. Motivation level towards speaking English

	N	Minimum	Maximum	Mean	Std. Deviation
Motivation	265	1.04	2.50	2.1210	.20972

Table 5 shows the level of motivation based on the MUET speaking skill results acquired by the respondents. The mean score of Band 1 is ($M=1.9231$, $SD=.59997$), Band 2 is ($M=2.1040$, $SD=.20004$), Band 3 is ($M=2.1339$, $SD=.17300$), Band 4 is ($M=2.1379$, $SD=.21443$), Band 5 is ($M=2.0363$, $SD=.24942$) and lastly the mean score of Band 6 is ($M=2.1795571$, $SD=.22536$). The table certainly indicates that respondents who got Band 6 were having the highest level of motivation and respondents who got Band 1 were having the lowest level of motivation towards speaking English.

Table 5. Motivation level based on MUET result towards speaking English

MUET speaking skill result	Mean	N	Std. Deviation
BAND 1	1.9231	4	.59997
BAND 2	2.1040	44	.20004
BAND 3	2.1339	102	.17300
BAND 4	2.1379	94	.21443
BAND 5	2.0363	18	.24942
BAND 6	2.1795	3	.22536
Total	2.1210	265	.20972

4.4 Level of Intrinsic and Extrinsic Motivation

The finding in Table 6 below shows the scores for intrinsic and extrinsic motivation levels towards speaking English among pre-university students in Selangor. Both the intrinsic and extrinsic motivation levels were moderate, the scores for the intrinsic motivation ranged from 0.88 to 2.50 (M=2.1104, SD=.26886) and the scores for the extrinsic motivation ranged from 1.11 to 2.50 (M=2.1258, SD=.22566). However, in comparing intrinsic motivation and extrinsic motivation, the finding indicated that the respondents have less intrinsic motivation than extrinsic motivation. Overall, the result shows that the respondents slightly have more extrinsic motivation than intrinsic motivation

Table 6. Level of intrinsic and extrinsic motivation

	N	Minimum	Maximum	Mean	Std. Deviation
Intrinsic Motivation	265	0.88	2.50	2.1104	.26886
Extrinsic Motivation	265	1.11	2.50	2.1258	.22566

4.5 Relationship Between Language Anxiety and Motivation

The finding in Table 7 below shows the results of the correlation between language anxiety and motivation in speaking English. Pearson Product-Moment Correlation Coefficient (*r*) was used to analyse the data. The results indicated that there is a positive low significant correlation between speaking anxiety and motivation in speaking English language at .05 level of significance (*r*=.147*, *p*=.016). Hence, the research hypothesis was accepted.

Table 7. Relationship between language anxiety and motivation in speaking English

		Language Anxiety	Motivation	MUET speaking skill result
Language Anxiety	Pearson Correlation	1	.147*	-.372*
	Sig. (2-tailed)		.016	.000
Motivation	Pearson Correlation	.147*	1	.027
	Sig. (2-tailed)	.016		.659
MUET speaking skill result	Pearson Correlation	-.372*	.027	1
	Sig. (2-tailed)	.000	.659	

* Correlation is significant at 0.05 level

Besides, the results also indicated that there is a negative and low correlation between language anxiety and MUET speaking skill resulting in the speaking English language. The value shows that there is a significant relationship between language anxiety and MUET speaking skill at .05 level of significance (*r*=-0.372*, *p*=.000). In addition, the results also showed that there is a positive and negligible direction between motivation and MUET speaking skill resulting in speaking the English language. The value shows that there is no significant relationship between motivation and MUET speaking skill at .05 level of significance (*r*=0.027, *p*=.659). Hence, the hypothesis of the study fails to be rejected.

4.6 Difference Between English Language Anxiety and Motivation Based on Gender

The finding in table 8 below shows the result of the difference of English anxiety and motivation among the pre-university students based on gender. The independent t-test was activated to test the difference in gender based on English language anxiety, and as presented in table 8, the finding compares the means of one sample t-test. It shows there is no significant (*t*= -.901, *p*<.05) difference between mean of gender (male) score (M=-.04791, SD=.05315) and mean of gender (female) score (M=-.04791, SD=.05397) for language anxiety at 0.05 level of significance. Hence, the hypothesis of the study fails to be rejected.

The independent t-test was activated to test the difference in gender based on motivation and as presented in table 8, there is no significant difference ($t = .0892, p < 0.05$) between mean of gender (male) score ($M = .02355, SD = .02639$) and mean of gender (female) score ($M = .02355, SD = .02594$) for motivation at 0.05 level of significance. Hence, the hypothesis of the study fails to be rejected.

Table 8. Difference between English language anxiety and motivation based on gender

		F	Sig.	t	df	Sig. (2-tailed)	Mean	Std. Deviation
English Language Anxiety	Equal variances assumed (M)	.574	.449	-.901	263	.368	-.04791	.05315
	Equal variances not assumed (F)			-.888	208.535	.376	-.04791	.05397
Motivation	Equal variances assumed (M)	1.564	.212	.892	263	.373	.02355	.02639
	Equal variances not assumed (F)			.908	232.473	.365	.02355	.02594

*The mean difference is significant at 0.05 level

4.7 Difference Between English Language Anxiety and Motivation Based on Races

The finding in Table 9 below shows an analysis of variance (ANOVA) to measure the difference in races between English language anxiety and motivation among pre-university students in speaking English. As presented in Table 9, there is a significant difference ($F = 15.730, p < 0.05$) for English language anxiety on race at 0.05 level of significance. Mean of race (Malay) score ($M = 1.6657, SD = .37724$), mean of race (Chinese) score ($M = 1.6569, SD = .44066$) and mean of race (Indian) score ($M = 1.3521, SD = .42142$) for language anxiety. Therefore, the hypothesis of the study was rejected.

On the contrary, there is no significant difference ($F = 1.836, p < 0.05$) on race for motivation at level .05 of significance. As indicated in table 9, the mean score of race (Malay) is ($M = 2.1425, SD = .19766$), mean of race (Chinese) is ($M = 2.1009, SD = .20107$) and mean of race (Indian) score is ($M = 2.0888, SD = .23572$) for motivation. Overall, there is no significant difference, ($F = 1.836, p < 0.05$) between English language anxiety and motivation based on races. Hence, the hypothesis of the study fails to be rejected.

Table 9. Difference between English language anxiety and motivation based on races

	Race	N	Mean	Std. Deviation	F	Sig-F
English Language Anxiety	Malay	149	1.6657	.37724	15.730	.000
	Chinese	45	1.6569	.44066		
	Indian	71	1.3521	.42142		
	Total	265	1.5802	.42232		
Motivation	Malay	149	2.1425	.19766	1.836	.161
	Chinese	45	2.1009	.20107		
	Indian	71	2.0888	.23572		
	Total	265	2.1210	.20972		

*The mean difference is significant at 0.05 level

5. Discussion and Implications

The findings of the respondents' profile indicated the majority of pre-university students 61.1% (162) were female compared to male 38.9% (103). The data also revealed that the majority of the respondents were 56.2% (149) Malays, 17.0% (45) Chinese and 26.8% (71) Indian. The result of the findings showed that the level of English language anxiety in speaking English among pre-university students in Selangor was low. The scores for language anxiety ranged from 0.50 to 2.50 ($M = 1.5802, SD = .42232$). Based on the results, students who got Band 5 in MUET speaking exam have low level of language anxiety, while students who got Band 2 in MUET speaking exam have high level of language anxiety in speaking English. However, the overall result showed that the level of language anxiety is low in speaking English. This finding is consistent with a study by Cheng, Horwitz and Schallert, (1999); Miskam and Saidalvi (2019) who found the level of language anxiety among students is between low to moderate towards speaking English.

There are various reasons why some students score low on English language anxiety, for instance they tend to

feel shy and afraid of making mistakes while speaking English, or may be the thinking process of the students, the perceptions towards themselves on language learning and so forth. Since the respondents in this study are in their early adulthood stage, they tend to overcome the difficulties or have different mind-set towards themselves which allows them to have low language anxiety although they do not have good proficiency in speaking English. They do not give up on learning the language because they might have understood that without trying to improve, they will not improve their proficiency and fluency in language, which is very important for their career. Researcher believes that the students understand one of the English sayings, “learn from mistake” because without facing the challenges in a positive way, it will never allow the students to learn more and polish their knowledge. Though, it is not only in speaking English but mostly for everything a human does, they definitely need motivation. Without motivation, an individual will not be able to do things positively. Motivation is an important key factor for every human being to be a successful person. Concentrating on success does not always improve motivation, but concentrating on motivation does endorse success. Cheng et al., (1999) noted in their study that, self-confidence among the speakers have made the students to overcome language anxiety. Self-confidence is the belief in the abilities that they are capable of doing things successfully. On the other hand, when a student has a low level of self-confidence, he or she will be in stress because they might assume that they are incapable of doing things well. However, with a low level of language anxiety in speaking English, some of the students will become upset and this will weaken their speaking performance. Thus, it will influence their abilities in expressing their thoughts and opinions in the English language (Cagatay, 2015) and these can affect their willingness to communicate (Wu & Lin, 2014).

Based on the findings, both intrinsic and extrinsic motivation levels were moderate in speaking English language yet extrinsic motivation in students to speak English was slightly higher than intrinsic motivation. This result was supported by Hong and Ganapathy (2017) and Wu et al., (2014) that students are highly motivated extrinsically (instrumentally) than intrinsically (integratively) in speaking English language. Hong and Ganapathy (2017) added that technically, instrumental motivation has a greater impact on language learning and speaking. The findings showed that there is a significant low relationship between language anxiety and motivation towards speaking English language among pre-university students. This study result was inconsistent with the finding by Liu and Chen (2015), who reported no significant correlation between language anxiety and motivation. The study indicated the students who are likely to experience high levels of anxiety tend to be less motivated in the learning and speaking process. According to a previous study by Djafri and Supra (2018) motivation does not have a substantial impact on foreign language anxiety. Past studies have suggested that the two factors are related; some have found a negative link between motivation and language learning anxiety (Gardner & MacIntyre, 1993), while others have discovered a potential positive link between highly motivated students and high levels of anxiety (Kitano, 2002).

Evidently, there is a substantial link between speaking anxiety and motivation to speak English. Therefore, it is necessary for language teachers as well as learners to take actions to alleviate anxiety levels, since anxiety turned out to be associated with students’ performance in English (Meihua & Wenhong, 2011). Setting realistic and attainable goals, creating a relaxing classroom environment, sharing language learning experiences and feelings, giving learners more opportunities to use the language, frequently encouraging and praising learners, and so on have all been suggested as effective ways to reduce anxiety. Nonetheless, because the results of the analyses revealed that fear of being adversely assessed might be a good predictor of English performance in the current study, language teachers and students should exercise caution when dealing with anxiety.

According to the findings of the study, there is no significant difference in English language anxiety based on gender. This result was in contrast with the study by Cagatay (2015) and Berhane (2016) that showed a significant difference between these two variables, whereby the male students tend to be less anxious compared to female students that are found to be more anxious in speaking English. However, the current findings of the study is in line with the study by Aizpuru (2020) that found no significant difference in foreign language classroom anxiety between males and females, and also a study by Shi and Liu (2006) that reported there isn't much of a difference between male and female Chinese EFL students. The results showed that the development of anxiety is not different between both genders.

On the contrary, the current study results revealed that there is a significant difference of English language anxiety based on races and no significant difference on motivation based on races. Many researchers have found that language anxiety varies by race and skill level, although the evidence for specific connections between proficiency levels and foreign language anxiety is equivocal (e.g., Shi et al., 2006; Marcos-Llinas & Garau, 2009). For example, in Shi et al., (2006) study of EFL learners in China among Chinese students, more proficient students tended to be less anxious. So it is difficult to measure the races/ethnic itself, as English language anxiety

is much related with the proficiency of the students regardless of the races they belong to. In addition, in Marcos-Llinas and Garau's (2009) study of Spanish learners in the U.S., advanced learners regardless of race showed higher levels of anxiety than beginning and intermediate learners. There are various reasons and differences in terms of the context of the study that need to be extensively researched in terms of types of races and motivation. Thus, races and social belonging or cultural integration is another issue that needs to be addressed in second/foreign language education.

6. Conclusion

In conclusion, the results of this study will help researchers get a better understanding about language anxiety and motivation of Malaysian pre-university students who are studying English as a second language. While there is no significant difference in English language anxiety by gender, the findings of this study revealed that there is a substantial difference in English language anxiety by race. This provides useful information for policymakers in determining the most effective method of language learning and encouraging Malaysian pre-university students to speak English. It is hoped that the findings of this study would help the Ministry of Education in focusing primarily on the importance of students in mastering a high level of fluency in English language. Thus, assisting policymakers in developing a curriculum specification that will ensure language learning effectiveness. Malaysian students must be prepared with the essential information, abilities, and attitude toward learning English if they wish to become global players in today's highly competitive worldwide market.

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