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Foreword

Assalamualaikum wbth, and warm greetings to all.

With utmost delight, I extend a cordial welcome to all participants of the second Postgraduate Conference in Education 2023 (POCE 2023) - an event of profound academic significance. As the Chair of the School of Education, I am honored to address you on this momentous occasion.



Building upon the success and achievements of the first postgraduate seminar on education, we are once again gathered at this conference to delve into the theme of “Sustainable Education in the Digital Age: Challenges and Opportunities.” This theme resonates with the ever-evolving landscape of education, shaped by rapid digital advancements, thereby necessitating sustainable practices within the educational domain, especially in a post-pandemic era.

POCE 2023 serves as a platform that seeks to foster a vibrant community of postgraduate researchers. Through this conference, we aim to facilitate meaningful interactions, encourage knowledge exchange, and promote collaboration among participants. The knowledge-sharing process is pivotal as it paves the way for collective contributions to the advancement of education while effectively addressing the multifaceted challenges posed by the digital age.

Through POCE, we encourage postgraduate students from the School of Education to embrace this opportunity to showcase their research study projects. By actively engaging in constructive dialogues with peers and academic scholars, students can enrich the academic discourse with their unique insights and diverse perspectives. At the same time, we aim to elevate the rigor and quality of the research work presented at the conference by empowering the participants to refine their ideas, strengthen their methodologies, and address educational issues in a systematic and innovative manner.

I would like to take this opportunity to express my sincere gratitude to all the keynote speakers and the organizing committee of POCE 2023, particularly the Chairperson – Dr. Farahwahidah binti Abdul Rahman for her invaluable contributions.

Prof. Dr. Noraffandy bin Yahaya

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Seminar Schedule

TIME	DESCRIPTION
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9.00 am	Opening Ceremony of the POCE2023 <ul style="list-style-type: none"> ▪ Doa Recitation ▪ Opening Address from the Chair, School of Education ▪ Welcoming Speech by the Organizing Chair ▪ Montage
10.00 am	Speaker I : Dr Abdulmumini Inda
11.30 am	Break
11.45 am	Speaker II : Assoc. Prof. Dr. Zaleha Abdullah
1.00 pm	Lunch Break
2.00 pm	Paper Presentations on https://humanities.utm.my/poce2023/presentation/ <ul style="list-style-type: none"> ▪ Digital Learning ▪ New Frameworks in Teaching & Learning ▪ Learning Assessment ▪ Quality Education and Community Wellbeing ▪ Strategic Collaboration in Education ▪ Institutional Ecosystem, Governance, and Education Policy
5.00 pm	Closing <ul style="list-style-type: none"> ▪ Announcement of Awards for Best Presenter and Best Paper ▪ Closing Speech by the Organizing Chair

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Navigating the Challenges and Measures in Remote Teaching for International Students

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Abstract

With the global pandemic outbreak, remote teaching has become a new challenge for international students. This article explores the challenges international students faced in remote teaching and provides measures and recommendations. We discussed in-depth the challenges brought about by remote teaching, including technological challenges, language and communication barriers, cultural adaptation, social isolation, and time zone differences. To address these challenges, we propose effective measures and recommendations for each challenge. This research emphasizes the importance of adapting educational practices to meet the needs of diverse student populations, promoting equity, and enhancing the overall learning experience for international students. This study hopes to help international students to overcome the difficulties of remote teaching and promote their learning and development. This study also contributes to the existing knowledge on supporting international students' learning and well-being in a global crisis.

Keywords: challenges, remote teaching, international students, online learning, COVID-19

Abstrak

Dengan keketusan wabak pandemik di seluruh dunia, pengajaran jarak jauh telah menjadi cabaran baharu bagi pelajar antarabangsa. Artikel ini meneroka cabaran yang dihadapi oleh pelajar antarabangsa dalam pengajaran jarak jauh dan menyediakan langkah penyelesaian sebagai cadangan. Kami membincangkan secara mendalam cabaran yang dibawa oleh pengajaran jarak jauh, termasuk cabaran teknologi, halangan bahasa dan komunikasi, penyesuaian budaya, pengasingan sosial dan perbezaan zon masa. Untuk menangani cabaran ini, kami mencadangkan langkah yang berkesan untuk setiap cabaran. Artikel ini menekankan kepentingan menyesuaikan amalan pendidikan untuk memenuhi keperluan populasi pelajar yang pelbagai, menggalakkan ekuiti, dan meningkatkan pengalaman pembelajaran keseluruhan untuk pelajar antarabangsa. Artikel ini berharap dapat membantu pelajar antarabangsa untuk mengatasi kesukaran pengajaran jarak jauh dan menggalakkan pembelajaran dan perkembangan mereka. Artikel ini juga menyumbang kepada pengetahuan sedia ada untuk menyokong pembelajaran dan kesejahteraan pelajar antarabangsa dalam krisis global.

Kata kunci: cabaran, pengajaran jarak jauh, pelajar antarabangsa, pembelajaran secara talian, COVID-19

1.0 INTRODUCTION

The coronavirus (COVID-19) was designated a global pandemic on March 12, 2020, and social distancing measures were adopted in several regions to fight illness transmission. Many governments throughout the world have opted to close schools across the country to avoid or restrict the spread of the virus, which has hampered the learning of millions of adolescents and young people (Ferri & Guzzo, 2020). Higher education institutions (HEIs) are being compelled to transition totally to online learning environments, raising several concerns regarding the quality of education they will give to their students (Kanwar & Carr, 2020; Kidd & Murray, 2020). Many HEIs have converted to remote teaching mode to provide educational continuity, particularly for international students who live far away from the institutions.

Therefore, understanding and addressing the challenges international students face through distance learning during the pandemic has become critical.

Educational institutions are experiencing unprecedented problems as a result of the worldwide pandemic, and distance learning has evolved. The utilization of technology and online platforms to teach and learn when students and teachers are in different locations is known as distance learning. It has grown in importance as a means of protecting students' educational rights and ongoing education. The pandemic's emergence has forced the temporary closure of several schools and educational institutions to protect the health and safety of learners as well as teachers. Because of this abrupt transition, schools have been obliged to implement a remote teaching style to ensure that students can continue studying from home. Through online video conferencing, e-learning platforms, interactive tools, and learning materials, distance learning provides a flexible teaching style that allows teachers to stay connected and involved with students.

The backdrop of remote education is the advancement of science and technology, as well as the widespread use of digital education technologies. Distance teaching has been feasible due to the expansion of the Internet and mobile technologies, which have offered students a broader choice of learning alternatives. Educational institutions and teachers are progressively realizing the potential of remote teaching, which may overcome time and distance limits and allow students to obtain an education at any time and in any location. While distance learning can help with pandemics and other catastrophes, it also has certain drawbacks. Remote teaching has problems such as time zone disparities, internet connectivity concerns, technical equipment and expertise requirements, and restrictions in interactive and personalized learning (Ferri, Grifoni, & Guzzo, 2020).

Distance learning, on the other hand, has created new options in the sphere of education. It encourages educational innovation and model change, as well as the creation of online educational materials and digital learning technologies. Remote teaching may help educational institutions and teachers deliver personalized learning experiences, encourage student involvement, and foster the development of autonomous learning capacities. Finally, as a flexible teaching method, distant learning has coped with the challenge of educational facilities being closed during the epidemic and has generated major changes in the field of education. It not only allows students to continue studying, but it also presents difficulties and possibilities for educational institutions and teachers, as well as encouraging innovation and advancement in education.

The purpose of the article is to investigate the difficulties encountered by international students while receiving remote teaching during the pandemic and to recommend appropriate responses. We seek to assist educational institutions and teachers in improving teaching quality, better meeting the learning needs of international students, and promoting international students' academic achievement by conducting in-depth analyses of these difficulties and delivering effective solutions.

2.0 REMOTE TEACHING AND ONLINE LEARNING

The coronavirus (COVID-19) pandemic has swept the globe, affecting all facets of human life, from a decline in industrial production to a reorganization of academic calendars in all educational institutions worldwide. Higher education stakeholders and administration have no choice but to use Internet technology to enable the continuance of online learning for academic activities in all schools worldwide (Demuyakor, 2020). Online or distant education requires a delivery strategy since students are geographically separated from lecturers (Wang et al., 2013; Wilde & Hsu, 2019). During the country's lockdown, Hodge et al. (2020) proposed the term 'emergency remote teaching' for the style of instruction. Emergency Remote Teaching (ERT) is the temporary movement of instructional delivery to an alternate delivery

channel as a result of a crisis, as opposed to an experience that was planned from the start and meant to be delivered online (Hodge et al., 2020). It entails teaching or education utilizing a full distance learning solution instead of a face-to-face or hybrid course structure, which will continue after the crisis or emergency has passed. The rushed approach necessary for emergency education may diminish the quality of the courses available. If done well, a whole curriculum creation project might take several months. The major purpose in this scenario is not to reestablish a healthy educational environment, but to offer interim teaching and learning assistance that is swiftly built and consistently given during emergencies or crises. They claim that ERT is a "forced" move to online teaching or learning, although the crisis originally planned to provide face-to-face, hybrid, or blended forms. According to Bozkurt and Sharma (2020), "While distance education has always been a flexible and alternative option for learners, emergency distance teaching is an obligation" (p. 11).

Remote teaching and online learning can be coupled to produce a more comprehensive and successful educational experience. The ability to learn from anywhere, at any time; the potential for significant cost savings; avoiding commuting on crowded buses or trains; flexibility in choosing courses; and time-saving opportunities have all been highlighted in the relevant literature (Nagrata, 2013). As a consequence, during a global health crisis, online learning becomes increasingly vital, allowing students to stay connected with their peers and lecturers while still keeping up with homework (Ferri, Grifoni, & Guzzo, 2020). Utilise online learning platforms and teaching technologies to aid in teaching communication and learning management during remote learning. Create multimedia instructional tools that allow students to learn at their speed and on their own time. For distant real-time conversations, Q&A, and group activities, use online meeting tools and real-time interactive platforms. Virtual labs and simulation tools may be used to allow students to undertake experiments and practical activities in disciplines that need experimentation and practice. To enhance learning and networking, create online discussion boards or groups where students may share ideas, ask questions, and engage with peers. This is possible with online learning courses, study aids, and personalized study schedules. Combining remote teaching with online learning allows one to take full advantage of the benefits of technology and the Internet to deliver a more flexible, personalized, and engaging learning experience.

Shim & Lee's (2020) reported the advantages and disadvantages of distance learning as in Table 1.

Table 1 Advantages and disadvantages of distance learning

Advantages	Disadvantages
<ol style="list-style-type: none"> 1. Provide a free learning environment that emphasizes flexibility, the psychological comfort of not having to compete for a seat, and can always be with family. 2. Time-saving because reduces commuting time, school travel time, and recess time. 3. Improved discussion when students and teachers chat frequently through chat rooms. A virtual environment allows them to talk comfortably with each other without worrying about what others might think of them. 	<ol style="list-style-type: none"> 1. Hysteresis and desynchronization of the teacher's voice from the material during virtual class. 2. Hard for passive students to share ideas. 3. Reduce concentration on the class if the virtual class is conducted for a long time. 4. Practical or experimental limitations reduce proper learning of a practical subject.

-
4. Classes can be recorded to improve understanding and academic achievement.
-

As can be seen, emergency remote teaching provides the benefits of flexibility, extensive materials, and personalized learning, but it also has drawbacks such as technological constraints, a lack of engagement, and high self-management needs. According to unique scenarios and student demands, educational institutions and lecturers can combine benefits and overcome obstacles to create a high-quality remote teaching experience.

We may better comprehend the effect and problems of diverse teaching modalities if we understand the differences between remote teaching, online courses, and distance education, how remote teaching and online courses are integrated, and how their advantages and drawbacks are analyzed.

3.0 CHALLENGES OF REMOTE TEACHING FOR INTERNATIONAL STUDENTS

Many nations have implemented strong social restrictions, such as social separation, teleworking, and regional lockdowns, to prevent the spread of the coronavirus (Kaur et al., 2021). As a result, educational institutions worldwide have been badly impacted, forcing them to implement distance learning (Gillis and Krull, 2020). There are several concerns about the abrupt move to online education, and depending on synchronized attendance is especially difficult in remote teaching due to technological, connection, accessibility, and time zone challenges (Schlesseman, 2020).

The following summarizes the obtained challenges based on previous references.

1. Technological Challenges: Online learning relies on technology gadgets and the internet in general, and teachers and students with inadequate internet connections may be denied access to remote education. The reliance of remote teaching on technical gadgets and the provision of equipment provides a significant issue for institutions, teachers, and students (Adedoyin & Soykan, 2023).

2. Language and Communication Barriers: The language barrier is perhaps the most critical and prevalent issue for most international learners (Mori, 2000). International students who are not native English speakers may suffer language challenges that interfere with their understanding of course topics, participation in discussions, and efficient communication with instructors and classmates. This can affect their overall learning results and participation in distant classes.

3. Cultural Adaptation: Foreign students report a bigger cultural gap between themselves and the host society and face more sociocultural challenges (Searle & Ward, 1990; Ward & Kennedy, 1993a). In a distance learning setting, international students may struggle with cultural adaptation. They may struggle to negotiate cultural differences such as communication styles, academic expectations, and classroom customs, which might have an impact on their engagement and integration into the virtual learning community.

4. Social Isolation: Peer engagement and teacher-student interaction are essential for learning (Kamble et al., 2021). International students may experience emotions of isolation and loneliness as a result of their physical separation from friends, lecturers, and campus services.

5. Time Zone Differences: Teachers and students may face social and technological obstacles as a result of time zone changes (Purwanto, 2020; Lemay et al., 2021; Naddeo et al., 2021). International students learning from various time zones may have difficulty synchronizing their calendars with live classes, obtaining real-time help from lecturers, and engaging in group discussions or collaborative projects.

4.0 MEASURES OF REMOTE TEACHING

Distance learning has been the primary method for international students to obtain educational materials throughout the epidemic. This strategy, however, poses significant obstacles for international students. Our comments on the highlighted obstacles and issues serve to justify the following recommendations for action to solve the identified challenges.

1. Technological Challenges: Before giving distance education courses, teachers should devote adequate time to learning technologies and teaching practices to improve the classroom learning experience for students as well as teachers (Roth et al., 2020).

2. Language and Communication Barriers: Course records and language assistance software are most valuable to students. Students can relive lectures by watching course recordings, and translation technologies can assist them overcome language hurdles, enhancing learning outcomes (Zhao & Xue, 2023). Furthermore, Weldon et al. (2021) proposed that classroom recordings offer considerable benefits for students to study the lecture again to better their knowledge.

3. Cultural Adaptation: Students and faculty should be aware of the increasing value of intercultural mobility and the special significance of the effective integration of international students in new environments. For example, the school may invite foreign students to introduce the characteristics of foreign education. At the beginning of the semester, participate in online activities organized by the school, such as the orientation meeting. Get to know other students from different cultural backgrounds, including local students, etc. You can try to talk, or at least have the opportunity to speak a foreign language (Baklashova & Kazakov, 2016).

4. Social Isolation: Shea and Armitage (2000) provided some examples of recommended practices that exist in US colleges and universities: pre-registration services, mental health education, crisis services, self-service, referral to disability services, and counseling services. University administrators also need to be vigilant in keeping students informed about available student services (Barr, 2014).

5. Time Zone Differences: Teachers should aware of using synchronization tools across time zones, such as live online lectures or chat room sessions. Keeping the process moving in an asynchronous environment allows all live sessions to be recorded for later return visits, including lectures, live teacher comments, and live Q&A interactions (Dringus&Sciigliano,2001). If you plan to chat during office hours, give everyone a chance to participate and schedule two or three office hours chats a day. (Lieberlein, 2000).

5.0 CONCLUSION

This article focuses on the numerous hurdles that international students confront, such as technical difficulties, language limitations, cultural adaptation issues, motivation and engagement issues, social isolation, and time zone disparities. Each difficulty brings distinct challenges that necessitate specialized methods and assistance.

Through a comprehensive analysis of these challenges, this study proposes practical measures to address each issue. By providing technological support, language assistance, cultural orientation, interactive teaching strategies, social support networks, and flexibility in course delivery, educational institutions can create a more inclusive and supportive learning environment for international students.

Under this new teaching model, HEIs must pay closer attention to the unique needs of international students and actively provide support and solutions to ensure that they have a positive learning experience, complete their studies successfully, and adapt to the new learning environment. This study sheds light on the difficulties experienced by international learners during the COVID-19 epidemic, particularly in the context of remote teaching and online courses. This study adds to the current information on helping foreign students' learning and well-being in a global crisis by identifying and addressing these problems.

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Animation-based learning: Implementation, strategies and impact towards English language learners

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Abstract

Animation-based learning is an educational approach that uses animated content as a core component of the learning process. Animation-based learning can help learners to understand by simplifying and breaking down complex learning content. It can also support active learning, increase interactivity and be an active part of the learning process for the learner. Based on the benefits of animation-based learning, it has emerged as a promising approach to enhancing the English language learning experience. However, not much research has been done on the impact of animation-based learning on language learning. This concept paper is an exploration of the implementation, strategies and impact of animation-based learning for English language learners, with the aim of understanding how animation-based learning can effectively support language acquisition and, in this case, enhance learning outcomes.

Keywords: Animation-based learning, educational approach, learning process, language learning

Abstrak

Pembelajaran berasaskan animasi adalah pendekatan pendidikan yang menggunakan elemen animasi sebagai komponen utama dalam proses pembelajaran. Pembelajaran berasaskan animasi dapat membantu pelajar memahami dengan mempermudah pembelajaran yang kompleks. Ia juga dapat mendukung pembelajaran aktif, meningkatkan interaktiviti, dan meningkatkan penglibatan aktif dalam proses pembelajaran pelajar. Melihat kepada manfaat pembelajaran berasaskan animasi, pendekatan ini menjanjikan pengalaman pembelajaran yang baik bagi pembelajaran bahasa Inggeris. Namun, kajian mengenai pembelajaran berasaskan animasi terhadap pembelajaran bahasa Inggeris ini masih belum banyak dilakukan. Kertas konsep ini akan membincangkan tentang implementasi, strategi, dan kesan pembelajaran berdasarkan animasi bagi pembelajaran bahasa Inggeris, dengan tujuan memahami bagaimana pembelajaran berdasarkan animasi dapat secara efektif membantu meningkatkan hasil pembelajaran mereka.

Kata kunci: Pembelajaran berdasarkan animasi, pendekatan pendidikan, proses pembelajaran, pembelajaran bahasa Inggeris

1.0 INTRODUCTION

Animation-based learning involves the use of animated videos or graphics to demonstrate instructional content. This approach is particularly effective in visualizing complex concepts, demonstrating processes and engaging learners. Animation can make abstract or difficult topics easier to understand by presenting them in a visual and simplified manner. However, the effectiveness of animation in teaching depends on a variety of factors, including the quality of the animation, the complexity of the content, and the individual student's learning preferences, which is in line with Clark and Meyer's theory of multimedia learning awareness. Several studies have shown that animation-based learning can improve motivation and learning outcomes, but more research is needed in this area. In language learning, animation-based learning can use animation. Animated stories or dialogues can provide a more engaging way for learners to practice speaking skills and comprehension. This paper will

discuss the implementation of animation-based learning as a educational approach, strategies and impact on language learning.

2.0 LITERATURE REVIEW

Animation-based learning

Animation-based learning (ABL) is an animation-based educational approach that facilitates the learning process through the use of animation and related multimedia materials. In animation-based learning, educators utilize visual and auditory elements, such as animation and video, to present instructional content in a lively, graphic, and entertaining manner in order to motivate students and enhance learning.

In 1975, King conducted an early study on the effectiveness of animation as a learning tool (Norhayati Che Hat, 2017). According to King, animation is not suitable for comprehension and conceptual learning, but is more suited to tasks involving time and movement. Mayer and Moreno (2002) studied the integration of animation in multimedia teaching aids, and found that in comparison to traditional techniques that there was a high degree of consistency in the use of animation in the learning process. Their study emphasized that multimedia presentations including animation make the learning process more meaningful and effective.

In recent years, studies have demonstrated the effectiveness of animation-based learning. Zeeshan (2018) discussed the use of multimedia content including animation in the learning process. He stated that multimedia learning involves the use of a variety of media content such as text, images, video, audio, and animation, which is highly beneficial and relatively necessary in the current technological era. This paper proposes an approach that combines the principles of cognitive multimedia learning with animation-based learning techniques. The authors argue that 3D animation techniques can reach a level of sophistication through which strong educational messages and lessons can be portrayed.

Ridha (2022) participated in a study using animated videos to enhance vocabulary learning by investigating the effects of animated videos on vocabulary learning. The study hypothesized that students taught with animated videos would show significant improvement in vocabulary acquisition or learning outcomes. The paper concluded that animated videos can facilitate the learning of English as a foreign language and contribute to the growing body of knowledge based on video-based learning. Zumbach (2022) investigated the effects of different modes of multimedia learning on attributional outcomes, and he concluded that audio animation reduces cognitive load compared to text-based animation.

These studies suggest that animation and multimedia learning can be effective tools for learning, with the potential to enhance learning outcomes and reduce cognitive load.

Cognitive theory of animation-based learning

Ruth Colvin Clark and Richard E. Mayer are known for their work on the cognitive theory of multimedia learning, which is closely related to cognitive load theory. It focuses on understanding how cognitive processes are affected by the use of multimedia in the learning environment. It explores how the combination of visual and verbal information affects cognitive load and information processing in learning, recognizes the importance of optimizing the design of multimedia materials to support learners' cognitive processes and maximize their engagement and comprehension (Liu, Jiang, 2018).

Clark and Mayer proposed some evidence-based principles for the design of multimedia instruction aimed at managing cognitive load and improving learning outcomes. These principles aim to reduce extrinsic cognitive load (unnecessary mental work usually caused by poor instruction), manage intrinsic cognitive load (the mental work required for the task itself),

and optimize species cognitive load (the mental work used to build schemas and transfer information to long-term memory). In terms of animation-based learning, many researchers have discussed and demonstrated that animation can encourage and enhance the ability of learners and viewers to comprehend and access information, especially when used in the context of CTML principles.

In the instructional design of an animation-based learning system, it is important to adhere to the cognitive load theory. Cognitive load theory suggests that learners have a limited working memory for processing new information. In the process of multimedia learning, there are three types of load defined as -germane, intrinsic, and extraneous. Germane load is defined as the mental effort that the learner puts in the learning process when confronted with the learning material. Intrinsic cognitive load is the inherent difficulty based on the type of multimedia instruction (Liew, 2017).

Choi (2021) also discussed the cognitive load theory and its three components. He argues that proper measurement of learners' cognitive load can provide useful diagnostic information for developing effective learning systems and providing customized instructional techniques. Curum, in his study on m-learning systems, discusses the use of different multimedia assets (text, images, sound, and animation) to provide information-rich content. He argues that the use of casual, animated, and interesting interfaces can make learning enjoyable and motivate learners.

In animation-based learning, managing cognitive load is critical to effective learning. Animation can reduce extraneous cognitive load by presenting information in a more engaging and understandable way. However, the complexity of the design and content of the animation can also affect the intrinsic and germane cognitive load. Therefore, animation-based learning materials must be carefully designed to optimize cognitive load and enhance learning outcomes. In conclusion, the integration of CTML and animation-based learning can provide an effective way to improve learning outcomes. However, it is important to manage cognitive load effectively for optimal learning outcomes.

Animation-based learning in language study

Animated instruction is used in a variety of disciplines and educational areas, including language learning, science, math, and history. In language learning, animation teaching can help students improve their listening, speaking, reading and writing skills. By watching and imitating language expressions in animation, students can better master language elements such as pronunciation, intonation, and voice inflection.

Christopher discusses the use of multimedia in foreign language courses and the effectiveness of feedback in distance learning and language learning. A study at Carnegie Mellon University, USA examined the impact of different forms of digital picture books on children's language learning. The results showed that the use of timely animated feedback improved children's memory levels and attentional regulation (Yang, Yuanqui, 2019). Not only English language learning, but the impact of animation teaching on Arabic language learning is also positive. Incorporating animation techniques in language teaching aids can improve students' performance, improve the learning environment, and increase students' motivation to learn. (Hat, 2017).

Language environment plays a vital role in the acquisition and learning of English. Animation integrates text, graphics, video images, movement and sound to provide learners with multi-sensory and multi-expression language stimulation, which can effectively stimulate learners' participation in activities (Zhu Panpan, 2019). The learning environment created by animation makes the learning task intuitive, participatory, diversified, flexible and enjoyable, which is in

line with the law of children's psychological development and is easy to stimulate children's interest (Cheng Linglin, 2022).

3.0 DISCUSSION

Implementation of animation-based learning

Based on the articles reviewed, it can be seen that animation-based learning is not singularly just using animation, but rather is used as the primary learning ingredient and supplemented with other supports, or as instructional support, which is why it is more commonly referred to as the vowel of multimedia learning.

Animation-based learning can be effectively implemented for ELLs in a variety of ways. For example, integration into the English curriculum: Animation can be integrated into the English curriculum as an aid to support language learning. It can be used with textbooks, online platforms, or language learning software to provide visual and auditory aids to enhance the learning experience. Interactive language learning apps are also good options. English learning apps can utilize animation to create an interactive and engaging experience for learners. These applications can include animated characters, dialogues and scenarios that allow learners to practice English listening, speaking, reading and writing skills.

Animated Learning Strategies for English learners

Animation-based learning relies on Meyer and Clark's Cognitive Theory of Multimedia Learning (CTML), which has several basic principles, namely dual processing channels, limited cognitive capacity, reduced cognitive load, and multimedia principles. According to these principles, there are several strategies for animation-based learning when targeting English learners.

Visualizing linguistic concepts: Animation can be used to visualize abstract linguistic concepts such as grammar rules, sentence structures and vocabulary. Animated visuals can help learners understand and remember these concepts more effectively, making language learning more accessible and engaging.

Contextualization of language use: Animation-based learning provides contextualized examples of language use. By showing animated scenes and dialogues, learners can observe how English is used in real-life situations, deepening their understanding of language usage, idioms and cultural nuances.

Provide interactive language practice: Animation promotes interactive language practice for English learners. Through animated characters and interactive exercises, learners can engage in dialogues, role-plays and language games to practice their speaking and listening skills in a dynamic and engaging way.

Impact of animation-based learning on English learners

The use of animation pedagogy in English language learning has a positive impact on learners' language proficiency and overall learning outcomes:

Improvement of language comprehension: Animation helps learners visualize and understand complex language structures and concepts. By presenting visual cues, animated characters and contextual examples, learners can better understand English language usage and improve comprehension.

Improve language retention: Animation-based learning aids memory retention because it creates memorable visual and auditory experiences. By visually representing language

elements and providing engaging animated content, learners can retain and memorize English vocabulary, grammar rules and language patterns more effectively.

Increase motivation and engagement: Animation captures learners' attention and creates an engaging learning environment. The interactive and visually appealing nature of animated learning enhances learners' motivation to learn English language content, which in turn improves learner engagement and learning outcomes.

Cultural Understanding: Animation-based learning exposes English learners to different cultural contexts. Through animated stories and scenes, learners can gain a deeper understanding of the culture, customs and social norms of English-speaking countries, promoting cross-cultural understanding and communication skills.

However, it is important to recognize the limitations of the existing research. There are fewer studies that specifically investigate the effects of animation on language learning, and even fewer that narrow down to English language learning. More research is needed to investigate the specific effects of animation-based learning on English language learning. There is also a lack of in-depth inquiry into the effectiveness of animation teaching strategies in practical application on English language learning. This is where researchers are unable to determine the effectiveness of existing strategies as well as applications when it comes to long-term learning.

4.0 CONCLUSION

Animation-based learning has a positive impact on English language learners. As a teaching tool, animation can help learners better understand complex linguistic concepts and enhance their language proficiency and learning outcomes through visualization and simplification. The implementation of animation requires full compliance with Mayer and Clark's cognitive multimedia learning theory, optimizing cognitive load and providing diverse learning strategies. However, there are still some limitations in the existing studies, such as the lack of research on the long-term effects on English learning. Therefore, further research is needed to verify these findings. Overall, animation teaching provides an interesting and effective way for English learners to learn, which helps to improve their language proficiency and learning outcomes.

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Adopting Problem-Based Learning for Building Technology Program in Higher Educational Institutions of Developing Countries

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Abstract

Problem-based learning (PBL) is still an emerging paradigm of educational instruction in the current era. Nonetheless, PBL has been effectively adopted in many developed countries like United State of America (USA), Japan and China. Despite increase in graduate lack of skills, there are still restraints and challenges to adopting this student-centered instructional approach for Building Technology (BT) program in many Higher Educational Institutions (HEIs) of developing countries including Nigeria, Indonesia, Bangladesh and Algeria etc. PBL is a student-centered approach that inspires students to study independently and apply their skills in solving real-world problem in an appropriate and realistic context. Few literatures have explored the adoption of PBL in HEIs in developing countries. Therefore, this paper provides an overview of PBL currently in HEIs of developing countries and convincing evidence for its effectiveness in instruction. The paper offers the basis for adopting PBL in BT instruction in HEIs of developing countries. Finally, this paper also describes potential model of implementation, identifies some challenges facilitators may encounter during the application and provide specific recommendations for enhancing the PBL adoption in HEIs of developing countries.

Keywords: Adopting, PBL, BT, HEIs

Abstrak

Pembelajaran berasaskan masalah (PBL) masih merupakan paradigma pengajaran pendidikan yang muncul pada era sekarang. Walaupun demikian, PBL telah diadopsi secara efektif di banyak negara maju seperti Amerika Syarikat (USA), Jepun dan China. Walaupun peningkatan kekurangan kemahiran siswazah, masih ada kekangan dan cabaran untuk menerapkan pendekatan instruksional berpusatkan pelajar ini untuk program Teknologi Bangunan (BT) di banyak Institusi Pendidikan Tinggi (HEI) negara-negara membangun termasuk Nigeria, Indonesia, Bangladesh dan Algeria dll. PBL adalah pendekatan berpusatkan pelajar yang memberi inspirasi kepada pelajar untuk belajar secara bebas dan menerapkan kemahiran mereka dalam menyelesaikan masalah dunia nyata dalam konteks yang sesuai dan realistik. Beberapa literatur telah meneroka penggunaan PBL dalam HEI di negara-negara membangun. Oleh itu, makalah ini memberikan gambaran keseluruhan PBL yang kini ada di HEI negara-negara membangun dan bukti yang meyakinkan mengenai keberkesanannya dalam pengajaran. Makalah ini menawarkan dasar untuk mengadopsi PBL dalam instruksi BT di HEI negara-negara membangun. Akhirnya, makalah ini juga menerangkan model pelaksanaan yang berpotensi, mengenal pasti beberapa cabaran yang mungkin dihadapi oleh fasilitator semasa aplikasi dan memberikan cadangan khusus untuk meningkatkan penggunaan PBL di HEI negara-negara membangun.

Kata kunci: Mengadopsi, PBL, BT, HEI

1.0 INTRODUCTION

Higher educational institutions (HEIs) in developing countries are immeasurable intellectual organizations. They imparts in-depth knowledge and understanding in order to develop in the students the opportunities for lifelong learning, new frontiers of knowledge and upgrading their knowledge and skills from time to time but base on societal needs (Aithal, Rao et al. 2015). HEIs comprises not only universities and colleges but also other various professional institutions that provides teaching and learning, human resource management, financial management and

research and innovation (Telukdarie and Munsamy 2019). The 4th industrial revolution (4IR) is driving global economy and associated development including HEIs, which have evolved into technological centers through the delivery of life long skills for the future. HEIs invariably affect the understanding, capability, and potentials of the educated person (Whalley, France et al. 2021). Therefore, the system of delivery at HEIs ought to be modified to deliver services that are 4IR savvy, more importantly; the processes must be 4IR compliance to deliver lifelong skills to building technology undergraduate. The presence of student-centered learning in teaching and learning results in a robust collaborative self-directed learning (Kaput 2018) and learner involvement in learning and content creation results from the influence of student-centered learning in education. The transformation in teaching and learning now entails teachers leaving traditional approaches and embracing principles of skills based, guided inquiry learning, and this involve teaching useful and employable skills using their professionalism for the students to implement the skills upon their graduation (Malik 2018).

PBL has been widely adopted due to its ability to impact in students, problem solving, decision-making and group collaboration skills (Alkhatib 2019). PBL stimulates students' interest due to independent learning adopted by the students in deciding and finding solutions to the problem at hand (Gonzalez 2019). Furthermore, the independent nature of PBL made it relevant to the different abilities of Building Technology (BT) undergraduate to come up with their thoughts and individual approach in providing solutions to the given problem through engaging in real-life activities (Yew and Goh 2016). Moreover, the PBL helps learners in solving complex problem on their own within the classes with the help of a lecturer who serves as a facilitator. Therefore, PBL is anticipated to offer clarifications that will change teaching and learning in HEIs of developing countries.

PBL may be relatively a new actor in the teaching and learning process for HEIs of developing countries but it plays a important function in developing improved learning and understanding between facilitators and learners via group collaboration within the HEIs environment (Dahms, Spliid et al. 2017). The focus now is more on student-centered approach to bring improvement to learners in a class. The contributions of this paper are as follows:

1. The paper examines an in-depth adoption of PBL in HEIs of developing countries to create a persuasive and operational system.
2. Existing studies on PBL are reviewed and summarize to highlight the apprehensions raised.
3. Lastly, adopting PBL in building technology programs of HEIs in developing countries and some challenges are highlighted in order to determine the effectiveness of adoption in HEIS.

2.0 LITERATURE REVIEW

PBL in the Changing Terrain of HEIs

The concept of learning through problem management is not new but the emergence of PBL as an approach started from the works of Barrows, who found out in his research in medical instruction that medical students did not seem to think at all for the most part (Tawfik 2015). There has been growing anxiety on HEIs to re-assess and make clear their aims (Ogunode and Musa 2020). The move towards a model of HEIs which is receptive to industry demand in the world of work, has increased for greater vocational relevance and this move has brought a closer bond between HEIs and industry (Nwosu, Bereng et al. 2023). This has fostered changes in curricula generally, in precise the growth of personal skills and potentials for life and work through the development of key skills in HEIs (Lozano, Barreiro-Gen et al. 2022). Innovations such as National Vocational Qualification (NVQ) in HEIs has shown that the custom within the system has changed (OPOOLA 2020). A more distinct student population compare to former years necessitates a broader range of approaches, that will take into cognizance the diversity

of student learning requirements and study pattern (Yaayin 2018). Such demands have made HEIs in developing countries like Nigeria to consider PBL to take care of students requirements (Hoidn, Reusser et al. 2021).

The adoption of PBL arises from its innovative means of managing curricula problems or initiating improvement to teaching and learning in HEIs for building technology undergraduate (Tan 2021) and on the other hand, it may have been adopted because it offer prospects to life skill development and the call for the end of teacher-student boundaries in terms of knowledge development (Tan 2021). There seems to be a number of reasons for the increasing popularity of PBL while at the same time there is an obvious disdain of it as a stimulus for prompt to transition in peoples life. From the foregoing, the adoption of PBL is yet to be realized in the viewpoint of HEIs in developing countries. PBL is a significant approach to learning, which has to be fundamentally placed in HEIs curricula compare to what it is presently. Nevertheless, PBL has been misjudged in different of ways, which signifies that it has not been accepted as a fundamental approach within the HEIs because, it is an approach that is often misconstrued and this tend to result in wrong views about the prospects for its adoption (Wallace, Knudson et al. 2020), and this misunderstanding have resulted in the sarcasm of its significant in terms of preparing students for an intricate and changing skillful life that can be acquired from it to develop student learning pattern (Yaayin 2018). Learning should be seen as a recurring procedure in which students make modifications from which they acquire understanding of themselves, and the methods and settings in which they can learn effectively.

3.0 DISCUSSION

Adopting PBL in BT Program

PBL is in support of every development in the HEIs environment; of most prominent is the teaching and learning. In developing countries, the Federal Ministry for Tertiary Education necessitates the education sector to develop and standardize quality and obtainable education, training and research (Nigeria 2014). However, research has shown that PBL adoption in HEIs in BT program is still in the early stages in the developing countries with literature showing a gap in the adoption of PBL (Sewagegn and Diale 2019). Therefore, there is a need, as a necessity for Nigerian HEIs to adopt PBL to develop desired life-long skills in building technology undergraduate. The educational system in most developing countries has been transformed but innovative requirements are required to create a more robust instructional approaches for success within their structures and the boundaries that may be require (Ogunode and Musa 2020). PBL is essential in allowing transformation from traditional teaching and learning approach to a more problem solving learning approach. Learners can study effectively in PBL and facilitators can also do their job easily. They will have access to all relevant materials that will aid in solving the problem at hand and most essentially, PBL can deliver an acceptable instruction for future generations. Building Technology (BT) provides individuals with the necessary skills needed for successful employment or to become self-employed (Anaele Edmond and Eme 2014). However, most BT undergraduate graduate with abstract knowledge, which contributes very little in preparing them for realistic abilities they will meet in their employment interviews (Okolie, Nwajiuba et al. 2021).

Though, the employment requirement of workers has changed drastically because of the changes being witnessed in this 21st century of technology and Artificial Intelligence. To meet these needs, a substitute to the traditional instruction approach should be introduced to BT graduate in the developing countries, where teaching and learning delivery is aligned with the workplace and practices in the employment industries (Maigari 2016). Moreover, teacher-centered approaches deprive students of learning because, the features of the 21st-century youths necessitate action learning, interactivity, and teamwork and are not in line with the traditional base approach (Muhammad 2021). The need for a shift from the traditional approach to more activity-based approaches is paramount. The present scenario in learning

emphasizes knowledge construction and lively tasks where the teacher is seen as a helper (Koh 2015). Consequently, the desire for Nigeria in becoming among the best-developed nations in the globe and the vision of eliminating poverty and hunger cannot be achieved without a critical development in manpower. Furthermore, one of the challenges in the education sector, most especially building technology program, is the desire to go along with the changing needs of the economy and employers, in terms of employability competencies and skills (Maigari 2016).

In this regard, introducing an active teaching and learning approach like PBL, which is student-centered, becomes vital because of the role PBL plays in aiding student study behavior and effective skills acquisition. To aid BT undergraduate to adjust their study habits, (Moust, Roebertsen et al. 2005) recommended several suggestions, such as asking key questions to BT undergraduate before discussions, teaching discussion skills, and adopting performance-based assessment which has been found to produce a positive result. BT undergraduate mindset and study habits can be remedied through the most essential instructional intervention, which is PBL. A transitional adjustment for many PBL students has been documented in terms of feeling overwhelmed with the outcome of the PBL instructional approach (Hung 2011). Though a little difficult for undergraduate who are already used to traditional instruction the students drastically not only improve their study habits by being thought what to do but to actively take charge of determining what needs to be studied (Hung 2011).

From the foregoing, there is a need for a complete instructional approach of BT undergraduate to a more robust and active student self-directed learning approach like the PBL, which allows students to explore their talents. Moreover, PBL aid in developing students' problem-solving skills, collaborative skills, communication skills, creativity, and critical thinking skills (Novalinda, Giatman et al. 2020).

Model of Implementation of PBL

Many attempts have been made to categorize PBL models. David Merrill (2007) and Allen, Donham et al. (2011) opine that effective learning allows active involvement from the students in the learning process through four stages and these stages include: Previous Knowledge Activation (PKA), Demonstration of Skills (DS), Application of Skills (AS) and Integration of these Skills (IS). Schmidt (1983) organized PBL into six groups by distributing the six groups into two stages and the two stages are Self-Directedness (SD) and Problem Structuredness (PS). Barrow categorized SD as (1) teacher-directed (2) student-directed and (3) partially student and teacher directed while PS was categorized into (1) organized summary of facts (2) free inquiry and (3) partial problem simulation (Barrows and Tamblyn 1980, Hmelo-Silver 2004, David Merrill 2007). Barrows proposed six PBL models which are (1) pure PBL (2) hybrid PBL (3) anchored instruction (5) project-based learning (5) case-based learning (6) instruction with problem-solving activities (Hung 2011). The outcome of learning arising from the six models when applied becomes noteworthy when assessed with intellectual processing in the area of SD and PS. For instance, the model that requires learners to apply full self-directed learning like pure PBL to resolve complex problems will most likely create enriched self-directed learning skills than the model that uses partial instructor and student-led learning like project-based learning (PJBL) in which learners are shown the job to be worked on before project are assigned, or the anchored model which utilizes students problem-solving prior experience while content is only given when desired by the student (Hmelo-Silver 2004). The category can be appraised using their level of SD and the accomplishments in different setting of students' learning events (Hung 2011). For example, the model that uses PJBL may not produce great effect on the student's self-directed learning skills but could aid students understanding of the content and therefore support knowledge transfer (Savery 2015). Similarly, the demonstration that utilizes the models of case-based instruction with problem-solving activities may most probably yield a minor influence on students' self-directed learning, problem-solving, and skills to handle uncertainty

(Taylor and Miflin 2008). This could be due to the low demand for students to participate actively in the process of learning and problem-solving processes (Hung 2011).

Nevertheless, the two PBL models geared towards traditional instruction could be more effective when compared to hybrid PBL in directing learners to develop content because learners' cognitive activities are reduced (Kirschhner, Sweller et al. 2006). Moreover, case-based learning harmonized with problem-solving will be affirmed as a PBL course and can be related to a traditional course, the distinctions may not be significant since they are alike in terms of cognitive desires placed on the learners (Kirschhner, Sweller et al. 2006)

Challenges

Collaboration is significant in PBL curriculum, BT undergraduate will learn best when they interact with their peers compare to working alone but forming a collaborative classroom of PBL is tasking (Efendi and Yulastri 2019) and most be done to provide conducive environment for BT undergraduate to interact and express their own views.

There is also the problem of adjusting roles, in a collaborative PBL, the lecturer act as a facilitator and he is responsible for changing or introducing the real world problem to the groups for a proper solution (Tang, Long et al. 2020). Successful implementation of PBL hangs on the ability of the facilitator to change the way they introduce the real world problem and manage the class.

Another major challenge is identifying assessment techniques that will tackles both individual and group accountability (Kim 2014). Kim (2014) assert that skillful PBL facilitator often develop guidelines in partnership with his students, so that student can foster understanding of their group work and establish standards for quality outcome.

4.0 CONCLUSION

This paper attempts to introduce the adoption of PBL into Building technology program for more advance skill acquisition and employable skills. In Building Technology, PBL can offer many advantages over the traditional teaching and learning method used in HEIs of the developing countries. In PBL, students use real world problem, which serve as motivation during the learning process, identify the bases of the problem, and decisively proffer proper solutions to the problem. With PBL, students can improve their intellectual ability to think and see the relevant factors related the problem at hand and discuss and proffer meaningful solutions. Student also learns the ability to decide and learn independently, the materials they need and how to convey their solutions. Finally, employing PBL in classroom is still tasking for facilitators; it is also essential to empirically assess the efficacy of PBL in Building Technology Program in HEIs of developing countries.

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Kesediaan Guru Pra-Perkhidmatan Matematik Menggunakan Aplikasi Scratch Dalam Kelas Matematik

Readiness Mathematics Pre-Services Teacher Using Scratch in Mathematics Classes

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Abstrak

Kesediaan guru pra-perkhidmatan dari aspek pengetahuan, kemahiran, dan sikap terhadap penggunaan teknologi pada abad ke-21 memainkan peranan penting dalam menentukan keberhasilan reformasi sistem pendidikan yang dibentangkan oleh Kementerian Pendidikan Malaysia (KPM). Bagi memastikan penggunaan teknologi dalam kelas matematik dapat mencapai tahap penggunaan yang maksimum, kesediaan guru pra-perkhidmatan perlu diambil kira. Oleh itu, tujuan kajian ini dijalankan adalah untuk mengenal pasti tahap kesediaan guru pra-perkhidmatan matematik dalam menggunakan aplikasi *Scratch* melalui tiga aspek utama iaitu pengetahuan, kemahiran dan sikap. Dalam kajian ini, aktiviti pembelajaran berasaskan *Scratch* telah dibangunkan bagi membantu guru pra-perkhidmatan matematik mengintegrasikan aplikasi *Scratch* dalam pengajaran matematik di dalam kelas. Aktiviti pembelajaran ini mengandungi projek asas matematik menggunakan aplikasi *Scratch* yang telah disusun dan disesuaikan mengikut kandungan kurikulum Matematik sekolah menengah. Seramai 60 orang pelajar tahun satu dan dua Ijazah Sarjana Muda Sains Dengan Pendidikan (Matematik) Dengan Kepujian, Universiti Teknologi Malaysia (UTM) yang telah dipilih secara persampelan bertujuan bagi kajian ini. Pemilihan sampel terhadap dua kumpulan tahun pengajian yang berbeza dilakukan bagi mengenal pasti perbezaan signifikan terhadap tahap kesediaan guru pra-perkhidmatan tahun satu dan tahun dua. Dengan melaksanakan modul pengajaran kepada sampel kajian, ia diharapkan dapat mengubah tahap kesediaan guru pra-perkhidmatan matematik dari aspek pengetahuan, kemahiran dan sikap untuk mengintegrasikan teknologi dalam pengajaran matematik.

Kata kunci: Guru Pra-Perkhidmatan Matematik, Scratch, Pengetahuan, Kemahiran, Sikap

Abstract

The success of the educational reform initiated by the Malaysian Ministry of Education (MOE) relies on the preparedness of pre-service teachers in terms of their knowledge, skills, and attitudes towards 21st-century technology. Considering the readiness of pre-service teachers is essential to ensure the optimal utilization of technology in mathematics classrooms. Therefore, the objective of this study is to determine the readiness of pre-service mathematics teachers in utilizing the Scratch application for teaching mathematics. In order to assist pre-service mathematics teachers in incorporating the Scratch application into their teaching of mathematics, a Scratch teaching module has been developed in this study. The Scratch-based mathematics projects in the module are varied and aligned with the secondary school mathematics curriculum. The study sample consists of 60 undergraduate students in their first and second years pursuing a Bachelor of Science in Education (Mathematics) with Honors at Universiti Teknologi Malaysia (UTM) and has been selected through purposive sampling. The selection of participants from different academic years aims to explore significant differences in the readiness levels of pre-service teachers based on the year of study. Through the implementation of the teaching module with the study sample, it is anticipated that the readiness of pre-service mathematics teachers, encompassing knowledge, skills, and attitudes, will be positively transformed, enabling effective integration of technology into their mathematics teaching practices.

Keywords: Pre-Service Mathematics Teachers, Scratch, Knowledge, Skills, Attitudes

1.0 PENGENALAN

Pendidikan merupakan salah satu proses dua hala yang melibatkan aktiviti menerima dan memberi arahan sistematik dalam proses pembelajaran melalui pelbagai kaedah, bahan bantu mengajar dan pedagogi yang digunakan oleh para pendidik (Dron, 2021). Dari semasa ke semasa, proses ini telah melalui beberapa perubahan selaras dengan kemajuan dan kehendak semasa. Oleh itu, sistem pendidikan pada masa kini lebih memfokuskan kepada pengintegrasian teknologi dalam pembelajaran dan pemudahcaraan (PdPc) di sekolah. Pengenalan terhadap teknologi dalam sistem pendidikan dilihat sebagai salah satu kaedah yang membantu proses pembelajaran menjadi lebih mudah dan bermakna (Mlambo et al., 2018). Hal ini kerana, penggunaan teknologi telah mengubah persekitaran pembelajaran *chalk-talk* kepada pendidikan digital yang merangsang kemahuan pelajar untuk meneroka konsep dan maklumat di luar konteks kandungan buku teks tanpa menerima arahan daripada guru semata-mata.

Penggunaan teknologi dalam kelas matematik dilihat sebagai satu medium yang menyokong pendekatan konstruktivisme, di mana perkembangan dan fleksibiliti kognitif pelajar dibina melalui interaksi sosial dan persekitaran (Apeanti, 2016). Oleh itu, eksplorasi melalui teknologi memberi peluang kepada pelajar dalam memahami konsep abstrak matematik dan membantu mereka merancang strategi penyelesaian masalah serta membuat penilaian melalui interaksi sosial bersama guru (Vintere, 2018). Dalam era pendigitalan masa kini, pelbagai teknologi telah dikembangkan dengan objektif yang berbeza, memungkinkan guru untuk mengintegrasikan teknologi dalam pengajaran dengan cara yang bersesuaian dengan objektif pembelajaran. Dalam konteks pendidikan matematik, aplikasi *Scratch* telah menjadi salah satu pilihan sebagai bahan bantu mengajar di dalam kelas. Hal ini berdasarkan keupayaan *Scratch* dalam membantu guru memvisualisasikan konsep matematik yang abstrak kepada bentuk visual, serta memberikan variasi dalam pentaksiran pelajar dalam pembelajaran matematik (Iyamuremye & Nsabayeze, 2022).

Sungguhpun begitu, Kementerian Pendidikan Malaysia (KPM) menyatakan bahawa hanya 50% penyampaian pengajaran yang dilakukan dengan menggunakan teknologi secara berkesan, walaupun bilangan guru cemerlang dalam sistem pendidikan terus meningkat. Kelemahan ini disebabkan oleh kompetensi guru dalam menggunakan teknologi, terutamanya aplikasi berasaskan bahasa pengaturcaraan seperti *Scratch*, yang masih berada pada tahap yang rendah. Akibatnya, kekerapan penggunaan aplikasi ini turut berkurang. Hal ini menunjukkan bahawa, tahap kesediaan menggunakan aplikasi *Scratch* perlu diteliti bagi memastikan aplikasi ini dapat diimplementasikan dalam kelas matematik. Namun begitu, bagi memastikan tahap kesediaan mencapai tahap maksimum, kesediaan ini perlu diukur lebih awal iaitu di peringkat guru pra-perkhidmatan bagi memastikan mereka benar-benar bersedia sebelum memasuki dunia pekerjaan dalam sektor pendidikan yang sebenar. Hal ini bertepatan dengan aspirasi KPM melalui Pelan Transformasi ICT 2019-2025 untuk menghasilkan tenaga kerja inovatif, dinamik, dan berprestasi tinggi dalam pendidikan abad ke-21 menjelang tahun 2025 dapat dicapai. Justeru, kajian ini dijalankan bertujuan untuk mengenal pasti tahap kesediaan guru pra-perkhidmatan matematik menggunakan aplikasi *Scratch* dalam pembelajaran dan pengajaran matematik di sekolah. Kajian ini penting bagi menyediakan tenaga pengajar yang relevan dan dinamik untuk memenuhi keperluan pendidikan abad ke-21.

Walaupun guru pra-perkhidmatan pada masa kini juga merupakan golongan yang mahir menggunakan teknologi untuk kegunaan peribadi, namun penggunaan teknologi dalam pengajaran di dalam kelas memerlukan pengetahuan dan kemahiran yang berbeza. Aspek adaptasi teknologi dengan kandungan dan pendekatan pengajaran harus diambil kira bagi memastikan pengajaran yang disampaikan mencapai standard pembelajaran yang ditetapkan. Kajian terdahulu telah membuktikan bahawa kelemahan utama yang dihadapi oleh guru pra-perkhidmatan adalah dalam aspek pedagogi dan pengetahuan kandungan.

Ini berpunca daripada kurangnya pengalaman mengajar yang praktikal (Wah & Hashim, 2021). Oleh itu, cadangan kepada penambahbaikan dalam latihan mengajar (Muluk et al., 2020) dan kursus yang ditawarkan di universiti telah diberi perhatian untuk menangani masalah ini. Namun begitu, tahap kesediaan guru pra-perkhidmatan tidak hanya bergantung pada penambahbaikan oleh pihak universiti, tetapi juga melibatkan usaha guru pra-perkhidmatan itu sendiri. Bakal guru ini perlu aktif mengambil inisiatif untuk meningkatkan pengetahuan dan kemahiran dalam menggunakan aplikasi *Scratch* secara efektif dalam pengajaran matematik. Sehubungan itu, kajian ini turut membina aktiviti matematik berdasarkan aplikasi *Scratch* sebagai sumber rujukan tambahan bagi guru pra-perkhidmatan dalam mengenal pasti kesesuaian kandungan matematik dan aktiviti yang sesuai melalui aplikasi *Scratch*. Aktiviti ini juga diharapkan dapat membentuk sikap yang positif terhadap penggunaan teknologi dalam pengajaran, memberikan peluang bagi guru pra-perkhidmatan untuk menjadi pengajar yang dinamik dan berinovasi.

Objektif Kajian

Objektif kajian ini adalah seperti berikut:

1. Membangunkan aktiviti pembelajaran yang mengandungi projek asas matematik berasaskan *Scratch*.
2. Mengenalpasti tahap kesediaan guru pra-perkhidmatan matematik menggunakan aplikasi *Scratch* dari aspek pengetahuan, kemahiran dan sikap.

2.0 SOROTAN KAJIAN

Scratch Dalam Pendidikan Matematik

Scratch adalah satu aplikasi sumber terbuka yang menggunakan bahasa pengaturcaraan grafik dan berorientasikan *block palette* untuk memanipulasi grafik, audio, dan video melalui aktiviti pengekodan (Poobalan et al., 2019). Setiap blok dalam aplikasi ini mempunyai pelbagai warna dan bentuk yang berbeza dengan fungsi yang unik, mengelakkan berlakunya isu sintaksis (Asri & Jamaludin, 2022). Kepelbagaian bentuk blok ini menyerupai konsep penyusunan *jigsaw puzzles*, di mana setiap blok perlu disusun dengan kesesuaian bentuk sebelum dan selepasnya. Penyusunan blok yang bersesuaian menjadikan kebarangkalian ralat sintaksis berlaku berkurangan. Disebabkan oleh penggunaan aplikasi ini tidak memerlukan kemahiran memahami bahasa pengaturcaraan yang kompleks, maka ia sesuai digunakan oleh pelbagai peringkat umur dan merentas pelbagai disiplin ilmu (Poobalan et al., 2019). Asas pengekodan dalam aplikasi *Scratch* ialah kemahiran pengaturcaraan, yang berlandaskan pada kemahiran menyelesaikan masalah melalui algoritma (Hüseyin et al., 2017). Oleh itu, penggunaan aplikasi *Scratch* secara kreatif dan interaktif dalam pengajaran matematik membuka peluang kepada pelajar untuk mengembangkan kemahiran menyelesaikan masalah dan kemahiran pengaturcaraan, malah merangsang minat pelajar terhadap matematik dan teknologi secara menyeluruh.

Keberkesanan *Scratch* dalam pembelajaran matematik telah dibuktikan melalui kajian-kajian lepas. Kajian yang dilakukan oleh Asri and Jamaludin (2022) menunjukkan bahawa aplikasi *Scratch* berpotensi untuk memberikan pengalaman pembelajaran matematik yang lebih bermakna. Keberkesanannya terletak pada peningkatan kemahiran berfikir secara matematik dan komputasional dalam kalangan pelajar. Dalam proses pengekodan melalui aplikasi *Scratch*, para pelajar cenderung menggunakan kaedah cuba jaya untuk mencari output yang diinginkan. Proses ini telah meningkatkan kemahiran berfikir pelajar dalam menyelesaikan masalah pengekodan dengan mencari dan menyusun blok yang sesuai. Aktiviti ini juga memberi kesan positif terhadap motivasi pelajar dalam proses penyelesaian masalah matematik (Calder, 2019). Pemilihan strategi yang sesuai dalam kaedah cuba jaya memerlukan pemikiran analitikal dari pelajar. Selain itu, output yang dihasilkan melalui kaedah ini mampu merangsang pelajar untuk melakukan pemerhatian dan penilaian terhadap perubahan yang berlaku apabila blok-blok disusun dalam susunan yang berbeza. Hal ini

memberi peluang kepada pelajar untuk menilai jalan penyelesaian yang terbaik dalam menyelesaikan masalah matematik yang diberikan.

Selain itu, dapatan kajian yang dikemukakan oleh Fang et al. (2023) menunjukkan bahawa penggunaan aplikasi *Scratch* dalam pembelajaran matematik telah membawa kepada perkembangan kemahiran komputasional dan kreativiti pelajar. Meskipun semua pelajar mendapat projek pecahan asas yang sama dalam kajian tersebut, namun kreativiti pelajar dalam proses penyusunan dan pemilihan blok dalam aplikasi *Scratch* adalah berbeza, walaupun output yang dihasilkan tetap sama dan tepat. Penemuan ini membuktikan bahawa aplikasi *Scratch* memungkinkan guru untuk mengenal pasti kecerdasan pelbagai (*multiple intelligence*) yang dominan pada setiap pelajar dan seterusnya menyesuaikan kaedah pengajaran yang sesuai dengan kecerdasan pelbagai tersebut. Kesannya, pembelajaran matematik menjadi lebih berkesan dan membolehkan pelajar menggunakan kekuatan kecerdasan secara optimum dan seterusnya memperolehi kejayaan dalam proses pembelajaran.

Tahap Kesediaan Guru Pra-Perkhidmatan Matematik Menggunakan Aplikasi Scratch Dari Aspek Pengetahuan, Kemahiran dan Sikap

Kementerian Pendidikan Malaysia (KPM) telah memperkenalkan Kurikulum Standard Sekolah Menengah (KSSM) dalam mata pelajaran matematik untuk memenuhi keperluan pendidikan abad ke-21. Kurikulum ini bertujuan untuk membentuk individu yang berfikir secara matematik, kreatif, inovatif, dan mampu mengaplikasikan pengetahuan dan kemahiran matematik dalam menyelesaikan masalah, sejajar dengan perkembangan sains dan teknologi serta cabaran abad ke-21 (KPM, 2015). Namun, untuk mencapai matlamat ini, peranan aktif dari para guru dalam merancang pengajaran harian yang memenuhi kepelbagaian aspek kemahiran yang telah ditetapkan diperlukan. Akibatnya, beban tugas guru semakin meningkat dari semasa ke semasa. Kepentingan kesediaan guru dari aspek pengetahuan, kemahiran, dan sikap tidak boleh diabaikan. Seorang guru yang benar-benar bersedia dari semua aspek, iaitu kognitif, tingkah laku, dan afektif, akan dapat melaksanakan tugas dan tanggungjawab dengan lebih efektif. Seiring dengan tuntutan transformasi pendidikan yang baharu, kesediaan guru memainkan peranan yang penting dalam memudahkan pelaksanaan kurikulum yang baru di sekolah. Namun, kesediaan ini haruslah dibentuk dari peringkat universiti lagi, khususnya bagi guru pra-perkhidmatan bagi membentuk kesediaan yang kukuh demi melaksanakan kurikulum sedia ada di sekolah.

Keberkesanan teknologi dalam pendidikan digital bergantung kepada kesediaan guru untuk menerima dan menggunakan teknologi tersebut dalam proses pengajaran di sekolah. Saban tahun, teknologi terus berkembang menjadi lebih canggih dan penggunaannya semakin meluas. Hipotesis yang telah dikaji oleh Seufert et al., (2021) menyatakan bahawa semakin canggih teknologi yang digunakan dalam kelas, maka semakin tinggi hasil pembelajaran yang dapat dicapai oleh pelajar. Keadaan ini menuntut guru pra-perkhidmatan untuk terus bersedia dari segi pengetahuan, kemahiran, dan sikap untuk mengintegrasikan teknologi dalam pengajaran dan pembelajaran pada masa hadapan. Kesediaan ini penting agar guru mampu memahami dan memanfaatkan teknologi secara efektif dalam menyampaikan bahan pengajaran kepada pelajar. Namun, aspek pengetahuan dan kemahiran tidak hanya diukur melalui penggunaan teknologi seperti aplikasi *Scratch* semata-mata, malah ia juga dilihat dari aspek pengetahuan dalam mengimplementasikan aplikasi tersebut mengikut kesesuaian kandungan pengajaran dan pembelajaran matematik di sekolah (Leong et al., 2015). Seiring dengan transformasi pendidikan yang telah dilakukan, kandungan kurikulum matematik juga berubah dari segi standard pembelajaran, kandungan, dan penilaian pelajar. Maka, guru pra-perkhidmatan perlu cakna terhadap perubahan yang telah

dilakukan bagi memastikan keberhasilan pengajaran yang disampaikan memberi kesan kepada perkembangan pelajar.

Dapatan kajian-kajian lepas menunjukkan bahawa pengetahuan dan kemahiran guru pra-perkhidmatan terhadap pengintegrasian teknologi berdasarkan kandungan dan pedagogi yang bersesuaian adalah rendah disebabkan oleh faktor kurangnya pengalaman dalam sektor pendidikan (Wah & Hashim, 2021) serta pendedahan terhadap pelaksanaan teknologi mengikut kandungan pembelajaran (Ismail & Jarrar, 2019). Namun begitu, antara inisiatif yang telah diketengahkan melalui kajian-kajian lepas adalah melalui peningkatan bilangan latihan pengajaran serta tawaran kursus yang lebih efektif di peringkat universiti (Muluk et al., 2020). Walau bagaimanapun, kurangnya pembinaan modul atau cadangan aktiviti pembelajaran yang dapat menjadi sumber rujukan tambahan guru pra-perkhidmatan bagi memperkukuhkan lagi tahap penguasaan mereka dalam menggunakan teknologi khusus kepada aplikasi *Scratch* menjadi jurang dalam kajian-kajian lepas. Oleh itu, tindakan yang perlu diambil adalah mengembangkan modul yang khusus berkaitan dengan penggunaan aplikasi *Scratch* dalam pengajaran matematik dan memastikan modul ini dapat diakses dan digunakan oleh guru pra-perkhidmatan sebagai sumber rujukan tambahan.

Di sebalik pengetahuan dan kemahiran yang tinggi, sikap guru pra-perkhidmatan terhadap penggunaan *Scratch* juga dilihat memainkan peranan penting dalam menentukan penggunaannya ketika pengajaran dan pembelajaran matematik. Penerimaan penggunaan *Scratch* dibentuk melalui perspektif guru pra-perkhidmatan yang menganggap aktiviti yang dibangunkan melalui aplikasi *Scratch* mampu memberi faedah kepada pembelajaran matematik pelajar. Namun, perspektif negatif juga merupakan salah satu faktor yang mewujudkan jurang pendidikan digital dan seterusnya memberi kesan kepada kekerapan guru pra-perkhidmatan dalam menggunakan aplikasi *Scratch* (Ayob, 2021). Sikap guru pra-perkhidmatan terhadap penggunaan *Scratch* dapat dibahagikan kepada dua aspek, iaitu positif seperti gembira dan seronok, atau negatif seperti gelisah dan bosan. Sikap yang ditunjukkan oleh bakal guru ketika menggunakan aplikasi ini mencerminkan kepada sikap pelajar dan prestasi kerja pada masa akan datang. Oleh itu, penerimaan yang positif perlu dipupuk bagi memastikan penggunaan aplikasi *Scratch* semasa pengajaran dan pembelajaran matematik dapat mengubah suasana pembelajaran menjadi lebih seronok dan bermakna kepada pelajar.

Kesimpulannya, apabila pengetahuan dan kemahiran dalam menggunakan bahasa pengaturcaraan tidak mencukupi, berkemungkinan mempengaruhi keberkesanan penggunaan aplikasi *Scratch* dalam pengajaran dan pembelajaran matematik. Oleh itu, adalah penting untuk memberi penekanan terhadap peningkatan pengetahuan dan kemahiran guru pra-perkhidmatan dalam menggunakan aplikasi *Scratch*. Selain itu, sikap dan penerimaan guru terhadap teknologi tersebut juga perlu dipertimbangkan, kerana sikap yang positif terhadap aplikasi ini akan memberi kesan yang baik dalam pengajaran dan pembelajaran matematik. Namun demikian, oleh kerana aplikasi *Scratch* ini berasaskan pemahaman bahasa pengaturcaraan, maka penerimaan seseorang terhadap aplikasi ini mungkin sedikit berbeza berbanding dengan aplikasi matematik atau perisian lain yang lebih bersifat konvensional. Oleh itu, kajian terhadap kesediaan guru pra-perkhidmatan dari aspek pengetahuan, kemahiran, dan sikap khusus terhadap aplikasi *Scratch* perlu dikaji dengan lebih teliti.

3.0 METODOLOGI KAJIAN

Reka Bentuk Kajian dan Persampelan

Kajian ini menggunakan reka bentuk tinjauan bagi mengukur keberhasilan aktiviti pembelajaran matematik menggunakan aplikasi *Scratch* dalam peningkatan tahap

kesediaan guru pra-perkhidmatan matematik dari aspek pengetahuan, kemahiran dan sikap. Kajian tinjauan merujuk kepada penyelidikan yang melihat trend keseluruhan populasi melalui kajian yang dilakukan terhadap sampel populasi tersebut. Kajian ini memilih untuk melakukan tinjauan secara dalam talian adalah disebabkan oleh kos dan masa yang digunakan ketika melakukan tinjauan. Tinjauan yang dilakukan melibatkan 31 orang pelajar tahun satu dan 29 orang pelajar tahun dua Ijazah Sarjana Muda Sains Dengan Pendidikan (Matematik) Dengan Kepujian, di Sekolah Pendidikan, Fakulti Sains Sosial dan Kemanusiaan (FSSH) di Universiti Teknologi Malaysia (UTM). Peserta kajian ini adalah pelajar yang sedang mengikuti pengajian pengkhususan pendidikan matematik dan akan bergraduan dalam bidang pendidikan matematik sekolah menengah. Oleh itu, aktiviti yang telah dibangunkan disusun dan disesuaikan mengikut kandungan kurikulum matematik KSSM sekolah menengah. Kajian ini telah menggunakan kaedah persampelan bertujuan yang memfokuskan kepada dua tahun pengajian yang berbeza bagi mengenal pasti perbezaan signifikan terhadap tahap kesediaan menggunakan aplikasi *Scratch* selepas aktiviti pembelajaran matematik berasaskan *Scratch* dijalankan.

Pembinaan Aktiviti Pembelajaran Matematik Berasaskan Scratch

Proses membangunkan aktiviti pembelajaran matematik menggunakan aplikasi *Scratch* ini mengambil kira beberapa perkara seperti penelitian terhadap Dokumen Standard Kurikulum dan Pentaksiran (DSKP) dan Kurikulum Standard Sekolah Menengah (KSSM) bagi memastikan aktiviti yang dibangunkan bersesuaian dengan kandungan dan standard pembelajaran semasa. Jadual di bawah menunjukkan aktiviti-aktiviti pembelajaran matematik menggunakan aplikasi *Scratch* yang dibina dalam kajian ini.

Jadual 1 Aktiviti Pembelajaran *Scratch*

Standard Kandungan	Aktiviti
<i>Scratch</i> dan Matematik	1. Mengkaji fungsi <i>blok palette</i> melalui dua set susunan blok yang berbeza namun menghasilkan output yang sama.
Trigonometri	1. Mengira nilai dan menghasilkan senarai sinus, kosinus dan tangen menggunakan blok operasi. 2. Menjana graf sinus, kosinus dan tangen menggunakan konsep pergerakan grafik.
Poligon	1. Membina bentuk poligon berdasarkan kepada nilai input yang ditetapkan. 2. Menjana bentuk poligon berulang berdasarkan kepada perubahan sudut dalaman poligon. 3. Menyelesaikan masalah yang melibatkan sudut dalaman dan luaran poligon.
Pengendalian Data	1. Menghasilkan carta bar dan carta pai berdasarkan kepada had set data yang telah ditetapkan.
Kecenderungan Pusat (Min, Median dan Mod)	1. Mengira min, median dan mod menggunakan senarai data yang telah dijana.
Kebarangkalian	1. Mengira kebarangkalian hasil bagi sebiju dadu menggunakan blok pembolehubah baharu menggunakan <i>Scratch</i> .

Analisis Data

Berdasarkan kepada objektif kajian untuk mengenalpasti tahap kesediaan guru pra-perkhidmatan matematik menggunakan aplikasi *Scratch*, maka, reka bentuk kajian ini dilaksanakan dengan menggunakan pendekatan reka bentuk kuantitatif yang dijalankan secara tinjauan. Dalam konteks kesediaan guru pra-perkhidmatan menggunakan aplikasi *Scratch* dalam pembelajaran dan pengajaran matematik, langkah pertama yang dilakukan adalah melalui pembangunan aktiviti pembelajaran melalui projek asas matematik menggunakan aplikasi *Scratch*. Setelah aktiviti dijalankan selama dua minggu, tahap kesediaan guru pra-perkhidmatan dapat dikaji melalui borang soal selidik. Borang soal selidik ini bertujuan untuk mengenalpasti perubahan dalam pengetahuan, kemahiran, dan sikap guru terhadap penggunaan aplikasi *Scratch* dalam pengajaran dan pembelajaran matematik. Soal selidik yang disediakan merangkumi item soal selidik yang berkaitan dengan pengetahuan tentang aplikasi *Scratch*, pengalaman dalam menggunakan aplikasi ini sebelum dan selepas aktiviti, penilaian terhadap keberkesanan aplikasi *Scratch* dalam pembelajaran matematik, serta sikap dan keyakinan guru pra-perkhidmatan matematik terhadap penggunaan teknologi dalam pengajaran matematik.

JANGKAAN DAPATAN KAJIAN

Oleh kerana kajian in baru sahaja dilaksanakan, proses analisis masih belum dapat dilengkapkan dengan sepenuhnya. Walau bagaimanapun, dapatan kajian ini dijangka menunjukkan terdapat perubahan yang ditunjukkan oleh guru pra-perkhidmatan matematik dari segi kesediaan pengetahuan, kemahiran, dan sikap dalam menggunakan aplikasi *Scratch* dalam pembelajaran dan pengajaran matematik di sekolah. Melalui aktiviti pembelajaran berbentuk projek asas matematik menggunakan aplikasi *Scratch*, tahap pengetahuan guru pra-perkhidmatan, termasuk pemahaman yang lebih baik terhadap fungsi *blok palette* yang sesuai dengan pembelajaran matematik dapat dipertingkatkan lagi menjadikan aspek pengetahuan guru pra-perkhidmatan menjadi lebih kukuh. Selain itu, pengetahuan tentang penyesuaian kandungan pembelajaran matematik menggunakan aplikasi *Scratch* juga dapat memberi impak positif terhadap pengetahuan bakal guru matematik melalui aktiviti yang telah dijalankan. Kemahiran guru pra-perkhidmatan dalam menggunakan bahasa pengaturcaraan sebagai medium pengajaran matematik di sekolah juga diharapkan dapat dikuasai dengan baik, dan ini akan mencerminkan kemahiran pelajar di masa hadapan untuk menguasai aplikasi bahasa pengaturcaraan.

Perubahan sikap yang positif terhadap penggunaan teknologi juga menjadi salah satu jangkaan dapatan kajian yang dijalankan, dan ini akan memastikan keberhasilan aktiviti pembelajaran yang dilaksanakan. Pembangunan aktiviti melalui projek asas matematik menggunakan aplikasi *Scratch* diharapkan dapat membantu guru pra-perkhidmatan matematik untuk lebih bersedia dalam mengintegrasikan teknologi ini secara berterusan dalam pengajaran matematik pada masa akan datang. Kesimpulannya, melalui aktiviti pembelajaran menggunakan aplikasi *Scratch*, peningkatan kesediaan guru pra-perkhidmatan dalam mengintegrasikan teknologi dalam pembelajaran matematik dapat dijangkakan. Pengetahuan, kemahiran, dan sikap guru dalam menggunakan aplikasi ini diharapkan dapat membantu meningkatkan kualiti pengajaran matematik dan mempersiapkan guru pra-perkhidmatan matematik untuk menghadapi cabaran abad ke-21 dengan lebih kompeten dan berdaya saing.

5.0 PENUTUP

Pembelajaran matematik memainkan peranan penting dalam membentuk perkembangan pelajar dari segi kognitif, afektif, dan psikomotor (Jin et al., 2022). Melalui semakan semula kurikulum matematik berdasarkan Falsafah Pendidikan Kebangsaan (FPK), pendidikan matematik di sekolah kini diselaraskan dengan perkembangan global. Penerapan teknologi, termasuk penggunaan aplikasi *Scratch*, telah diberi penekanan untuk mencapai matlamat kurikulum matematik dalam membentuk individu yang berpemikiran matematik, inovatif, dan kreatif. Berdasarkan kajian-kajian terdahulu, aplikasi *Scratch* telah terbukti efektif dalam meningkatkan kemahiran pelajar, sejajar dengan keperluan kemahiran abad ke-21 dalam pendidikan. Namun, kesediaan guru pra-perkhidmatan untuk menggunakan aplikasi ini dalam pembelajaran matematik perlu diberi perhatian sejak dari peringkat awal pembentukan bakal guru. Dengan kesediaan yang kukuh dalam aspek pengetahuan, kemahiran, dan sikap, guru pra-perkhidmatan akan lebih bersedia untuk menggunakan aplikasi *Scratch* dengan berkesan ketika mengajar di sekolah. Kesediaan guru pra-perkhidmatan yang tinggi akan meningkatkan kemungkinan penggunaan aplikasi ini dalam pengajaran matematik, dan seterusnya memberi kesan positif kepada suasana pembelajaran yang lebih menyeronokkan dan membantu perkembangan intelektual pelajar.

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Application and Research of Virtual Reality Technology in Cultivating Creativity among Visual Communication Majors in Chinese Universities

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Abstract

With the rapid development of virtual reality (VR) technology, its application in art education has attracted significant attention. This study aims to explore the potential of VR technology in fostering creativity among students majoring in Visual Communication at Chinese universities to meet the growing demands of the digital and visual expression fields in the future society. Past research has indicated limitations in traditional teaching methods regarding creativity cultivation, such as constrained creative spaces and a lack of personalized creative experiences. Therefore, this research aims to leverage the advantages of virtual reality technology and explore its innovative application in nurturing creativity among Visual Communication majors in higher education. The research methodology includes a comprehensive review of existing studies on the use of virtual reality technology in the education domain, as well as surveys and data collection from students majoring in Visual Communication. Through the interactivity and immersion offered by VR environments, students can freely explore creative ideas and expand their creative thinking, leading to more imaginative design works. This study provides a fresh perspective and insights for the teaching and innovation in Visual Communication majors at Chinese universities, bringing positive transformations to their learning experiences and offering scientific evidence and recommendations for students' creative development. Incorporating virtual reality technology into educational practices holds the potential to provide new educational solutions for the ever-changing demands of the digital landscape in the future.

Keywords: Virtual reality technology; Visual Communication education; Creativity cultivation

Abstrak

Dengan perkembangan pesat teknologi realiti maya (VR), aplikasinya dalam pendidikan seni telah menarik perhatian yang ketara. Kajian ini bertujuan untuk meneroka potensi teknologi VR dalam memupuk kreativiti dalam kalangan pelajar jurusan Komunikasi Visual di universiti-universiti China bagi memenuhi permintaan yang semakin meningkat dalam bidang ekspresi digital dan visual dalam masyarakat masa hadapan. Penyelidikan lepas telah menunjukkan batasan dalam kaedah pengajaran tradisional mengenai penanaman kreativiti, seperti ruang kreatif yang terhad dan kekurangan pengalaman kreatif yang diperibadikan. Oleh itu, penyelidikan ini bertujuan untuk memanfaatkan kelebihan teknologi realiti maya dan meneroka aplikasi inovatifnya dalam memupuk kreativiti dalam kalangan jurusan Komunikasi Visual dalam pendidikan tinggi. Metodologi penyelidikan merangkumi tinjauan menyeluruh terhadap kajian sedia ada mengenai penggunaan teknologi realiti maya dalam domain pendidikan, serta tinjauan dan pengumpulan data daripada pelajar jurusan Komunikasi Visual. Melalui interaktiviti dan rendaman yang ditawarkan oleh persekitaran VR, pelajar boleh meneroka idea kreatif secara bebas dan mengembangkan pemikiran kreatif mereka, yang membawa kepada karya reka bentuk yang lebih imaginatif. Kajian ini memberikan perspektif dan pandangan baharu untuk pengajaran dan inovasi dalam jurusan Komunikasi Visual di universiti China, membawa transformasi positif kepada pengalaman pembelajaran mereka dan menawarkan bukti saintifik dan cadangan untuk pembangunan kreatif pelajar. Menggabungkan teknologi realiti maya ke dalam amalan pendidikan berpotensi untuk menyediakan penyelesaian pendidikan baharu bagi permintaan landskap digital yang sentiasa berubah pada masa hadapan.

Kata kunci: Teknologi realiti maya; Pendidikan Komunikasi Visual; Pembudayaan kreativiti

1.0 INTRODUCTION

Virtual reality technology, as a significant digital tool, has attracted immense attention and interest in various fields. In the domain of art education in China, traditional teaching methods often make it difficult for students to comprehend theoretical and technical steps (Özgen, D. S., Afacan, Y., and Süner, E. 2021), leading to a perception of abstraction and complexity. This significantly impacts teaching quality and diminishes students' interest in learning. Virtual reality technology provides students with a different learning and creative environment from traditional teaching methods, presenting new possibilities for fostering creativity and innovative thinking. As the demand for digitization and visual expression continues to grow in the future society, the requirements for students majoring in Visual Communication become more diverse and complex. In this context, how to cultivate creativity with innovation, diversity, and global competitiveness among students in visual communication majors at universities becomes a crucial research topic.

However, despite the promising prospects of virtual reality technology in art education, its full exploration and application in Chinese universities, specifically in the Visual Communication majors, have yet to be realized. Traditional teaching methods exhibit certain limitations in cultivating students' creativity, such as limited creative space, lack of personalized creative experiences, and inadequate stimulation of students' creative potential. Therefore, it is essential to conduct in-depth research on the potential of virtual reality technology in cultivating creativity among students majoring in Visual Communication at universities and explore its innovative application to better meet the growing demands of the digital and visual expression fields in the future society.

This research aims to explore the potential of virtual reality technology in fostering creativity among students majoring in Visual Communication at Chinese universities and provide scientific evidence and recommendations for future teaching practices and curriculum improvements. Drawing upon the "3P Learning Process Model Theory," we deeply analyze the critical role of learning interests and learning styles in nurturing students' creativity. By thoroughly understanding students' learning interests and styles, we explore the potential of virtual reality technology in stimulating creativity, cultivating innovative thinking, and enhancing creative expression. Through a comprehensive review of existing research on virtual reality technology in the education domain and conducting surveys and experimental data collection from students majoring in Visual Communication at universities, the experimental teaching project, centered around VR technology, is designed to leverage the expressive and emotional advantages of VR technology in knowledge dissemination (Burke, K. 2020). The experiment includes in-depth interactions with virtual objects, simulated shooting scenes, interactive scenario experiments, and emotional design experiences. We delve into students' acceptance of virtual reality technology, their cognitive perspectives on creativity cultivation, and their feedback on virtual reality teaching.

The purpose of this research is not only to provide a fresh perspective and insights for teaching and innovation in Visual Communication majors at Chinese universities but also to offer scientific evidence and recommendations for students' creative development, cultivating more creative and innovative talents. Integrating the concepts of digital learning and sustainable education, we will discuss the importance of incorporating virtual reality technology into teaching practices and promote the innovation of educational systems and curriculum in Visual Communication majors at universities to meet the ever-changing educational demands in the digital landscape. Through an in-depth exploration of the application of virtual reality technology in cultivating students' creativity, this research aims to contribute wisdom and theoretical support to the progress and sustainable development of higher education and art education.

2.0 LITERATURE REVIEW

The term "VR" was initially coined in the 1960s, and since then, this technology has evolved to simulate the natural world in various ways. VR offers a distinct three-dimensional virtual environment for educational purposes, aiming to replicate the appearance of real-world objects and phenomena. It adheres to the fundamental principles of immersion, interaction, and user participation, both in the environment and the narrative, thereby enhancing learning motivation and presenting significant potential for educational applications (Ott & Freina, 2015). In a simulated VR setting, educators have the opportunity to demonstrate learning activities that are not feasible in traditional laboratory courses.

The traditional teaching approach, being relatively monotonous, results in a disconnect between teachers and students' learning experiences, with limited classroom interactions. As a result, the following issues emerge: students lose interest in the course; teachers find it challenging to actively engage students; students' learning outcomes, initiative, and creativity are lacking; and there is limited improvement in students' aesthetic appreciation and innovative design abilities (Melanie J. Maas & Janette M. Hughes 2020).

In recent decades, VR technology has found widespread applications across various educational fields. The ever-increasing pace of technological advancements has led to the gradual maturation of VR capabilities and associated equipment, resulting in reduced usage costs compared to earlier stages. As a consequence, the integration of IVR in art and design education is expected to witness rapid growth in the coming years. According to a recent study conducted by Rong et al. (2022), the incorporation of VR technology in arts education fosters deep learning engagement among students. Moreover, from a psychological perspective, it has shown to significantly enhance students' concentration and creativity.

Another study examined the experiences and processes of students and teachers in art education through the use of IVR (Immersive Virtual Reality). The Tilt Brush app was employed to construct virtual worlds, enabling users to interact and yielding positive outcomes in terms of immersion, interaction, and imagination (Paatela-Nieminen, 2021). These findings imply that the incorporation of VR technology can be advantageous in the creation of artistic designs.

Furthermore, research conducted by Mohamed and Sicklinger (2022) highlights the mounting pressure on design education. The utilization of virtual reality technology in graphic design has been shown to enhance students' cognitive skills and ideation. The study presents a methodology for integrating proposed course content centered around virtual reality into existing graphic design courses. This innovative approach allows undergraduate students to make decisions based on their ideas at different stages of the design process. Throughout the experiment, virtual reality technology is integrated into the development courses of various design disciplines to enhance users' three-dimensional visualization of the design process and its practical application. The research findings substantiate that VR technology has the capacity to transform design concepts from a 2D environment to an interactive 3D environment, thereby providing users with a more immersive and enriching learning experience.

The research results show that integrating VR technology into teaching based on constructivism learning can stimulate the learning enthusiasm and learning motivation of students majoring in visual design, and mobilize their imagination, creativity, sensibility and comprehensive design ability. (Lilechi & Ndunda, 2022). College art instructors can employ VR as a supplementary tool to complement teaching materials for design-focused courses in the classroom. This approach enables teachers to facilitate a more profound comprehension of art pieces among college students compared to traditional textbook methods, as students can directly interact with the artworks. Furthermore, VR technology offers visual aids that immerse students in a simulated VR environment, undoubtedly enhancing their engagement and enthusiasm during the learning process, particularly among those pursuing visual communication design majors (Johnson-Glenberg, M. C. 2018).

3.0 METHODOLOGY

Research Subjects

The research selected second-year students majoring in Visual Communication Design at a public university in Zhejiang, China, within the School of Architecture and Art, as the research subjects. The selection of these students was based on the following considerations: Firstly, the researchers are teachers in the Visual Communication Design major, who teach core courses such as Packaging Design, Poster Design, and Information Visualization Design. This facilitates observation and data collection. Secondly, the research aligns with the students' professional direction and their strong interest, making it feasible to conduct the study smoothly. Moreover, the number of annual enrollments in this major is relatively stable, and students have fixed study durations, ensuring an adequate sample size and research efficiency.

The study involved a total of 80 second-year students, comprising 29 males and 51 females, with an average age of 21 years and a standard deviation of 0.71.

Research Instruments

The research instruments used in this study include process-oriented scales and evaluative scales. The process-oriented scales consist of the Student Learning Interest Scale and the Student Primary Learning Method Scale. The evaluative scale adopts the Torrance Tests of Creative Thinking (TTCT) to assess students' creativity.

Development and Validity Analysis of Process-Oriented Scales:

In the process of scale development, the researchers drew on the "3P Learning Process Model Theory," which focuses on learning interests and learning styles. The process involved three steps: Open-Ended Collection, Associative Collection, and Expert Evaluation.

Open-Ended Collection: The research team surveyed 20 teachers' teaching cases to gather descriptions related to students' learning interests, learning methods, and teachers' guidance, forming "meaning units." The researchers reduced these units to key terms or concepts and associated them with keywords or concepts related to students' learning interests, learning methods, and teachers' guidance from published literature, resulting in a total of 32 key terms or concepts.

Associative Collection: The high-frequency key terms from the previous collection were logically organized and categorized into a word list containing 26 key terms. This list comprised 10 key terms related to learning interests and 16 key terms related to learning methods. The researchers defined these key terms as observation items and provided explanations and examples of corresponding behaviors. They then observed students majoring in Visual Communication from different universities on three separate occasions to further focus and identify 6 observation items for learning interests and 8 observation items for learning methods.

Expert Evaluation: The determined word lists were sent to six experts and six teachers for review. Based on their feedback, the word lists were further refined, ultimately resulting in the Student Learning Interest Observation Form and the Student Learning Method Observation Form. These observation forms include sections for recording and collecting information related to the observation objects, observation dimensions, observation methods, total observation duration, observer names, time, and location.

The above scales underwent tests for reliability and validity. In terms of structural validity, the KMO (Kaiser-Meyer-Olkin) value for the scales was 0.667, and the Bartlett's sphericity test's P-value was 0.000 (<0.05), indicating that six factors with eigenvalues greater than 1 were extracted, explaining a total variance of 62.233%. Regarding reliability, the Cronbach's α values for the scales ranged from 0.598 to 0.780 (>0.500), indicating good reliability and supporting their use in the subsequent empirical research.

Application and Reliability Analysis of the Evaluative Scale:

For studying students' creativity, the Torrance Tests of Creative Thinking (TTCT) were selected as the research tool, assessing students' creativity from four dimensions: fluency, flexibility, originality, and elaboration. The TTCT in this study consisted of three drawing tests:

Test 1: Participants were presented with an egg-shaped pattern and asked to draw imaginative pictures on the paper.

Test 2: Participants were provided with ten simple line-drawn shapes and asked to complete and name these shapes.

Test 3: Participants were provided with 30 circles or 30 pairs of parallel lines and asked to use them as a basis to draw as many different objects as possible.

After conducting statistical analysis, the Cronbach's a values for the TTCT ranged from 0.80 to 0.90, indicating that the "Torrance Tests of Creative Thinking (TTCT)" can be used to support the subsequent empirical research. These values indicate good reliability, ensuring the suitability and consistency of the TTCT in assessing students' creativity.

Research Procedure

The research was conducted from September 2022 to January 2023, lasting one semester. As observers, the teachers tracked the classroom situations of both the experimental and control classes based on the students' actual performance in the classroom. They recorded 45-minute video sessions for each class and used the Student Learning Interest Observation Form and the Student Learning Method Observation Form to tally the frequency of behavior indicators exhibited by students during different course segments at equidistant intervals. The observation was done using a one-minute interval sampling method, and three observers simultaneously observed one student, taking the average value. The data were then entered into SPSS for analysis and processing.

A characteristic of Visual Communication Design teaching is that there are many practical training hours, and students need to fully immerse themselves in the learning environment to complete the teacher-assigned course practice tasks and project skill training. In the actual VR training and teaching activities, students used digital resources through a smartphone app and followed the instructions provided in the course training guidebook to preview knowledge. The teacher utilized VR to explain practical content, and students performed the training activities with guidance from the app on their smartphones.

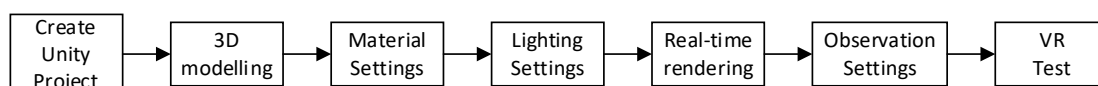


Figure 1 Packaging Design Model Development Process

For example, in the "Packaging Design" course, during the biscuit packaging design unit (Figure 1: Packaging Design Model Development Process), students could work in groups to draw three views of the biscuit packaging and create a 3D model of the biscuit box using Unity or other 3D modeling software. At this stage, students needed to consider the size, shape, structure, and decorative elements of the box. They applied various materials and textures, ranging from simple solid colors to complex patterns and labels. Students could preview the impact of different materials on the appearance of the box and make adjustments and optimizations accordingly. Then, they imported the designed biscuit box model into the VR development environment. Through integration with VR devices, such as VR headsets and controllers, they could present the appearance and effects of the box in virtual reality, obtaining more realistic visual and tactile feedback. Through VR presentations, groups could discuss and learn from each other more intuitively. Students could assess the design's effects more directly in the VR environment, feeling the size, texture, and appearance of the box and evaluating whether it met their expectations. Based on the feedback from teachers'

explanations and modifications, students made necessary optimizations and adjustments to further improve their designs.

4.0 DATA ANALYSIS

Overall Analysis

Using SPSS software, the overall situation before and after the experiment was tested and compared. This included changes in students' positive and negative learning interests, changes in their learning methods, and changes in their creativity. The specific results are shown in Table 1.

Table1 Comparison of students Interests Before and After the Test

		Mean	SD	Proportion
Pre-test	Positive	22.91	13.57	82.27
	Negative	5.39	5.68	17.73
Post-test	Positive	32.37	12.56	92.10
	Negative	2.98	3.69	7.90

From Table 1, it can be observed that in the pre-test, the mean values of students' positive and negative learning interests were 22.91 (SD=13.57) and 5.39 (SD=5.68) respectively. After the implementation of the semester-long experiment, the post-test showed an increase in the values and proportions of positive learning interests, and a decrease in the values and proportions of negative learning interests. The mean values were 32.37 (SD=12.56) and 2.98 (SD=3.69) respectively. This indicates that the use of VR devices in Visual Communication Design classrooms enhanced students' learning interests.

Table 2 Comparison of Changes in students Learning Styles

	Pre-test			Post-test		
	Mean	SD	Proportion %	Mean	SD	Proportion %
Observation	0.21	0.72	2.73	0.35	0.98	4.56
Listening	4.1	5.31	53.25	2.84	4.45	34.01
Discussion	0.43	1.05	5.58	1.06	2.03	12.69
Questioning	0.25	0.66	3.25	0.50	0.82	6.00
Experience	0.00	0.00	0.00	0.09	0.34	1.08

From Table 2, in terms of students' learning methods, the item "listening" had mean values of 4.1 (SD=5.31) and 2.84 (SD=4.45) in the pre-test and post-test respectively. The data shows that "listening" was the dominant learning method, but its proportion decreased in the post-test. On the other hand, there was significant improvement in the learning methods of "observation," "discussion," "questioning," and "experience." In particular, there was a breakthrough in the "experience" item, indicating that the use of VR devices in traditional Visual Communication

Design classrooms changed students' learning methods. Specifically, students' proactivity and autonomy were emphasized and displayed. The use of VR changed the rigid teaching mode of "teachers speak, students listen," transforming it into a more dynamic and interactive learning experience, which improved the efficiency of teaching.

Table 3 Comparison of Students' Creativity Before and After the Test

	Pre-test		Post-test	
	Mean	SD	Mean	SD
Fluency	62.21	43.00	32.45	13.22
Flexibility	19.98	9.20	36.78	17.91
Originality	29.23	18.61	53.63	28.00
Elaboration	62.76	42.97	102.33	56.60
Creativity	173.18	63.59	225.19	107.56

From Table 3, it can be observed that there were varying degrees of changes in the four dimensions of students' creativity. Overall, the mean value of students' creativity in the pre-test was 173.18 (SD=63.59), while in the post-test, the mean value was 225.19 (SD=107.56). It is evident that students' creativity was significantly enhanced through the use of VR.

Differential Analysis

Pre-test Experimental Group vs. Control Group (ANOVA)

Using SPSS statistical software for one-way analysis of variance (ANOVA), it was found that there were no significant differences in students' creativity, learning methods, and learning interests between the experimental group and the control group in the pre-test. This indicates that there was no significant difference in the learning process and creativity development between the students in the experimental group and the control group, providing a basis for the subsequent empirical research. See Table 4 for details.

Table 4 Differences between Experimental Class and Control Class in Pre-test

	F	p
Creativity	1.32	0.26
Learning Methods	3.42	0.52
Learning Interest	Positive 7.44	0.70
	Negative 1.31	0.25

Post-test Experimental Group vs. Control Group (ANOVA)

Using SPSS statistical software for one-way analysis of variance (ANOVA), it was found that there were significant differences ($p < 0.01$) in students' creativity ($F = 14.96$, $p = 0.000$), positive learning interests ($F = 86.70$, $p = 0.000$), and negative learning interests ($F = 12.07$, $p = 0.000$) between the experimental group and the control group in the post-test. The data indicates

that in the post-test, the experimental group showed significantly higher levels of creativity and stronger positive learning interests compared to the control group. See Table 5 for details.

Table 5 ANOVA

		F	p
Creativity		14.96**	0.000
Learning Methods		1.96	0.166
Learning Interest	Positive	86.70**	0.000
	Negative	12.06**	0.000

** p < 0.01

Pre-test and Post-test Comparison within the Experimental Group (Paired Samples T-Test)

Using SPSS statistical software for paired samples t-tests, it can be observed that there were significant differences ($p < 0.01$) in students' creativity ($T = -15.42$, $p = 0.000$), learning methods ($T = -2.03$, $p = 0.044$), positive learning interests ($T = -10.77$, $p = 0.000$), and negative learning interests ($T = 6.43$, $p = 0.000$) between the pre-test and post-test within the experimental group. This indicates that the use of VR in Visual Communication Design courses significantly improved students' learning methods and positive learning interests while reducing negative learning interests. See Table 6 for details.

Table 6 ANOVA

		F	p
Creativity		-15.42**	0.000
Learning Methods		-2.03*	0.044
Learning Interest	Positive	-10.77**	0.000
	Negative	6.43**	0.000

** p < 0.01, * p < 0.05

5.0 FINDINGS/ RESULTS

Virtual display technology has achieved three significant advancements in the visual communication design course after one semester of implementation. Firstly, the creativity of students in the experimental group has significantly improved. Secondly, there has been an enhancement in students' positive learning interests. Finally, the learning process has undergone positive changes, with an increase in activities such as observation, discussion, questioning, and experiential learning. These changes have led to increased autonomy in students during activities, allowing them to better showcase their roles as active participants.

After one semester of integrating VR into the visual communication design course, the design discipline has broken free from the constraints of two-dimensional surfaces and shifted towards three-dimensional display space. This has resulted in a more comprehensive and vivid presentation of visual communication content. Students have gained more diverse and varied learning experiences. Virtual reality technology has provided them with a highly interactive

and immersive learning environment, enabling a deeper understanding of creative expression and design principles. Under this guidance, students have been able to explore various creative ideas and design concepts in a lifelike manner, freely expressing their imagination and expanding their creative thinking. As a result, they have been inspired to produce more innovative design works and have cultivated forward-thinking and innovative design abilities. There has been a significant improvement in the creativity of students in the experimental group.

The data shows that under the influence of this study, there has been a significant increase in positive learning interests among students. Through VR-based course learning, students have experienced a learning environment completely different from traditional classroom teaching, which has ignited their enthusiasm for learning. The integration of VR technology has created a more dynamic and engaging learning setting, stimulating students' curiosity and motivation for learning. They have been actively exercising autonomy in the course, forming small groups for cooperative learning and fully utilizing each student's strengths. Due to their strong interest in the projects, students have willingly participated and actively explored. This self-directed and liberating classroom atmosphere has been highly appreciated by students, resulting in a significant increase in their learning interests. The introduction of VR devices has allowed students to immerse themselves in the learning content, making theoretical knowledge more engaging and visualized, thus further promoting their active involvement in learning.

After incorporating VR into teaching, there has been a significant change in students' learning approaches, especially in observation, discussion, questioning, and experiential learning. Through VR technology, students have been able to immerse themselves in the learning content, using audiovisual means to observe design works from all angles, enhancing their understanding of the learning content. The use of VR devices has provided more topics and materials, arousing students' enthusiasm for active participation in discussions. The interactivity and immersion of VR have promoted richer communication and in-depth discussions among students. Simultaneously, VR technology has sparked students' curiosity and desire for exploration of design works, making them more inclined to ask questions and explore, which has further refined their design works. Additionally, experiencing design works in a virtual environment has enhanced their sense of experience and emotional resonance. This experiential learning approach has made it easier for students to apply their works practically, enhancing the effectiveness and applicability of their designs.

6.0 DISCUSSION

In this study, the integration of Unity and other software with VR devices in the packaging design segment of visual communication design has provided students with a completely new learning experience. Visual art forms are composed of elements like lines, colors, and space, and virtual reality technology enhances spatial intuition in art creation. By using multidimensional sensory experiences formed by 2D images and 3D space, students' visual perception is cultivated, and their understanding of the three-dimensionality and realism of design is improved. Through simulating packaging design and display processes in a virtual environment, students can immerse themselves in the authentic presentation of their design works, gaining a deeper understanding of the three-dimensionality and realism of design, thus effectively enhancing design creativity and skills. Students are no longer passive recipients of knowledge but can independently explore, practice, and discover in the virtual environment, cultivating more forward-thinking and innovative design capabilities.

In traditional packaging design courses, students typically present their design works through paper or digital 2D images. However, with the introduction of VR technology, visual communication design gains sensory experiences, allowing students to showcase their design works in a virtual 3D space, providing a more realistic and immersive learning experience. This interactive and practice-oriented learning approach encourages students to actively engage in the learning process, deepening their understanding of design theories and applying design skills in practical settings.

Furthermore, presenting design works through VR enables students to better evaluate and advance their design concepts. In the virtual environment, they can observe the effects and presentations of their designs in real-time, making modifications and optimizations to refine and meet the required design demands. This real-time feedback mechanism helps stimulate students' creativity and innovative thinking, empowering them to confidently express and showcase their design works.

Moreover, VR provides teachers with more teaching tools and resources. Teachers can use the virtual environment to organize diverse and challenging teaching activities and design more stimulating project tasks, thereby fostering students' interest and motivation to learn.

However, the application of virtual reality technology in the teaching of visual communication design also faces some challenges and limitations. Firstly, the cost of technical equipment and software is relatively high, requiring sufficient investment and support from schools. Secondly, teachers need to undergo professional training and become proficient in the application of VR technology to maximize the effectiveness of teaching. Additionally, the constant updates and developments in virtual reality technology require schools and teachers to remain attentive and keep up with learning new technologies to meet the demands of the ever-changing times.

7.0 CONCLUSION

The purpose of this study was to explore the potential application of virtual reality (VR) technology in fostering creativity among students majoring in visual communication at Chinese universities, meeting the growing demand in the digital and visual expression fields. By comprehensively reviewing existing research on the use of VR technology in education and conducting surveys and experiments with students majoring in visual communication, this study delved into the impact of VR technology on fostering creativity in students.

Traditional teaching methods have had limitations in nurturing student creativity, such as restricted creative space and a lack of personalized creative experiences. However, the results of this study demonstrate that by fully leveraging the advantages of VR technology, we can explore its innovative application in fostering creativity among students majoring in visual communication at universities. The interactivity and immersion in the VR environment enable students to freely explore creative ideas and expand their creative thinking, thereby inspiring more creative design works.

VR technology simulates design works and their environments, reproducing real-life scenarios, allowing students to immerse themselves in an experiential learning environment, enhancing the spatial intuition in visual communication design courses. It not only supplements teaching but also integrates artistic aesthetics with education, enriching teaching scenarios and improving learning methods. Furthermore, the "embodied cognition" function provided by VR technology offers students experiences that traditional teaching cannot provide, fostering and stimulating their imagination and creativity, increasing their interest in learning, and deepening cognitive understanding.

In conclusion, this study holds significant importance in promoting the application of virtual reality technology in fostering creativity among students majoring in visual communication at Chinese universities. As a crucial digital tool, VR technology provides new avenues and possibilities for the teaching and development of students' creativity in visual communication majors at universities, offering beneficial exploration and practice for the widespread application of virtual reality technology in arts and design education in the future.

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A Conceptual Framework for Enhancing Students' Scientific Creativity in Chemistry Learning

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Abstract

Scientific creativity is the ability to provide creative ideas or solutions in science. This skill is very important to pay attention to because almost two decades of research on scientific creativity has been studied and many science educators agree that this skill is important to implement in the science classroom. Along with that, many research results found that the scientific creativity of students was still low. Therefore, there is a need for an effort to increase scientific creativity, especially in chemistry learning due to the close relationship between chemistry and everyday life. This study aims to develop a conceptual framework as an effort to increase the scientific creativity of students in chemistry learning. This study was qualitative research with literature review using articles and books. A conceptual framework is module development-based Problem Based Learning integrated with Scientific Structure Creativity Model. This conceptual framework was produced to enhance scientific creativity in chemistry learning. Thus, the existence of a conceptual framework can be widely used in increasing scientific creativity.

Keywords: Conceptual Framework, Scientific Creativity, Chemistry, Secondary School Student

Abstrak

Kreativiti saintifik merujuk kepada keupayaan untuk memberikan idea-idea atau penyelesaian yang kreatif dalam sains. Kemahiran ini sangat penting untuk diberi perhatian kerana hampir dua dekad penyelidikan mengenai kreativiti saintifik telah dikaji dan ramai pendidik sains bersetuju bahawa kemahiran ini penting untuk dilaksanakan dalam bilik darjah sains. Bersama dengan itu, banyak hasil kajian mendapati bahawa kreativiti saintifik pelajar masih rendah. Oleh itu, terdapat keperluan untuk usaha meningkatkan kreativiti saintifik, terutamanya dalam pembelajaran kimia kerana hubungan rapat antara kimia dan kehidupan seharian. Kajian ini bertujuan untuk membangunkan satu kerangka konseptual sebagai usaha untuk meningkatkan kreativiti saintifik pelajar dalam pembelajaran kimia. Kajian ini adalah kajian kualitatif dengan kajian literatur menggunakan artikel dan buku. Satu kerangka konseptual berdasarkan pembangunan modul berdasarkan Pembelajaran Berdasarkan Masalah yang terintegrasi dengan Model Kreativiti Struktur Saintifik dihasilkan. Kerangka konseptual ini dihasilkan untuk meningkatkan kreativiti saintifik dalam pembelajaran kimia. Dengan itu, kewujudan satu kerangka konseptual ini boleh digunakan secara meluas dalam meningkatkan kreativiti saintifik.

Kata kunci: Kerangka Konseptual, Kreativiti Saintifik, Kimia, Pelajar Sekolah Menengah

1.0 INTRODUCTION

The skills required in the 21st century encompass essential abilities such as creativity, problem-solving, communication, critical thinking, innovation, reasoning, adaptability, managing complexity, and self-direction (Beers, 2011; Soland et al., 2013; The North Central Regional Educational Laboratory, 2003). These skills are intended to prepare individuals for the unique challenges of the present century, distinct from previous eras (Tirri et al., 2017). Among these skills, creativity stands out as particularly emphasized, as it is considered a crucial competency across various contexts in the 21st century (Chan & Yuen, 2014; Nakano & Wechsler, 2018; Soland et al., 2013; Tirri et al., 2017; Zulkarnaen et al., 2018).

The significance of creativity lies in its involvement with higher-level thinking. It proves valuable in offering solutions to diverse problems through the generation of creative ideas. In the educational realm, creativity is defined as students' ability to engage in learning activities to discover and implement new and unconventional ideas while still maintaining logical and rational thinking (Gunawan et al., 2018). Thus, the educational field places importance on the process of uncovering and developing creative potential (Kanematsu & Barry, 2016).

Within the realm of science, creativity is defined as scientific creativity (Aktamiş et al., 2005). Scientific creativity encompasses an individual's capacity for generating numerous original ideas and hypotheses from different domains to address problems (Antink-Meyer & Lederman, 2015; Kirimi et al., 2017). Creative potential in science is multifaceted, as evidenced by the three dimensions of scientific creativity: product (science phenomena, science problems, technical product science knowledge), trait (fluency, flexibility, originality), and process (thinking, imagination) (Hu & Adey, 2002).

For nearly two decades, many science educators have recognized the significance of implementing scientific creativity in science classrooms (Andiliou & Murphy, 2010; Astutik et al., 2020; Hu & Adey, 2002; Kind & Kind, 2007; Liu & Kind, 2007; Liu & Lin, 2014; Neumann, 2007; J.-W. Park, 2004; J. Park, 2011). This is due to the benefits associated with scientific creativity, such as problem-solving from a scientific perspective and the development of superior scientific thinking (Demir, 2014; O'Donoghue et al., 2014). It also contributes to fostering students' abilities in acquiring scientific knowledge and solving scientific problems (Wang & Yu, 2011), acting as an overview of an individual's thinking skills in producing original ideas to address problems (Antink-Meyer & Lederman, 2015).

In the context of chemistry education, there have been limited studies reporting on students' scientific creativity levels. Unfortunately, these studies indicate that students' scientific creativity remains low. For instance, in Kenya, students' level of scientific creativity in learning chemistry was found to be low (Ikiao, 2019; Kamonjo, 2019). Similarly, low levels of scientific creativity were observed among Malaysian students studying chemistry (Jamal et al., 2020; Omar et al., 2017). It raises question "How to increase scientific creativity in chemistry?". This study aims to develop a conceptual framework in enhancing scientific creativity.

2.0 LITERATURE REVIEW

Scientific Structure Creativity Model

There are many scientific creativity models, one of models that includes general aspect of scientific creativity, namely scientific structure creativity model. It consists of scientific knowledge (Kind & Kind, 2007), producing product, (S. Suyidno et al., 2020), producing idea, scientific problem (Aktamiş et al., 2005; Antink-Meyer & Lederman, 2015; Kirimi et al., 2017), thinking & imagination (Ren et al., 2012; Wieslawa, 2003), and involving scientific activities (Obote, 2016). Thus, this model mostly is used in scientific creativity studies.

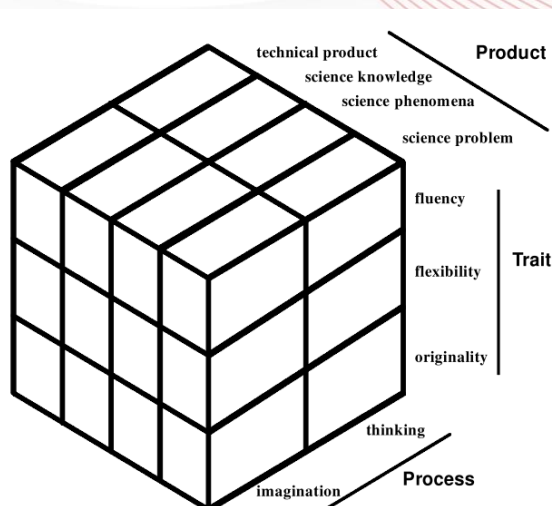


Figure 1 Scientific Structure Creativity Model

There are three dimensions of scientific structure creativity model namely: product, trait and process. In the realm of product dimension, there exist four main components: technical product, science knowledge, science phenomena, and science problem. Science problems are challenges that necessitate scientific knowledge for resolution. By introducing such scientific problems to students, it is likely to stimulate their creativity, leading to innovative scientific solutions. Scientific phenomena encompass natural physical events or occurrences that can be scientifically explained. As Johnston (2005) suggests, students' understanding of scientific concepts is closely linked to the scientific phenomena they encounter in their daily lives. On the other hand, scientific knowledge is the result of a systematic study conducted through the scientific method, relying on observable and measurable evidence (Wilson, 1998), and is widely accepted within the scientific community. This knowledge is rooted in various scientific fields like Physics, Biology, Chemistry, Geology, and Engineering. Technical products refer to science-based engineering technologies designed to fulfill specific tasks, subject to continuous innovation. According to Hu & Adey (2002), technical products must serve a purpose, embody creative thinking in science, apply scientific knowledge to overcome a scientific problem, and be associated with a scientific phenomenon.

When exploring scientific creativity, Hu & Adey (2002) outline the process dimension, which comprises thinking and imagination. In this context, thinking is a valuable tool for generating excellent solutions, as it allows for a broad range of diverse and varied ideas. Creative thinking often involves divergent thinking, as highlighted by Hu & Adey (2002). Imagination, the second aspect of the process dimension, is crucial for cultivating individual creativity. It gives rise to novel and original ideas and plays a significant role in fostering creativity.

The third dimension, trait, encompasses flexibility, fluency, and originality. These traits play a pivotal role in an individual's level of creativity and their ability to think creatively. Creative individuals possess the capability to approach problem-solving with flexibility and are adept at making decisions, which they can effectively express through writing or verbal communication. By demonstrating their understanding of scientific phenomena using creative thinking, students showcase their fluency, flexibility, and originality. The quantity and relevance of students' experiences with phenomena act as a measure of their scientific imagination. Moreover, their ability to apply creative thinking to showcase scientific knowledge also serves as an assessment of their fluency, flexibility, and originality.

Problem Based Learning

Since the 1960s, Problem-Based Learning (PBL) has gained widespread popularity worldwide, and over time, its concepts have become more flexible and adaptable (de Graaff & Kolmos, 2019). As a result, PBL has been extensively implemented and continues to gain traction across

various disciplines. Researchers have offered several definitions of PBL from different perspectives. Raiyn & Tilchin (2015) view it as a model that aids students in enhancing their problem-solving skills to arrive at their own conclusions. Yazar Soyadı (2015) identifies PBL as an educational approach aimed at nurturing competent individuals capable of resolving real-life issues.

Based on the above explanation, it can be deduced that problem-based learning possesses distinct characteristics demonstrated through the steps of each PBL model. Table 1 presents a comparison of various problem-based learning models based on their characteristics that potentially influence scientific creativity, such as problem identification and understanding (Iqbal et al., 2018), brainstorming (Ho et al., 2013; Siew, et al., 2015), discovery (Kwon et al., 2006; Ward & Lee, 2002), and evaluation (Saleh et al., 2017; Wang, 2018).

Table 1 Comparison of Problem-Based Learning Model

Aspect	Model					
	Schmidt (1983)	Wood (2003)	Tan (2002)	Jansson, et al (2015)	Valdez & Bungihan (2019)	
Identifying problem			/	/	/	
Understanding problem	/	/	/			
Brainstorming	/	/	/	/	/	
Discovery			/			
Evaluation		/	/	/		

The approach to the problem is of utmost importance as it holds the potential to foster creativity (Iqbal et al., 2018). According to Table 1, all PBL models start by approaching a given problem. However, Tan (2002) stands out with the most complex steps in approaching the problem, where PBL begins by identifying the problem first and then delving into understanding it.

Furthermore, brainstorming is an integral aspect found in all PBL models. It is a valuable activity that supports imagination and critical thinking (Ho et al., 2013), and teachers should encourage their students' scientific creativity through brainstorming (Siew, et al. 2015). Additionally, all PBL models offer equal opportunities for students to work with problems, which is essential as scientific problems are fundamental in stimulating scientific creativity (Antink-Meyer & Lederman, 2015; Hu & Adey, 2002; Kirimi et al., 2017).

Moreover, among the described PBL models, only Tan's (2002) model includes a step for discovery. Discovery activities are beneficial in encouraging students to find solutions and express ideas, thereby stimulating creative thinking (Tan et al., 2009) and enhancing their creative abilities (Kwon et al., 2006; Ward & Lee, 2002). This aspect relates to fluency, flexibility, and originality, as providing ample opportunities for students to think scientifically and engage with novel ideas is beneficial (Gupta & Sharma, 2019).

The last aspect is evaluation, which is useful in assessing students' learning experiences during the process (Saleh et al., 2017; Wang, 2018). In this study, evaluation is valuable in observing the extent of students' scientific creativity. Wood's (2003), Tan's (2002), and Jansson et al.'s (2015) problem-based learning models involve evaluation as part of the PBL process. After comparing the models, only Tan's (2002) PBL model fulfills all the criteria for enhancing scientific creativity. Therefore, this study adopts Tan's PBL model.

3.0 DISCUSSION

The conceptual framework is produced based on the results of the literature review. Thus, it produced a conceptual framework as showed in Figure 2.

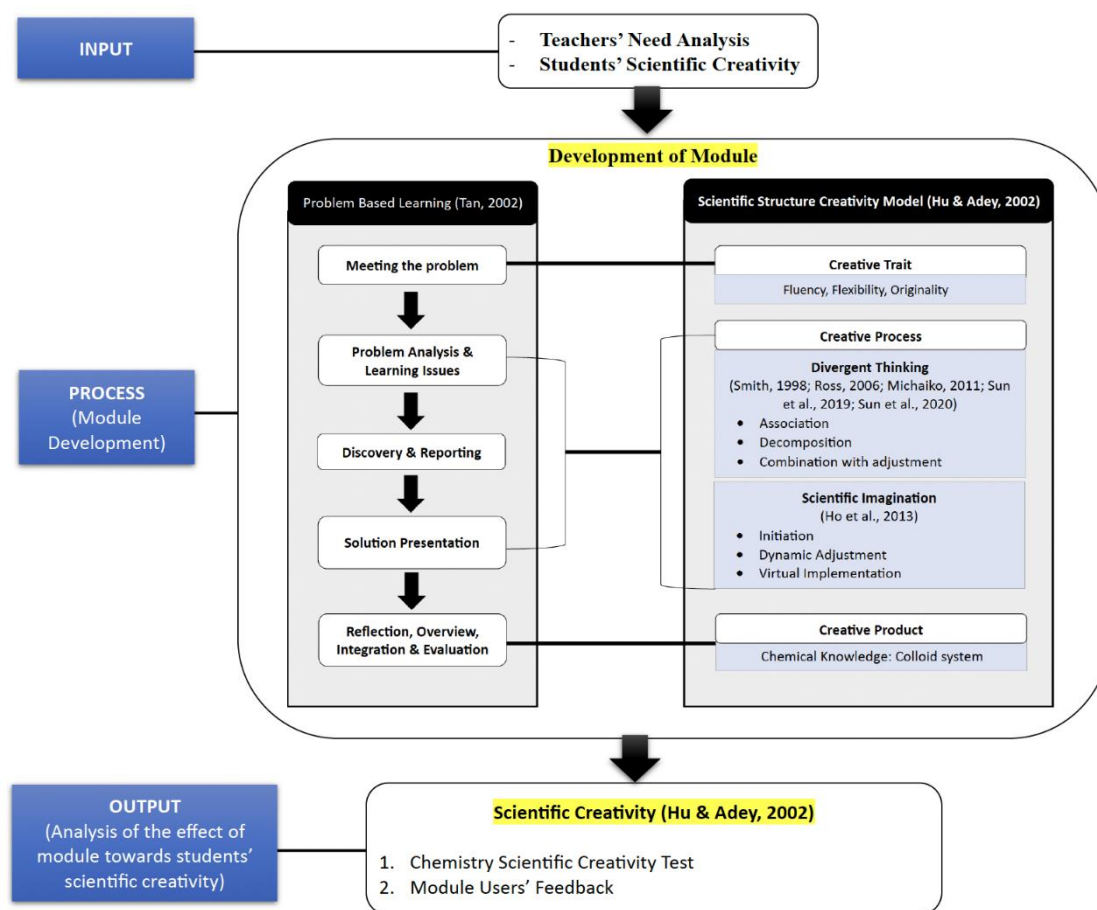


Figure 2 Conceptual Framework

Based on Figure 2, there are three main components of conceptual framework. The first component is input which aimed to find out the level of scientific creativity and how the teacher's role in supporting scientific creativity in chemistry learning. The result of teachers' needs analysis and students' scientific creativity level overview is the basic of module development. Based on students' scientific creativity result, it shows that level of scientific creativity of students is unsatisfied. However, need analysis result show that chemistry teachers have tried to carry out the learning process properly, namely student-centered learning. However, they still need the right guidelines to increase the scientific creativity of students to ensure whether the learning process that has been implemented so far is in line with the development of scientific creativity or not.

The result of input shows that module is needed as guideline to enhance scientific creativity of students. To enhance scientific creativity, learning cannot be teacher-centered, it should be student-centered learning because it will hindered students being passive so that students' creativity are never emerged (Arifuddin et al., 2020; Arwita, 2014; Ramadhani & Sirait, 2015; Wicaksono et al., 2017). Also, it is important to encourage students to think outside their habits,

involve new ways of thinking, provide opportunities to convey new ideas and solutions, ask unusual questions, and propose possible solutions to problems (Suyidno et al., 2016). One of learning models adhere to student-centered learning is Problem Based Learning. Through Problem-based learning, students can build their problem-solving skills so that they are given the opportunity to solve problems in a collaborative way and involve their thinking process (Raiyn & Tilchin, 2015; Yew & Goh, 2016). However, problem-based learning still lacks an emphasis on the relationship between problems and creativity (Jamal et al., 2020). It is line with Siew et al (2015) which stated that Problem-based learning alone is insufficient, so it needs another aspect to make it more sufficient to enhance scientific creativity. Thus, module is developed based on Problem Based Learning (Tan, 2002) integrated with Scientific Structure Creativity Model (Hu & Adey, 2002). The following Table 2 shows the detail of integration of Problem Based Learning and Scientific Structure Creativity Model.

Table 2 Detail of integration of Problem Based Learning and Scientific Structure Creativity Model

Problem Based Learning (Tan, 2002)	Scientific Structure Creativity Model
<p>Meeting the problem</p> <ul style="list-style-type: none"> • Individual reading, reflection, and inquiry • Commitment to team roles and to the group • Commitment to deliberate on problem scenario and problem analysis 	<p>Creative Trait</p> <ol style="list-style-type: none"> 1. Fluency (Students' ability in producing relevant ideas, answers, and solutions for chemical problems with a smooth flow of thought (Nada & Sari, 2022)). 2. Flexibility (Students' ability to solve problems in multiple ways (Nada & Sari, 2022)). 3. Originality (Students' ability to answer chemical problems in a unique way (Nada & Sari, 2022)).
<p>Problem Analysis & Learning Issues</p> <ul style="list-style-type: none"> • Students are required to work independently on their own, searching for information through various resources. • Brainstorming and analysis of problem (generation of possible explanations) • The groups make list of problems amongst themselves and agree to seek information from any kind of resources and then coming back with better-informed explanations to the problems and questions posed 	<p>Creative Process</p> <p>Divergent Thinking</p> <ol style="list-style-type: none"> 1. Association Associating the situation that occurs with concept or theories (Sun et al., 2020) 2. Decomposition After the association phase, decomposition can produce additional search cues. This process is describing the situation with rich details which may offer stimuli that enable a wider variety of cognitive associations (Sun et al., 2020) 3. Combination with Customization This process allows for the combining of two or more related elements derived from situations, objects, and concepts into a single new conclusion (Sun et al., 2020).
<p>Discovery & Reporting</p> <ul style="list-style-type: none"> • Students do self-directed learning by looking for solutions from various of resources. • Students have discussion session (peer-teaching stage) which students share the new information that they individually discovered to group • The group makes report of their finding 	<p>Scientific Imagination</p> <ol style="list-style-type: none"> 1. Initiation: At this point, the emphasis is primarily on the number of solutions that students can come up with. The main goal at this stage is to use imagination to come up with solutions to issues that students or others may encounter in everyday life. The term "brainstorming" refers to this stage of the process of generating many ideas without respect to usual boundaries or frameworks (Ho et al., 2013). 2. Dynamic Adjustment Students connect as many ideas as they can (Ho et al., 2013) 3. Virtual Implementation
<p>Solution Presentation</p> <ul style="list-style-type: none"> • The group do presentation about their new knowledge obtained 	

Students can refine their previous activities to create a prototype for their specific ideas (Ho et al., 2013)

Reflection, Overview, Integration & Creative Product Evaluation

- *Students reflect on the new knowledge they have learnt as a result of the problem* Chemical knowledge about colloid system
- *Self-evaluation as learners in term of problem solver, as self-directed learner and as members of the team*

Based on Table 2, step 1 (meeting of problem) is combined with creative trait (fluency, flexibility, and originality). At the end of problem scenario, the students are encouraged to express their solutions/ideas/answers refer to characteristic of fluency, flexibility, and originality. Furthermore, step 2 (problem analysis & learning issues), step 3 (discovery & reporting), and step 4 (solution presentation) are integrated with divergent thinking steps by (Sun et al., 2020) and scientific imagination steps by (Ho et al., 2013). The activities in the module refer to main goal of each step. The last step in Problem Based Learning is reflection, overview, integration, and evaluation which include students' activity to reflect on their chemical knowledge about colloid system as their creative product. Students also do self-reflection as learners in term of problem solver, as self-directed learner and as members of the team. Thus, the activities in the module refer to characteristics of both model as the way to enhance scientific creativity of students.

The last component of conceptual framework is output as the benchmark of effectiveness module in enhancing scientific creativity. To make sure that module developed can enhance scientific creativity, pre and post test questions are distributed to students to find what extend of module can enhance scientific creativity. Besides, interview is carried out among students and teacher that implement module to see their feedbacks.

4.0 CONCLUSION

Scientific creativity is an ability that must be possessed by students in facing the demands of 21st century learning and to make students able to provide creative ideas in solving problems in the future. Therefore, efforts are needed to increase students' scientific creativity, especially in chemistry learning. The close relationship between chemistry and real life makes it important to develop students' scientific creativity in learning chemistry. The results of the literature study that has been carried out produce a conceptual framework that has the potential to increase scientific creativity. Problem Based Learning is a model of learning that adheres to constructivism theory in which student-centered learning is based. Through problems that become the main component in Problem Based Learning, students are accustomed to solving future problems. In addition, to train students to express their creative ideas, Problem Based Learning is combined with the Scientific Structure Creativity Model with three main dimensions, namely creative trait, process, and product. Therefore, the integration of Problem Based Learning and the Scientific Structure Creativity Model can be a way to enhance students' scientific creativity in chemistry learning.

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Comparison of the assessment of students' physics curriculum in Finland and mainland China

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Abstract

Finnish students have received worldwide attention for their excellent performance in the Programme for International Student Assessment (PISA). In this paper, we will focus on the physics curriculum, analyze the Finnish school-based assessment and compare it with the Chinese approach. The Finnish school-based assessment of the physics curriculum is divided into student self-assessment and teacher assessment, which can really help students to acquire knowledge, but the system lacks standardization and requires more investment in education. It is therefore more suitable for smaller countries with similar conditions to Finland to follow.

Keywords: Physics Curriculum, Assessment, Finland, Mainland China

Abstrak

Pelajar Finland telah mendapat perhatian seluruh dunia kerana prestasi cemerlang mereka dalam Program Penilaian Pelajar Antarabangsa (PISA). Dalam kajian ini, kita akan memberi tumpuan kepada kurikulum fizik, menganalisis penilaian berasaskan sekolah Finland dan membandingkannya dengan pendekatan di China. Pentaksiran kurikulum fizik berasaskan sekolah Finland dibahagikan kepada penilaian sendiri pelajar dan penilaian guru, yang benar-benar boleh membantu pelajar memperoleh pengetahuan, tetapi sistem itu tidak mempunyai piawai dan memerlukan lebih banyak pelaburan dalam pendidikan. Oleh itu, ia lebih sesuai untuk diikuti oleh negara-negara kecil dengan keadaan yang serupa dengan Finland.

Kata kunci: Kurikulum Fizik, Pentaksiran, Finland, Tanah Besar China

1.0 INTRODUCTION

As countries move towards more equitable and fair education, the assessment of students is evolving (Vainikainen & Harju-Luukkainen, 2020). Different countries and regions have different economic and political contexts and therefore different countries have different methods of assessing students. In education systems around the world, UCLES (2017) states that School Based Assessment (SBA) is being promoted globally (MECY, 2006; Cheng, Andrews & Yu, 2010, Black, 2013), which refers to teachers assessing students based on their performance in the classroom and other school-related activities such as assignments, projects, presentations and tests to assess students' progress and achievement (Mkpae & Obowu-Adutchay, 2017). This method of assessment provides a more comprehensive and holistic view of students' abilities and performance as it considers not only their knowledge but also their skills, attitudes and behaviours.

SBA not only has a significant impact on students' motivation, self-esteem and confidence (Black & William, 1998), but it also has a positive impact on student achievement (Mkpae & Obowu-Adutchay, 2017). Finnish education has consistently performed relatively well in international student assessments and has therefore received a great deal of international attention to the Finnish education system. In the PISA 2000, 2003 and 2006 studies, Finnish 15-

year-olds were above average in reading, mathematics and science literacy (Kupiainen & Hautamäki, 2009).

Therefore, this paper will focus on the subject of physics and discuss the Finnish approach to student assessment.

Provide an introduction and an overview of your proposed research. Objectives should also be included in this section.

2.0 LITERATURE REVIEW

School-based assessment in the physics curriculum aims to provide a more comprehensive and authentic assessment of students' physics knowledge and skills. SBA is conducted by teachers during the lesson and can integrate assessment and instruction (Yates & Johnston, 2018). For example, SBA in physics allows students to demonstrate their understanding of physics concepts and laws through a variety of school-based activities (e.g. laboratory experiments, practical investigations, group work, projects and assignments) and teachers to mark students' classroom performance, project findings, etc., which can be used to change lesson plans and help students in their subsequent learning.

In the context of physics, SBA may involve students conducting experiments or investigations to collect and analyse data, formulate and test hypotheses, and design and construct models to represent physical phenomena. These activities can help students develop critical thinking and problem-solving skills, and enhance their understanding of physical concepts and their relevance to practical applications. The use of SBA in Physics is therefore of great benefit to students.

SBA in Physics is often contrasted with traditional assessment methods, such as standardised tests and examinations, which may not provide a comprehensive picture of students' abilities and may not accurately reflect their understanding of physics concepts. SBA can provide students with more detailed and specific feedback, enabling them to identify their strengths and weaknesses and allowing them to improve themselves more clearly.

In Finland, for the first four years of basic education, physics is taught in the context of 'Environmental and Natural Studies', in the fifth and sixth years in 'Physics and Chemistry'. From the seventh year onwards, physics is taught as a separate subject. A compulsory physics course and seven specialised physics courses are included in the upper secondary school curriculum (Finnish Ministry of Education and Culture, 2022).

The assessment of the physics curriculum in Finland emphasises students' achievements in different areas of study (Üstün, 2010). In the Finnish school-based assessment, there is a division into self-assessment by students and assessment by teachers. According to the Finnish Ministry of Education and Culture (2022), student assessment in Finland is guided by the curriculum; teachers assess according to the objectives given in the curriculum; student grades are published at the end of each course; there are no rankings; and the final grade for the Basic Education Certificate is given by the teacher once the student has reached the age of 16.

According to Voogt & Kasurinen (2005), at the end of each semester students receive a course report which contains previous assessments in the classroom, as well as a self-assessment form for the student. In the self-assessment, students establish their expected grades for each course, assess their study habits, their behaviour and performance in class and whether assignments were completed. After this, students receive a mark from the teacher and if there is a discrepancy of two marks, students can discuss this with the teacher.

In primary science classrooms, teachers often use tests and test-like scenarios (but avoid presenting them as tests) where they are usually graded or marked on a scale of 'very good', 'needs practice'. Also, these results are not usually provided to students or parents and are only used by teachers to plan student learning (Hendrickson, 2012). In the classroom, teachers often provide feedback to students on their progress in the classroom. During student-teacher interactions, teachers assess student behaviour, working skills and content knowledge.

In addition, teachers regularly communicate these results with parents (Hendrickson, 2012). "In January there is a meeting where are student, teacher and parents. Abilities and they have a short assessment meeting together." (Finnish Ministry of Education and Culture, 2022)

3.0 DISCUSSION

The aim of SBA in Finland is to improve student learning, it is "encouraging and supportive by nature" (Finnish National Board of Education, 2010). For students learning physics, this model of assessment helps students to truly grasp physics knowledge. In terms of how students are assessed, Finland has a combination of Formative Assessment and Summative Assessment (Hendrickson, 2012). In this way, Finnish students have the opportunity to identify and address their problems before they take the national university entrance examinations, as there is always room for school-based assessment and local interpretation.

Assessment in China is based on the Guidance Outline for Supervision and Assessment of General Primary and Secondary Schools issued by the former State Education Commission in 1997. Each province and municipality develops an index system and implementation plan for the supervision and assessment of primary and secondary schools, and schools are responsible for the overall implementation of supervision and assessment (Ministry of Education of the People's Republic of China, 2012). Student assessment in China is Summative Assessment, which is exam-based (Creese, Gonzalez, & Isaacs, 2016). In Shanghai, for example, the city's education department organizes the assessment of students with uniform questions, examinations, and online scoring (Shanghai Municipal Education Committee, 2023). After the assessment, Chinese students only know their scores and where their grades stand and do not know in detail their strengths and weaknesses. In the case of junior high school students entering senior high school, schools assess students' entry into senior high school based on their junior high school academic level examination results (Shanghai Municipal Education Committee, 2023). When high school students take the GCSEs, they are only assessed on the basis of 11 grades: A+, A, B+, B, B-, C+, C, C-, D+, D, and E (Shanghai Municipal Education Committee, 2021). In this respect, therefore, the Finnish school-based assessment is worth learning from China. In the process of assessing students, not only are marks awarded, but students are also provided with targeted feedback and guidance to help them identify their strengths and weaknesses and provide avenues for improvement to facilitate their growth.

In Finland, teachers are responsible for monitoring the quality of teaching and learning in the classroom and there are no pre-defined learning outcomes in the national curriculum (Lavonen, Krzywacki & Koistinen, 2012), so schools and teachers have more freedom to implement the curriculum in a purposeful way. Finnish classroom assessment practices allow teachers to assess and change instruction according to student's needs, and frequent assessment in the classroom enables teachers to identify students' difficulties in learning and provide interventions in a timely manner (Hendrickson, 2012). Thus, the Finnish model of student assessment increases teacher autonomy and decision-making power and can be truly student-centered, facilitating student learning and effectively improving student performance in physics. In China, the authors found no relevant literature referring to the role of teachers in student assessment. According to interviews with teachers (Hohhot, Inner Mongolia Autonomous Region, China), teachers are not responsible for assessing students, but only for imparting knowledge to students and preparing them for a standardized examination. Similarly to Finland, Chinese teachers observe students' performance in the classroom and analyze their test results, but the aim is to tailor the teaching to the student's needs, design teaching methods to target them, implement differentiated teaching and prepare them to take the assessment (Jiang, 2016). In this respect, teachers in China can learn from Finnish school-based assessments, which assess students through their performance in the classroom and promote student learning.

Assessment practices in Finland reduce the pressure on teachers to prepare students for exams (Hendrickson, 2012), and therefore teachers have more time and energy to devote to improving student learning. In contrast, Chinese assessments require teachers to prepare students for further education, and therefore teachers must focus more on improving student achievement.

However, there are many aspects of Finnish school-based assessment that are not suitable for China.

In Finland, an annual assessment of students by students, parents, and teachers gives parents a clearer picture of their students' learning (Voogt & Kasurinen, 2005). In China, after each examination, usually mid-term and final, the school organizes a parents' meeting, which is organized by the class teacher and attended by teachers of all subjects, where teachers and parents explain the students' performance at school. Also, the parent-teacher meetings are followed by one-to-one conversations between teachers and the parents in detail.

The Finnish educational assessment system lacks standardization (Harju-Luukkainen, McElvany & Stang, 2019) and is only applicable to a small country or a country with similar circumstances to Finland (Hendrickson, 2012). China, on the other hand, is a country with a large population, a very large student base and complex educational issues.

In the Finnish assessment model, the physics classroom requires the participation of both the teacher and the teaching assistant, which requires more investment in education. In China, the problem now faced is educational equity and uneven regional development (Cao, 2019), with educational resources seriously lagging behind in rural areas and underdeveloped regions. Therefore, from this perspective, the Finnish assessment model is only suitable for some large cities in China, e.g. Shanghai, Beijing, etc.

Finnish school-based assessments are very helpful for hard-working students, but not for gifted students (Hendrickson, 2012). Without materials and lessons for gifted students, gifted students are bored in the classroom and there is no way to promote learning for gifted students. However, there is a special education model for gifted students in China, the Junior Class, which is located at three universities, the University of Science and Technology of China, Xi'an Jiaotong University, and Southeast University.

The Finnish model of school-based assessment is an excellent way, for physics subjects, to make real progress for students. During frequent classroom assessments, students are able to identify their problems and make improvements with the help of their teachers or teaching assistants (Hendrickson, 2012). Teachers also use the assessments to change their lesson plans, making them student-centred and truly teaching for the sake of student progress. Finland's school-based assessment is therefore a worthwhile model for China and other countries.

However, in terms of communication between teachers, parents, and pupils, the parent-teacher meetings after each exam in China allow for timely and targeted communication with parents about their pupils' problems at this stage of their lives, which is more detailed and targeted than the annual parent-teacher assessment in Finland. The Finnish assessment model, which lacks standards, is not suitable for the Chinese assessment system due to the size of the population and the different national conditions. At the same time, due to the current uneven development of education in China (Cao, 2019) and serious regional differences in educational resources, the Finnish model of joint participation of teachers and teaching assistants during lessons cannot be replicated on a large scale. For the education of gifted and talented students, Finland clearly does not do as well as China.

Therefore, from the above aspects, the Finnish assessment model is only suitable for small-scale, replication in some major cities in China, such as Beijing and Shanghai.

In addition, the few school-based assessments related to physics found in this study do not provide an accurate picture of the Finnish school-based assessment of physics at different stages of the curriculum, and more examples of the Finnish physics curriculum at the secondary level should be collected for analysis in the future study. China and Finland are very different, and so are their assessment models. Therefore, it is important to adapt to local conditions when learning from each other and not to copy them completely.

4.0 CONCLUSION

This report highlights the implementation of the school-based assessment method for physical education in Finland and its benefits and shortcomings. As well as a comparison of the assessment methods in China and Finland. Student self-assessment and teacher assessment in Finnish school-based assessment can provide students with a clear picture of their own learning (Finnish Ministry of Education and Culture, 2022). Frequent classroom assessments can also improve student learning outcomes and enhance teacher-student collaboration. The Chinese education model is test-based and students are assessed through summative assessment, through examinations (Kirkpatrick & Zang, 2011). There is no way to give students clear goals in terms of feedback to them, but there is good communication between students, parents and teachers and the development of gifted students. Therefore, in the end, further improvements to the assessment methods in China and Finland could be appropriate to learn from each other, making the assessment methods more inclusive and providing a better model for other countries.

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Discovering Learning Difficulties and Epistemology in Force and Motion among Secondary School Students

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Abstract

Researchers in the field of science education have identified several instruments to assess students' understanding of concepts, learning difficulties, and epistemology of physics. However, students' understanding is still an issue, even for basic concepts and solving problems on the topic of force and motion. The objective of this study is to identify learning difficulties and students' epistemological beliefs about the topic of force and motion among secondary school students. A total of 150 students from each of the three secondary schools in the Kota Tinggi District will be selected based on the school's achievements and the performance of students who have studied the topic of force and motion. This study will be conducted using a mixed-method approach based on a cultural approach to understand what students do (practice) and how it happens more deeply. A survey and interview session will be conducted to identify factors that influence students' perspectives, beliefs, and understanding of the topic of force and motion. Data will be analyzed using statistical analysis (Statistical Package for Social Sciences (SPSS) version 26.0) for quantitative inquiry and thematic analysis for qualitative inquiry. Statistical analysis will produce the main themes and codes of the study. The findings of the study will show the factors that affect the difficulty of learning and solving problems in the topic of force and motion. While in terms of epistemology, students' epistemological beliefs will be determined by their perspective, attitude, and practice in learning physics. In conclusion, learning difficulties and epistemological beliefs have a relationship that determines the understanding of the topic of force and motion for secondary school students.

Keywords: Learning difficulties; epistemology; force and motion; physics; secondary schools

Abstrak

Penyelidik bidang pendidikan sains telah mengenal pasti beberapa instrumen untuk menilai pemahaman konsep, kesukaran pembelajaran dan epistemologi pelajar terhadap fizik. Walau bagaimanapun, pemahaman pelajar masih menjadi masalah terutamanya berkaitan penyelesaian masalah dalam topik daya dan gerakan. Objektif kajian ini untuk mengenalpasti kesukaran pembelajaran dan kepercayaan epistemologi pelajar tentang topik daya dan gerakan dalam kalangan pelajar sekolah menengah. Seramai 150 pelajar dari setiap tiga sekolah menengah di Daerah Kota Tinggi akan dipilih berdasarkan pencapaian sekolah dan prestasi pelajar yang telah mempelajari topik daya. Kajian ini akan dijalankan menggunakan pendekatan kaedah campuran (mixed method) berdasarkan pendekatan budaya untuk memahami apa yang pelajar lakukan (amalan) dan bagaimana ia berlaku dengan lebih mendalam. Satu tinjauan dan sesi temu bual akan dijalankan untuk mengenalpasti faktor yang mempengaruhi perspektif, kepercayaan, dan pemahaman pelajar tentang topik daya dan gerakan. Data akan dianalisis dengan menggunakan analisis statistik untuk inkuiri kuantitatif dan analisis tematik untuk inkuiri kualitatif. Dapatan kajian akan menunjukkan faktor-faktor yang mempengaruhi kesukaran pembelajaran dan penyelesaian masalah dalam topik daya dan gerakan. Manakala dari segi epistemologi, kepercayaan epistemologi pelajar akan ditentukan oleh perspektif, sikap, dan amalan mereka dalam pembelajaran fizik. Kesimpulannya, kesukaran pembelajaran dan kepercayaan epistemologi mempunyai hubungkait yang menentukan kefahaman dalam topik daya dan gerakan terhadap pelajar sekolah menengah.

Kata kunci: Kesukaran pembelajaran; epistemologi; daya dan gerakan; fizik; sekolah menengah

1.0 INTRODUCTION

In Malaysia, science stream is an elective course that students may choose to take throughout their upper secondary years, or the final two years of their secondary education (Curriculum Development Centre Ministry of Education Malaysia, 2005). The goal of a science curriculum is to create engagement of students who can participate in scientific inquiry through practical activities and experiments (Lee & Sulaiman, 2018). It is also closely related to learning about the environment and daily life. According to Fitriana and Mardiana (2022), science is concerned with how to learn about nature in a systematic manner, so science is not only a collection of knowledge in the form of facts, concepts, or principles, but it is also a process of life discovery. Therefore, science stream education places a strong emphasis on giving students hands-on experience to build skills that will enable them to explore and comprehend their environment scientifically.

As we are so far from meeting our goal for the 60:40 policy between science stream and art stream students, it has caused a high time for Malaysia (Ziad et al., 2021). This will indirectly affect Malaysia's ranking in the world's global education rankings. Based on assessments that have been conducted, the majority of students have expressed a complete lack of interest in STEM education (MOE, 2013; MOE, 2017; Shahali et al., 2017; Radzi & Sulaiman, 2018; Sabudin et al., 2018). This is due to their limited awareness of STEM, their negative perception of STEM subjects, and the current STEM curriculum content, which is not significantly relevant to their daily lives.

Physics, as one of the foundations in STEM education, creates a negative impression in learning STEM because it is known as one of the most difficult subjects (Ziad et al, 2021). The difficulty level of students in understanding the basic concept of physics has demotivated the students in pursuing STEM, especially in physics education. At the beginning of their studies, even though the teaching method of the educators in Malaysia is in accordance with the teaching method in foreign institutions, they are still unable to assimilate the physics concept. Nowadays, there are currently emerging concerns about the teaching and learning of physics, given the decline in secondary school students' interest in the subject (Erinosho, 2013; Ekici, 2016; Kapucu, 2016). This is due to their poor problem-solving skills and understanding of basic physics concepts. Therefore, it becomes more difficult for educators to plan their pedagogy strategies.

In the context of learning physics, epistemology plays an important role in understanding how we come to know about the natural world and how we can acquire knowledge about it. As noted by S. Singh and R. B. Steinberg (2010), physics education research has shown that students' epistemological beliefs about physics impact their learning, problem-solving, and conceptual understanding. Epistemology provides a framework for understanding how these methods of acquiring knowledge relate to each other and how we can evaluate the reliability of the knowledge that we obtain. The study from (Lising & Elby, 2005) stated that the physics education research community has begun to investigate students' attitudes, expectations, and epistemologies, including their knowledge and learning ideas. For example, students may think that physics knowledge is a collection of disconnected facts and formulas, or interconnected concepts often expressed as formulas. Therefore, this discipline-specific epistemology builds on extensive research in generalized epistemology.

2.0 METHODOLOGY

This study of research will be using the mixed method research approach as the research design. This study aims to identify learning difficulties and students' epistemological beliefs about the topic of force and motion among high school students. The research questions were formed based on searched questions and topics raised from previous studies which related to difficulties and epistemology in learning physics among secondary school students. The research questions are: 1) Is there any difference between students' learning difficulties in force and motion and their epistemological belief? 2) What influences students' epistemological belief in force and motion?

The study will be conducted in three secondary schools in Kota Tinggi District which involved 150 students from each school who had studied the force and motion topic before the study was conducted. The process of data collection was carried out through surveys and interview sessions. 10 survey questions were in a form of a 5-point Likert Scale questionnaire from 'Very Agree' indicated by "5" to 'Very Disagree' indicated by "1" will be distributed to the students who acted as the main respondents that consisting of several elements on the learning difficulties force and motion. The interview session will be conducted on 10 respondents who are randomly selected consisting of several elements that related to epistemological belief and perspectives of the respondents towards force and motion. The interview protocol will be created which includes 1 question as an introductory question, 7 key questions, and 2 closing questions that have been made available to the respondents. The answers given by the respondents will be recorded. The interview data is expected to support all the findings.

3.0 EXPECTED RESULT

From the study conducted, data of students who are still facing difficulties in learning and solving problems related to force and motion topics will be shown from the results of the questionnaires in the form of descriptive and inferential analysis. The factors that affect the difficulties of the students could also be identified. From the interview session conducted, the students' epistemological belief towards force and motion will be determined by their perspective, attitudes, and practices in learning physics in a class by using the thematic analysis with coding where the significant theme will be highlighted and the themes obtained will be used to explain what the students perspective views and become an element to the formation of their epistemology in learning force and motion.

4.0 DIFFICULTIES IN LEARNING AND SOLVING PHYSICS PROBLEMS: FORCE AND MOTION

Physics is widely acknowledged to be a conceptually challenging subject to learn and teach (Angell, Gutfersrud, Henriksen, & Isnes, 2004; Mualem & Eylon, 2007; Mulhall & Gunstone, 2008). In this era, many students were having difficulties in learning science stream subjects, especially physics. Besides, it remains the least favored subject among them. A study of high school students and teachers' perspectives on physics discovered that students find it "difficult" but "interesting" (Angell et al., 2004). Attempts to comprehend student misunderstanding and difficulties in learning physics typically include an analysis of how student reason about the material. Usually, it can be observed that students work on the same specific problems related to the basic concept, mathematical equations, and how to relate to daily life.

The term difficulty means that it is not easy to do something or understand or solve a problem. In terms of education, the term learning difficulties has usually been used. According to Kempa (2006), learning difficulties exist when students fail to understand and grasp the basic concept or idea. This is due to some factors which involved on the nature of the student's existing ideas or knowledge, or lack of such knowledge in relation to the concept acquired, the information-processing demand, and the complexity of a learning task in comparison to the student's information-handling capacity, problems in communication in term of language used, and the mismatch between teachers' learning approach and the student's preferred learning mode (Kempa, 2006). Other reasons may be students' responsibility for failure to learn where they lack interest, effort, and attention.

According to (Hastuti et al., 2012), many students in Indonesia have struggled to grasp basic physics concepts, particularly at the secondary school level. This occurs because teachers are constantly focused on solving physics problems from the physics textbook while teaching physics at school (Prihartanti et al., 2017). When solving physics problems, it encourages students to focus on physics formulas and calculation processes rather than the physics concept itself. Previous studies have shown that students often have several difficulties in solving physics problems including force and motion topics which involve in momentum and impulses (Adianto & Rusli, 2021). This can be seen from the students' exam scores which are still low (Adianto & Rusli, 2021). However, because of the teacher's lack of concern for these difficulties, many students continue to make the same mistake when solving momentum and impulse problems. Besides, in (Adianto & Rusli, 2021) study, there are some other factors that

affect the student's difficulties in learning and understanding the topics. Those factors include the student's inability to correctly write down variables provided on the question, along with their values and units, unable to use the correct equations, and to substitute the data into the equation. Furthermore, they also were still having difficulties in performing mathematical operations which include addition, subtraction, multiplications, and division (Adianto & Rusli, 2021).

5.0 STUDENTS' EPISTEMOLOGICAL BELIEF

Many studies have been conducted in recent years to explicate teachers' epistemological commitment and beliefs and their impact on classroom management (Clandinin, 1986; Tobin & Espinet, 1989; Tobin & Gallagher, 1987). Alternately, just a little research has been conducted to study the students' epistemological commitments and their impact on classroom learning and teacher beliefs (Roth & Roychoudhury, 1994). However, it appears reasonable to assume that students' perspectives on knowing and learning will influence their attitudes toward classroom activities, and what happens in the classroom is determined not only by how teachers conceptualize their roles but also by how students perceive and conceptualize their learning and their teacher's role.

Students' views about knowing and learning can have a significant impact on their learning outcomes and academic success. Research suggests that students' epistemology and views about knowing and learning are influenced by various factors, including their prior knowledge and experiences, cultural background, and educational environment (Lising & Elby, 2005). Students with a strong epistemological belief in the importance of effort and persistence tend to have higher academic achievement, as they are more likely to engage in deep learning and seek out challenging tasks. Furthermore, according to (Chiou et al., 2013), it can also impact their approach to learning. For example, students who believe that knowledge is fixed and cannot be changed tend to adopt a surface learning approach, where they focus on memorization rather than understanding. In contrast, students who believe that knowledge is malleable and can be improved through effort tend to adopt a deeper learning approach, where they focus on understanding and integrating new information with their prior knowledge.

Therefore, it is essential for educators to understand their students' epistemology and views about knowing and learning to design effective teaching strategies that can promote deep learning and academic success. Teachers can help students develop more effective epistemological beliefs by providing opportunities for reflection and metacognition, encouraging them to engage in critical thinking and problem-solving, and fostering a growth mindset that emphasizes effort and persistence.

6.0 CONCLUSION

In conclusion, students have difficulties where they fail to understand and grasp the basic concept or idea due to students' natural existing idea or knowledge, lack of knowledge related to the concept acquired, the information-processing demand, and the complexity of a learning task in comparison to the student's information-handling capacity, problems in communication in term of language used, and the mismatch between teachers' learning approach and the student's preferred learning mode (Kempa, 2006). Based on previous studies, it has shown that secondary school students were still facing difficulties in learning and understanding physics concepts, especially in force and motion topics that involved momentum and impulse. The results concluded that students more having difficulties solving mathematical problems on that topic (Adianto & Rusli, 2021). Additionally, teachers' lack of concern for their students' difficulties has also been one of the factors that made the students repeat the same mistake over and over again.

Furthermore, it can be concluded that students' epistemological belief can impact their learning outcome and academic achievements whereas students with strong epistemological views of thinking tend to have higher academic achievement. It is because they kept learning deeply and went through the challenges. To address these challenges, teachers can adopt teaching strategies that actively engage students to promote deeper understanding and better epistemological belief in learning physics concepts. It can be

concluded that this can improve the students' scientific skills and help students assist in learning concepts and improve their practical skills. In overall, it is anticipated that students will develop scientific attitudes, particularly curiosity, democratic attitudes, and academic honesty. Teachers can also work to identify and address students' misunderstanding and provide opportunities for students to reflect on their own learning processes and revise their beliefs.

Furthermore, it is important to recognize the diverse backgrounds and experiences of students and to promote inclusivity and equity in physics education. This can involve incorporating culturally relevant content and using teaching methods that are accessible to a range of learners. Overall, by addressing students' learning difficulties and epistemological belief in learning physics, educators can help to create a more engaging, inclusive, and effective learning environment for all students.

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EFFECTIVENESS OF COLLEGE ENGLISH TEACHING AND LEARNING IN SICHUAN PROVINCE, CHINA

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Abstract

English, as one of the most widely used languages in the world, has become an imperative tool for global communication, cultural exchange, and academic progress. The aim of this research is to investigate college students' perceptions on the effectiveness of College English teaching and learning in the contexts of teaching contents, learning environments, teaching process and methods, and students' learning attitudes and the enhancing strategies at Yibin Vocational and Technical College in Sichuan Province, China. A total of 390 college students were selected as respondents in this research and the data were obtained by using an online questionnaire. Data were analyzed using SPSS software version 27 in terms of percentage, frequency, mean value and one-way ANOVA test. The findings of this study revealed that most of college students had positive perceptions on the effectiveness of College English teaching and learning in Sichuan Province, China. Besides, the results showed that stimulating students' interests and motivation to learn was the most dominant and effective strategy to improve the effectiveness of College English teaching and learning in Sichuan Province, China. Moreover, the research findings further indicated that the academic year backgrounds and major backgrounds had some effect on college students' perceptions towards the effectiveness of College English teaching and learning in Sichuan Province, China. Suggestions to improve the effectiveness of College English teaching and learning were presented and discussed in this study.

Keywords: College English, Effectiveness of College English Teaching and Learning, College Students' Perceptions

Abstrak

Bahasa Inggeris, sebagai salah satu bahasa yang paling banyak digunakan di dunia, telah menjadi alat penting untuk komunikasi global, pertukaran budaya, dan kemajuan akademik. Tujuan penyelidikan ini adalah untuk menyiasat persepsi pelajar kolej terhadap keberkesanan pengajaran dan pembelajaran Bahasa Inggeris Kolej dalam konteks kandungan pengajaran, persekitaran pembelajaran, proses dan kaedah pengajaran, dan sikap pembelajaran pelajar dan strategi peningkatan di Kolej Vokasional dan Teknikal Yibin di wilayah Sichuan, China. Sejumlah pelajar kolej telah dipilih sebagai responden dalam penyelidikan ini dan data diperolehi menggunakan borang soal selidik dalam talian. Data dianalisis menggunakan perisian SPSS versi 27 dari segi peratusan, frekuensi, nilai min dan ujian ANOVA satu hala. Hasil kajian ini mendedahkan bahawa kebanyakan pelajar kolej mempunyai persepsi positif terhadap keberkesanan pengajaran dan pembelajaran Bahasa Inggeris Kolej di Wilayah Sichuan, China. Selain itu, keputusan juga menunjukkan bahawa merangsang minat dan motivasi pelajar untuk belajar adalah strategi yang paling dominan dan berkesan untuk meningkatkan keberkesanan pengajaran dan pembelajaran Bahasa Inggeris Kolej. Selain itu, hasil penyelidikan selanjutnya menunjukkan bahawa latar belakang tahun akademik dan latar belakang bidang akademik mempunyai beberapa kesan terhadap persepsi pelajar kolej terhadap keberkesanan pengajaran dan pembelajaran Bahasa Inggeris Kolej di wilayah Sichuan, China. Cadangan untuk meningkatkan keberkesanan pengajaran dan pembelajaran Bahasa Inggeris Kolej telah dibentangkan dan dibincangkan dalam kajian ini.

Kata kunci: Bahasa Inggeris Kolej, Keberkesanan Pengajaran dan Pembelajaran Bahasa Inggeris di Kolej,

Persepsi Pelajar Kolej

1.0 INTRODUCTION

English is of paramount importance in today's world. College English, as an indispensable part of higher education, can enhance students' global communication skills, employability, academic advancement and cultural exchange. With the rapid progress of science and technology, economy and education in China, the needs for new-type English professionals are gradually increasing, which brings opportunities and challenges to College English teaching and learning (Jiao, 2022). Besides, the future of education demands the cultivation of high-caliber College English students to meet evolving needs, as proficiency in English is increasingly vital in a globalized and interconnected world (Hu, 2020). In order to meet the demands of the new era for English talents, it is crucial to enhance the effectiveness of College English teaching and learning, and then cultivate highly skilled English professionals.

According to a great number of studies about the current status of College English teaching and learning in China, it is found that some problems and challenges are still existed in the College English course. Firstly, College English teaching is more teacher-centered, and it is difficult to give play to students' subjective initiative (Jiao, 2022). Students lose the initiative of learning and can only receive knowledge habitually and passively, which leads to the loss of the ability to explore knowledge actively in their future learning life. Besides, teaching contents is a lack of cutting-edge knowledge. In the process of college English teaching and learning, modern College English is a multidisciplinary, multifaceted, and intensively cross-developed discipline, and it covers a wide range of backgrounds and theories in history, economics, technology, and culture (Xiao, 2010). Thus, if the teaching contents are not updated and comprehensive, it may fail to capture students' interest and hinder their language acquisition progress. Moreover, traditional teaching methods should also be improved. At present, many College English teachers are only satisfied with imparting knowledge from the textbook to students, and they often struggle to effectively incorporate knowledge beyond the confines of the classroom (Hu, 2020). Additionally, there are many negative learning attitudes among college students. For instance, some of college students lack motivation and enthusiasm for college English learning, meanwhile, other students lose the spirit of daring to question and are convinced of the theories elaborated in textbooks, but do not question the authenticity of academics. Furthermore, College English classes sometimes lack a positive learning environment for college students to learn effectively. All in all, these problems existed in current College English course will lead to a negative impact on college students' English learning effect and their growth, so enhancing the effectiveness of College English teaching and learning is of great significance.

Previous studies have examined students' perceptions of many important issues in language teaching and learning. In recent years, there are still some problems in teaching English at colleges, and there is a very important relationship between the effectiveness of College English and other components, such as teaching contents, learning environments, teaching process and methods, and students' learning attitudes. In addition, it is a critical topic to explore the college students' perceptions on the effectiveness of College English teaching and learning and improve the effectiveness of College English teaching and learning (Ismail, 2011). However, researches on students' perceptions on the effectiveness of College English teaching and learning are still limited. So, this study aims to address this research gap.

In this article, starting from the problems in College English teaching and learning in terms of teaching contents, learning environments, teaching process and methods, and students' learning attitudes at present, this study elaborates the current status of effectiveness on College English teaching and learning, and investigate college students' perceptions on the effectiveness of College English teaching and learning in the contexts of teaching contents, learning environments, teaching process and methods, and students' learning attitudes. Moreover, this paper also assesses the strategies for enhancing the effectiveness of College English teaching and learning. Finally, this study further determines the differences in college students' perceptions on the effectiveness of College English teaching and learning among

academic years and major groups. This research provides a valuable instruction for College English teaching and learning.

2.0 LITERATURE REVIEW

This study involves several studies, starting from students' perceptions. And then, the effectiveness of teaching and learning has been analyzed. Additionally, the previous studies on the effectiveness of College English teaching and learning have been elaborated.

Students' Perceptions

Students' perceptions offer valuable insights into their perspectives, attitudes, and experiences. Examining students' perceptions is beneficial for teachers and educators to tailor their teaching contents, improve teaching approaches, create a supportive learning environment, and address any potential barriers or challenges that students may face. Based on the researches, investigations of perceptions began in the 1970s and 1980s with a focus on the definition of key concepts and the construction and validation of research instruments. but something we actually did (Wibowo & Khairunas, 2020). Perception was the process by which humans think about certain phenomena (von Helmholtz, 2001). Demuth (2013) proposed that perception was the result of the interaction of stimuli with the observer's internal reasoning, desires, and experiences. According to Drew (2001), students' perceptions were the process of selecting, organizing and interpreting objects, events and other information during the learning process. It had been proved that the initial perception could influence students' processing of new information and that it was hard to change. This process of forming perception was dynamic and continuous due to various influencing factors. Having a good perception was essential since students' perceptions could influence their decision-making and even behaviors to a large extent (Reimann & Bechara, 2010). As a result, students' behaviors and performance in class are guided by their perceptions significantly. Students' perceptions of the learning experience as well as their preferences for instructional methods of these courses might determine whether they could adapt to these modalities, thus influencing how to perform in class and their learning attitudes.

Effectiveness of Teaching and Learning

Effective teaching and learning was introduced in the 1980s and had achieved fruitful achievements both in theory and practice. The effectiveness of teaching and learning emphasized the teaching effectiveness and teaching was an activity with a strong purpose and awareness. Effectiveness of teaching and learning pursued that the teachers and students could get the best teaching result with spending as little time and energy as possible. In recent years, most scholars focused their attention on testing the effectiveness of teaching and learning in one subject. They were trying to put the theories into practice. They did make some achievements in this field. More and more scholars had started to study the effectiveness of teaching and learning from different perspectives. They paid much attention to the teaching contents, learning environments, teaching process and methods, and students' learning attitudes. With the increasing number of books related to effectiveness of teaching and learning, more scholars were devoting their time and energy to writing papers on the specific subject at colleges. Yu (2006) talked about some details about effectiveness of teaching and learning, such as the basic concepts and models on effectiveness of teaching and learning. Song (2004) discussed the concept of effective teaching and learning and implementation strategies. Koppi (1997) studied effective teaching and learning in high-tech environments. George Brown and Atkins (1998) introduced the importance of effective teaching and learning in higher education.

The Effectiveness of College English Teaching and Learning

Researches on College English from the perspective of effective teaching and learning was gradually rising. The effective teaching and learning of College English was a well-designed instructional process by College English teachers. It aimed to promote integrated, coordinated, and sustainable progress and development in college students' comprehensive English skills at the optimal speed and effectiveness (Xu, 2018). By doing so, it achieved the predetermined goals of teaching, as the most important aspect of effective teaching and learning in College English, which could enhance students' learning outcomes. Firstly, from the perspective of teachers' teaching in College English, Yao (2005) explained the factors that affected College English effective teaching and learning mainly included teachers' English teaching contents. Besides, from the perspective of students' learning in College English, as the subject of effective teaching and learning, students' psychological, cognitive, and affective characteristics could all have an impact on the effectiveness of College English teaching and learning. The psychological characteristics of college students had an influence on the effectiveness of College English teaching and learning. It had been shown that freshmen faced difficulties in adapting to the new academic environment (Bao & Zhao, 2007). Moreover, the effects of college students' emotional factors on effective College English teaching and learning mainly included strategies and self-efficacy. Strategies were plans and conscious actions to achieve goals. In effective College English teaching and learning, students' choice of learning strategies would affect teachers' choice of teaching models and methods. In addition, from the perspective of school' role in College English, schools promoted effective teaching and learning, which was an essential part. First of all, the importance and support of the school was that principals could renew College English teaching environments, such as the audio equipment in the classroom, the listening and recording equipment in the autonomous learning classrooms. The timely updating of English teaching equipment would help students and teachers to promote effectiveness of College English teaching and learning (Cao et al, 2012). Meanwhile, the attention and support of the school was also conducive to the formation of the supporting environments, which helped teachers to improve the effectiveness of teaching and students' participation in College English classroom.

3.0 METHODOLOGY

Research design was the framework of the research plan, techniques and research procedures chosen by the researcher to conduct the study (Cresswell, et al., 2009). In this study, it was designed that using a quantitative research method through an online questionnaire survey of college students from Yibin Vocational and Technical College in Sichuan Province, China. And then using college students' perceptions of the effectiveness of College English teaching and learning in the contexts of teaching contents, learning environments, teaching process and methods, and students' learning attitudes, and the enhancing strategies for improving the effectiveness of College English teaching and learning as variables. The purpose of this study was to determine college students' perceptions on the effectiveness of College English teaching and learning, and its enhancing strategies, based on which quantitative research was more appropriate. Quantitative research methods not only could fairly, comprehensively, and scientifically reflect the characteristics and development patterns of research variables, but also was widely used in empirical studies of education. Besides, based on the combination of the research objectives and literature review, a questionnaire on the effectiveness of College English teaching and learning was developed. The questionnaire was randomly distributed to college students to identify the college students' perceptions on the effectiveness of College English teaching and learning, and its enhancing strategies in Sichuan Province, China. Finally, a total of 390 college students were selected as respondents in this research and the data were obtained by using an online questionnaire. Data were analyzed using SPSS software version 27 in terms of percentage, frequency, mean value and one-way ANOVA test. In this study, descriptive statistics analysis was used to identify the college students' perceptions on the effectiveness of College English teaching and learning, and the dominant effective strategies for improving the effectiveness of College English teaching and learning in Sichuan Province, China, while inferential statistics

analysis through one-way ANOVA test was used to determine the differences in students' perceptions on the effectiveness of College English teaching and learning among academic years and major groups.

4.0 DATA ANALYSIS

This part discussed the result of the data collected from the online questionnaire and provided a further analysis of the findings of this study.

Firstly, table 1 indicated the overall distribution of respondents' perceptions on the effectiveness of College English teaching and learning with mean value, the overall level of respondents and the rank. Results in table 1 showed that learning environments came in the first place with a mean of 3.64, and teaching process and methods tied for first place with a mean of 3.64, students' learning attitudes came in third place with a mean of 3.62, while teaching contents came in fourth place with a mean of 3.52. According to table 1 also, the results of perceptions' level about learning environments, teaching process and methods, students' learning attitudes, and teaching contents were high. Finally, the overall level of perceptions on the effectiveness of College English teaching and learning was high as overall mean value was 3.61. Namely, respondents almost had positive perceptions on the effectiveness of College English teaching and learning in the contexts of teaching contents, learning environments, teaching process and methods, and students' learning attitudes.

Table 1 Mean value, level and rank for the effectiveness of College English teaching and learning

No.	Effectiveness of College English teaching and learning	Mean	Level	Rank
1	Learning Environments	3.64	High	1
2	Teaching Process and Methods	3.64	High	1
3	Students' Learning Attitudes	3.62	High	3
4	Teaching Contents	3.52	High	4
5	Overall	3.61	High	

Besides, the results of the respondents' perception with regard to the strategies for improving the effectiveness of College English teaching and learning with frequency, percentage, mean value and level was shown in table 2 below. It showed that stimulating students' interests and motivation to learn came in the first place, and the good and harmony relationship between students and teachers occupied the second place, the well-organized teaching contents came in third place, teaching students with enthusiasm came in fourth place, while teaching students based on their natural capability came in fifth place. Therefore, most respondents agreed that stimulating students' interests and motivation to learn, establishing the good and harmony relationship between students and teachers, and organizing the teaching contents well are the dominant effective strategies for improving the effectiveness of College English teaching and learning.

Table 2 The frequency, percentage, mean value, and rank for the strategies for improving the effectiveness of College English teaching and learning.

No.	Item Content	Mean	Rank
1	Teaching students based on their natural capability.	4.12	5
2	Teaching students with enthusiasm.	4.15	4
3	The well-organized teaching contents.	4.24	2
4	The good and harmony relationship between students and teachers.	4.24	2
5	Stimulating students' interests and motivation to learn.	4.31	1

Additionally, according to the overall results of the one-way ANOVA shown in table 3, H_01 was rejected as $p \leq 0.05$ and H_01 is expressed as that there is no significant difference in college students' perceptions on the effectiveness of College English teaching and learning among academic years. It can be concluded that there is a significant difference in students' perceptions on the effectiveness of College English teaching and learning among academic years, in the contexts of teaching contents, learning environments, teaching process and methods. Therefore, in general, the null hypothesis was rejected. Nevertheless, students' learning attitudes had no effect on respondents' perceptions on the effectiveness of College English teaching and learning as $p > 0.05$.

Table 3 One-way ANOVA test results about the difference in students' perceptions on the effectiveness of College English teaching and learning among academic years

No.	Contents	One-way ANOVA Test	
		F	Sig.
1	Perceptions on the effectiveness of teaching contents	5.057	.007
2	Perceptions on the effectiveness of learning environments	6.651	.001
3	Perceptions on the effectiveness of teaching process and methods	3.308	.038
4	Perceptions on the effectiveness of students' learning attitudes	2.099	.124
5	Overall perceptions on the effectiveness of College English teaching and learning	5.755	.003

Moreover, based on the overall results of the one-way ANOVA shown in table 4, H_02 was also reject as $p \leq 0.01$ and H_01 is expressed as that there is no significant difference in college students' perceptions on the effectiveness of College English teaching and learning among major groups. Therefore, in general, the null hypothesis was rejected. It can be concluded that there is a significant difference in students' perceptions on the effectiveness of College English teaching and learning among major groups in the contexts of teaching contents, learning environments, teaching process and method, and students' learning attitudes.

Table 4 One-way ANOVA test results about the difference in students' perceptions on the effectiveness of College English teaching and learning among major groups

No.	Contents	One-way ANOVA Test	
		F	Sig.
1	Perceptions on the effectiveness of teaching contents	61.919	.000
2	Perceptions on the effectiveness of learning environments	20.581	.000
3	Perceptions on the effectiveness of teaching process and methods	37.932	.000
4	Perceptions on the effectiveness of students' learning attitudes	53.824	.000
5	Overall perceptions on the effectiveness of College English teaching and learning	74.737	.000

5.0 FINDINGS

A total of 390 college students were surveyed by the online questionnaire to determine level of the perceptions towards the effectiveness of College English teaching and learning in the contexts of teaching contents, learning environments, teaching process and methods, and students' learning attitudes, and strategies for improving its effectiveness. According to the summary of the descriptive analysis of respondents' demographic information, it indicated the proportion of female respondents was slightly more than male respondents. Besides, the majority of respondents in Sichuan Province, China was between 18 and 22 years old. In addition, the percentage of respondents from academic year 1, year 2 and year 3 were balanced distribution. Lastly, results also showed that the proportion of respondents from Social Science and Humanities, Natural Science, and Applied Science and Technology were balanced distribution. Based on the summary of the four research objectives through descriptive and inferential analysis results. First of all, the findings indicated most of college students had positive perceptions on the effectiveness of College English teaching and learning in the contexts of teaching contents, learning environments, teaching process and methods, and students' learning attitudes in Sichuan Province, China. Besides, college students expressed agreement regarding the effectiveness of all strategies for enhancing effectiveness of College English teaching and learning in Sichuan Province, China, albeit to varying degrees. The majority of respondents agreed that stimulating students' interests and motivation to learn, establishing the good and harmony relationship between students and teachers, and organizing the teaching contents well are the dominant effective strategies for improving the effectiveness of College English teaching and learning. Additionally, the findings concluded that both respondents from different academic year backgrounds and major backgrounds had significant effect towards college students' perceptions on the effectiveness of College English teaching and learning in the contexts of teaching contents, learning environments, teaching process and methods, and students' learning attitudes in Sichuan Province, China.

6.0 DISCUSSION

In this study, the discussion of research findings are presented, which include the respondents' perceptions on the effectiveness of College English teaching and learning, the strategies for improving the effectiveness of College English, the comparison of different academic year background respondents' perceptions on the effectiveness of College English teaching and learning, and the comparison of different major background respondents' perceptions on the effectiveness of College English teaching and learning among college students in Sichuan Province, China.

The Respondents' Perceptions on the Effectiveness of College English Teaching and Learning

According to the research findings, it can be inferred that respondents almost have positive perceptions on the effectiveness of College English teaching and learning. The possible reason of that respondents almost had positive perceptions on the effectiveness of College English teaching and learning in the contexts of teaching contents, learning environments, teaching process and methods, and students' learning attitudes is attributed to several factors, for instance, the clear teaching contents, the good learning environments, the well-organised teaching process and multiple methods, and students' positive learning attitudes. This finding is consistent with studies of Park and Lee (2006) and Hu (2020) as both studies document high level of perceptions on the effectiveness of College English teaching and learning among college students.

The Respondents' Perceptions on the Strategies for Improving the Effectiveness of College English Teaching and Learning

According to the research findings, it can be inferred that the respondents' perceptions levels on the strategies promoting the effectiveness of College English teaching and learning in Sichuan Province, China are all high. The results show that stimulating students' interests and motivation to learn comes in the first place, and the good and harmony relationship between students and teacher occupies the second place, the well-organized teaching contents occupies in third place, teaching students with enthusiasm occupies in fourth place, while teaching students based on their natural capability comes in fifth place. In the College English classes, employing students-centred methods like stimulating students' intrinsic motivation is more effective in improving learning outcomes than any other strategies. The students-centred method means shifting the focus of instruction from the teacher or the materials to the students themselves, with an emphasis on meeting their learning needs, interests, and abilities. This teaching approach highlights active student participation and exploration, encouraging them to become autonomous learners. Students are encouraged to think independently, ask questions, participate in discussions, and make learning choices and adjustments based on their own interests and abilities. This personalized learning process enhances students' motivation and learning outcomes, increasing their level of engagement and academic achievement in College English. This finding is the same at that of Xu (2018) who reveals that college students' have positive perceptions on the strategies promoting the effectiveness of English class. Meanwhile, Xu (2017) survey the students as the population and respondents argues that stimulating students' interests and motivation to learn is the most predominant and effective strategy to improve the effectiveness of College English teaching and learning.

The Comparison of Different Academic Year Background Respondents' Perceptions on the Effectiveness of College English Teaching and Learning

Based on the research findings, it can be inferred that academic year backgrounds have some effect on the college students' perceptions on the effectiveness of College English teaching and learning in the contexts of teaching contents, learning environments, teaching process and methods, and students' learning attitudes in Sichuan Province, China. In other words, it shows that there is a significant difference in college students' perceptions on the effectiveness of College English teaching and learning among three different academic years in Sichuan Province, China. Based on the one-way ANOVA analysis, there are statistically significant differences in respondents' perceptions on effectiveness of College English teaching and learning between academic year 1 and year 2, and academic year 1 and year 3, while there is no significant difference existed between academic year 2 and year 3. With respect to the respondents' overall perceptions on effectiveness of College English teaching and learning among respondents' academic years, the mean value of academic year 3 is highest, and the mean value of academic year 2 is in the second place, and the mean value of academic year 1 is in the last place. The possible reason for this is that students in different academic years have varying levels of accumulated knowledge and skills in English language learning. Students in advanced academic years may have had more exposure to English instruction and have developed higher language proficiency compared to students in earlier years. As a result, their perceptions of the effectiveness of College English teaching and learning may be influenced by their previous learning experiences and current proficiency levels. The finding of Xu (2017) also confirms that college students' academic year background

has a weak but significant effect on college students' perceptions on the effectiveness of College English teaching and learning. Meanwhile, Xu (2018) contradicts the finding as there is no significant difference between college students' perceptions on the effectiveness of College English teaching and learning among academic year.

The Comparison of Different Major Background Respondents' Perceptions on the Effectiveness of College English Teaching and Learning

Based on the research findings, it can be inferred that major backgrounds have much effect on the college students' perceptions on the effectiveness of College English teaching and learning in the contexts of teaching contents, learning environments, teaching process and methods, and students' learning attitudes in Sichuan Province, China. In other words, it showed that there is a significant difference in the college students' perceptions on the effectiveness of College English teaching and learning among Social Science and Humanities, Natural Science, and Applied Science and Technology in Sichuan Province, China. In regard to the overall perceptions on effectiveness of College English teaching and learning, the mean value of Social Science and Humanities is highest, and the mean value of Natural Science is in the second place, and the mean value of Applied Science and Technology is in the last place. According to the one-way ANOVA analysis, there are statistically significant differences in respondents' overall perceptions on effectiveness of College English teaching and learning among three different major groups: Social Science and Humanities, Natural Science, and Applied Science and Technology. The reasons for reaching the aforementioned conclusions may be attributed to several factors. First of all, the needs and priorities of College English course may be different in different majors. Secondly, the subject characteristics and background knowledge of students in different professional fields may affect their perceptions towards College English course. Thirdly, college students of different major groups may have varying requirements and expectations for the College English course. Fourthly, college students from different majors may have distinct learning goals and objectives for College English courses. These varying aspects may shape students' different perceptions of the effectiveness of English teaching and learning. The finding is line with some of the existing studies that find the significant impact of college students' major background on their perceptions on the effectiveness of College English teaching and learning (Xu, 2017)). Meanwhile, Jiao (2022) contradict the finding as there is no significant difference between college students' perceptions on the effectiveness of College English teaching and learning among major groups.

7.0 CONCLUSION

In conclusion, this study investigated college students' perceptions of the effectiveness of College English teaching and learning and assessed the enhancing strategies of effectiveness of College English teaching and learning in Sichuan Province, China, as well as determined the differences in college students' perceptions on the effectiveness of College English teaching and learning among academic years and major groups. This quantitative study was conducted by online questionnaire on 390 college students from Yibin Vocational and Technical College in Sichuan Province, China, and data analysis was performed using SPSS version 27.0 statistical software, mainly using two methods of descriptive statistics and inferential statistics.

Besides, this research found that most college students agreed that College English teaching and learning in Sichuan Province, China were effective. That is, the majority of college students had positive perceptions on the effectiveness of College English teaching and learning in Sichuan Province, China. Moreover, the results also had shown that stimulating students' interests and motivation to learn was the most dominant and effective strategy to improve the effectiveness of College English teaching and learning, meanwhile, establishing the good and harmony teacher-students' relationship and organising the teaching contents well were dominant and effective strategies for improving the effectiveness of College English teaching and learning. In addition, research findings further revealed that there was a significant

difference between college students' perceptions on the effectiveness of College English teaching and learning among academic years in Sichuan Province, China. Moreover, the research findings also indicated that there was a significant difference between college students' perceptions on the effectiveness of College English teaching and learning among major groups in Sichuan Province, China.

Although there were still limitations existed in this study, this research obtained promising and encouraging results. The high mean value of survey respondents who agreed that College English teaching and learning in Sichuan Province, China were effective. It showed that most college students had positive perceptions on the effectiveness of College English teaching and learning in Sichuan Province, China, which had great implications for the improvement in the College English course with regards to teaching contents, learning environments, teaching process and methods, and students' learning attitudes. Furthermore, teachers, educators and course administrators could employ the effective strategy that stimulate students' interests and motivation to learn in College English classes in order to enhance the effectiveness of College English teaching and learning.

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Pembelajaran Berasaskan Projek (PbP) Bagi Modul Urutan Khas, Kolej Komuniti Dalam Era Endemik

Project-Based Learning (PbP) for Special Massage Modules, Community Colleges in an Endemic Era

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Abstrak

Pembelajaran berasaskan Projek (PBP) bagi Modul Urutan Khas, Kolej Komuniti dilaksanakan dalam proses pengajaran dan pembelajaran (PdP) dan menjadi amalan bagi menilai projek amali akhir pelajar Sijil Terapi Kecantikan dan Spa (STK). Perubahan drastik yang berlaku kepada sektor pendidikan disebabkan pandemik Covid-19 dan fasa peralihan endemik memaksa pelajar melalui penilaian dalam kaedah norma baharu yang tidak dapat memenuhi keperluan praktikal atau *hands on* dan ini memberi kesan terhadap tahap pencapaian pelajar menerusi tinjauan awal penyelidik. Justeru itu, satu kajian deskriptif yang berkaitan dengan Pembelajaran berasaskan Projek (PBP) menjurus kepada skop kesan dan cabaran pembelajaran berasaskan projek (PBP) bagi Modul Urutan Khas, Kolej Komuniti dalam era endemik telah dijalankan. Kajian kuantitatif ini juga bertujuan bagi menentukan kesan pendekatan pembelajaran berasaskan projek (PBP) terhadap tahap pengetahuan, pemahaman dan penguasaan kemahiran Urutan Malaysia bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK) disamping cabaran dan halangan yang wujud semasa era endemik. Sampel kajian melibatkan 148 orang responden dengan menggunakan instrumen soal selidik dalam mendapatkan maklumbalas. Perisian *Statistic Package For The Social Science (SPSS)* versi 26.0 digunakan bagi mengira min, sisihan piawai, frekuensi dan peratusan. Hasil dapatan menunjukkan pendekatan pembelajaran berasaskan projek (PBP) bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti semasa era endemik tidak memberi kesan terhadap tahap pengetahuan, pemahaman dan penguasaan kemahiran semasa pelaksanaannya. Dapatan juga memberi gambaran bahawa aspek tempoh masa, fasiliti/ kemudahan dan *Standard Operating Procedure (SOP)* tidak menjadi halangan kepada pelajar dalam melaksanakan pendekatan ini sewaktu era endemik. Kesimpulannya, walaupun pelaksanaan pendekatan PBP dilaksanakan dalam era endemik tidak menunjukkan kesan negatif, namun terdapat beberapa perkara yang perlu diperhalusi agar tidak berlaku generasi tersisih (*lost generation*) dikalangan pelajar kolej komuniti disebabkan kerencatan dalam proses penyampaian pendidikan pada masa akan datang.

Kata kunci: Pembelajaran Berasaskan Projek, Modul Urutan Khas, Era Endemik.

Abstract

Project – Based Learning (PBL) for the Special Massage Module, Community College is implemented in the teaching and learning process (PdP) and has become a practice for assessing the final practical projects of the Beauty and Spa Therapy Certificate (STK) students. The drastic changes that have occurred in the education sector due to the Covid-19 pandemic and the transitional phase of endemicity have forced students to undergo assessments in new norm methods that cannot fulfill the practical or hands-on requirements, which has an impact on the students' achievement level as observed in the preliminary researcher survey. Therefore, a descriptive study related to Project-Based Learning (PBL) focusing on the scope of the effects and challenges of Project-Based Learning (PBL) for the Special Massage Module in the Community College during the endemic era has been conducted. This quantitative study also aims to determine the effects of the Project-Based Learning (PBL) approach on the level of knowledge, understanding, and mastery of Malaysian Massage skills for the Special Massage Module among the Beauty and Spa Therapy Certificate (STK) students, as well as the challenges

and obstacles that exist during the endemic era. The study sample involved 148 respondents using a questionnaire instrument to obtain feedback. The Statistical Package for the Social Sciences (SPSS) version 26.0 was used to calculate the mean, standard deviation, frequency, and percentage. The findings indicate that the Project-Based Learning (PBL) approach for the Special Massage Module among the Beauty and Spa Therapy Certificate (STK) students in the Community College during the endemic era does not have an effect on the level of knowledge, understanding, and mastery of skills during its implementation. The findings also suggest that aspects such as duration, facilities, and Standard Operating Procedures (SOP) do not hinder students from implementing this approach during the endemic era. In conclusion, although the implementation of the PBL approach during the endemic era does not show negative effects, there are several issues that need to be addressed to prevent a lost generation among community college students due to the fragility of the education delivery process in the future.

Keywords: Project-Based Learning (PBL), Special Massage Module, Endemic Era

1.0 PENGENALAN

Perubahan landskap pendidikan akibat situasi kesukaran yang berlaku pada 18 Mac 2020 memberi kesan dan impak kepada dunia khususnya Malaysia. Umum mengetahui bahawa kewujudan Virus Covid-19 yang menular ke seluruh pelusuk dunia memaksa kerajaan Malaysia mengisytiharkan Perintah Kawalan Pergerakan (PKP) sebagai menyokong Pertubuhan Kesihatan Sedunia (WHO) yang mengisytiharkan situasi ini sebagai pandemik secara rasmi. Pandemik Covid-19 menyebabkan pelaksanaan proses pengajaran dan pembelajaran (PdP) ditangguhkan sementara supaya dapat mengekang penularan wabak ini. Dengan penangguhan proses (PdP), negara terpaksa menutup semua institusi pendidikan iaitu yang merangkumi institusi pengajian tinggi dan sekolah bagi memastikan negara selamat daripada ancaman wabak yang amat berbahaya ini.

Dalam aspek pendidikan, pelaksanaan aktiviti pengajaran dan pembelajaran (PdP) secara formal turut terjejas. Menurut Goyal (2020), hampir 600 juta murid terlibat dan terkesan dengan keputusan bagi menutup institusi pendidikan, sama ada di peringkat sekolah atau institusi pengajian tinggi, setakat Mac 2020 lalu. Ini memerlukan tempoh masa yang lebih lama tanpa aktiviti praktikal di bengkel selain penangguhan kelas dan kuliah. Dan ini memberi impak ke atas institusi pemberi TVET iaitu Sektor Latihan Pendidikan dan Vokasional khususnya Kolej Komuniti yang turut merasai kesan yang sama akibat perubahan landskap pendidikan daripada pelaksanaan PdP secara bersemuka atau konvensional kepada pembelajaran atas talian (PdPDT). Tempoh pelaksanaan (PdPDT) di kolej komuniti dijalankan hampir 2 tahun dan berterusan sehingga negara mengisytiharkan peralihan ke fasa endemik berkuatkuasa 1 April 2022 yang lalu.

TVET merupakan proses pendidikan yang memberi penekanan kepada aspek praktikal, pemahaman dan sikap merangkumi kehidupan sosial dan pekerjaan dalam pelbagai sektor. Kolej Komuniti, antara sebuah institusi pemberian TVET dimana menawarkan bidang Terapi Kecantikan dan Spa (STK) yang mengalami perubahan drastik dari segi sistem penyampaian proses PdP yang membawa kepada pembelajaran atas talian (PdPDT) secara keseluruhannya. Namun begitu, pendekatan tidak bersemuka ini iaitu pembelajaran atas talian (PdPDT) tidak mampu melengkapkan proses penyampaian kemahiran yang berkesan terutamanya bagi bidang Terapi Kecantikan dan Spa (STK) di bawah Modul Urutan Khas kerana ia melibatkan proses pembelajaran secara sentuhan dan mungkin juga akan mengakibatkan generasi tersisih (*lost generation*) di kalangan pelajar kolej komuniti. Proses penilaian amali iaitu Pendekatan Berasaskan Projek (PBP) yang menjadi amalan sebelum ini merupakan penilaian secara *hands on* amat penting dalam memastikan pelajar menerima ilmu dan dapat mengaplikasikan kemahiran yang dipelajari dengan berkesan. Sehubungan itu, kajian ini diperlukan bagi menentukan kesan dan cabaran pembelajaran berasaskan projek (PBP) bagi Modul Urutan Khas semasa era endemik dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti.

Latar belakang masalah

Pandemik COVID-19 bermula daripada penularan wabak *Corona Virus Disease* atau Covid-19 yang berasal daripada Wuhan, China. Penyakit ini mula muncul di Wuhan, China, pada Disember 2019 yang lalu dan bermula Februari 2020, ia merebak ke setiap negara, termasuk Malaysia. Pada Januari 2020, Pertubuhan Kesihatan Sedunia (WHO) mengisytiharkan senario pandemik dan pengisytiharan ini juga membawa Malaysia melaksanakan penguatkuasaan Perintah Kawalan Pergerakan (PKP) sekaligus menjejaskan sektor pendidikan sehinggalah ianya ditutup dan proses pengajaran dan pembelajaran (PdP) tidak boleh dilaksanakan. Arahan yang dikeluarkan kerajaan melalui Kementerian Pengajian Tinggi (KPT) yang dilaksanakan dalam Perintah Kawalan Pergerakan (PKP) 1.0 sehingga PKP 2.0 menetapkan supaya semua aktiviti PdP hendaklah dijalankan secara dalam talian (*online*) serta larangan aktiviti PdP secara bersemuka. Antara sektor yang turut merasai tempas pandemik di luar jangkauan ini adalah Sektor Latihan Pendidikan dan Vokasional (TVET). Tidak terkecuali Kolej Komuniti, salah sebuah institusi pemberi TVET yang menawarkan kursus dalam bidang Terapi Kecantikan dan Spa (STK) memerlukan pelaksanaan kaedah pengajaran dan pembelajaran (PdP) serta pengujian melalui aktiviti *hands on* yang melibatkan kemahiran praktikal di dalam bengkel dan makmal semasa proses amali berlangsung.

Perubahan drastik yang berlaku kepada sektor pendidikan membenarkan wujudnya kaedah PdP norma baharu bagi meneruskan proses ini berlaku agar pelajar tidak ketinggalan dalam pelajaran mereka. Pelaksanaan PdP secara bersemuka atau konvensional yang biasa diamalkan sebelum ini tidak dapat dijalankan dan digantikan kepada pembelajaran atas talian (PdPDT) sebagai satu keperluan dalam meneruskan kesinambungan pendidikan di Malaysia. Menurut Rafiee Jamien et al. (2020), bagi memastikan murid dibimbing secara berterusan dalam pembelajaran, pelantar dalam talian (*online*) dipilih sebagai alternatif utama warga pendidik dan murid untuk terus berkomunikasi dengan sebaik-sebaiknya. Namun begitu, operasi pendidikan norma baharu ini tidak dapat memenuhi keperluan praktikal atau *hands on* tetapi hanya mampu memenuhi keperluan penyampaian ilmu teori sahaja seperti yang biasa diamalkan di kolej komuniti bidang teknikal khususnya dalam program Sijil Terapi Kecantikan dan Spa (STK). Pelbagai halangan dan cabaran yang dihadapi oleh pelajar dan pensyarah dalam melaksanakan (PdPDT) ini khususnya dalam pelaksanaan Pembelajaran Berasaskan Projek (PBP) sebagai tugas dan penilaian amali bagi Modul Urutan Khas Sijil Terapi Kecantikan Dan Spa (STK), Kolej Komuniti sepanjang tempoh pelaksanaan penguatkuasaan Perintah Kawalan Pergerakan (PKP). Ini adalah kerana Modul Urutan Khas memerlukan pendekatan secara bersemuka yang melibatkan amali secara sentuhan yang perlu dititikberatkan bagi memastikan pelajar mahir dalam kemahiran yang dipelajari. Setelah hampir 2 tahun berlalu menghadapi (PdPDT), Malaysia telah memasuki ke satu fasa peralihan iaitu daripada fasa pandemik ke fasa endemik berkuatkuasa 1 April 2022 yang lalu. Namun begitu, terdapat IPT yang masih melaksanakan (PdPDT) termasuk kolej komuniti khususnya bagi Sijil Terapi Kecantikan dan Spa (STK). Walaupun istilah endemik ini merujuk kepada wabak Covid-19 yang sentiasa wujud dalam masyarakat kita tetapi pada kadar yang stabil, namun begitu *Standard Operating Procedure* (SOP) masih dikekalkan dan pendekatan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas serta pembudayaannya tetap dilaksanakan dan diteruskan seperti yang berlaku sebelum dan semasa fasa pandemik lalu.

Hasil tinjauan awal penyelidik, terdapat isu dan masalah yang dihadapi oleh pelajar dalam mengekalkan tahap pencapaian melalui aktiviti amali dan penilaian berdasarkan pendekatan Pembelajaran Berasaskan Projek (PBP) dalam peralihan fasa endemik dimana pada fasa ini kaedah (PdPDT) masih lagi digunakan. Ini dapat dibuktikan dengan kajian awal pengkaji iaitu perbualan bersama beberapa orang pensyarah yang mengajar Modul Urutan Khas. Hasil perbualan mendapati terdapat penurunan dari segi markah pencapaian dan

markah keseluruhan pelajar melalui penilaian amali dan tugas dan bukti ini juga dapat dilihat berdasarkan dokumen bertulis iaitu lembaran markah keseluruhan pelajar melalui penilaian amali yang dilaksanakan menggunakan pendekatan Berasaskan Projek (PBP) bagi Modul Urutan Khas. Sementara itu, hasil dapatan kajian oleh Siti Aisyah Ibrahim dan Khadijah Abdul Razak (2021) mendapati pembelajaran atas talian kurang berkesan bagi mata pelajaran Pendidikan Islam dimana bidang pengajian ini memerlukan penyampaian yang jelas dan praktikal seperti pembelajaran amali solat, mengambil wuduk, dan tayammum kerana semua ini memerlukan penguasaan kemahiran dalam mempelajarinya. Dapatan kajian ini juga melihat sisi yang sama dengan isu kajian yang dijalankan dimana Modul Urutan Khas juga memerlukan kaedah pengajaran dan pembelajaran (PdP) secara *hands on* serta pengujiannya adalah secara kemahiran praktikal iaitu pendekatan secara bersemuka yang melibatkan amali urutan secara sentuhan. Ia turut disokong oleh kajian lepas melalui hasil dapatan Michael Co et al. (2021) menjelaskan cabaran yang dihadapi oleh guru dalam menyampaikan latihan kemahiran pembedahan secara dalam talian adalah sangat tinggi kerana penguasaan kemahiran yang dipelajari secara dalam talian adalah tidak berkesan berbanding pembelajaran bersemuka.

Selain isu dan masalah yang sering dikaitkan dengan PBP, banyak juga kajian lepas telah membuktikan kelebihan dan manfaat pendekatan PBP berbanding pendekatan pembelajaran yang lain. Pendekatan PBP ini dilihat mempunyai banyak kelebihan apabila ia dilaksanakan sebelum negara menghadapi situasi mencabar, iaitu pandemik Covid-19. Kajian oleh Zerovnik (2021) mengenai pelaksanaan pendekatan PBP dalam Pendidikan Tinggi menunjukkan bahawa pendekatan PBP membantu para pelajar menguruskan masa dengan lebih berkesan, meningkatkan kerja berpasukan, memahami tanggungjawab dalam pembahagian kerja dan sentiasa mengutamakan konsep kerja. Dapatan kajian daripada Mohd Aderi Che Noh et al. (2018), menunjukkan bahawa pelajar menyatakan walaupun ianya agak mencabar, namun ini adalah aktiviti yang sangat menarik dan menyeronokkan disamping dapat membantu pelajar dalam memahami sesuatu topik yang diberi dengan lebih mendalam. Walaupun banyak kelebihan yang dinyatakan dalam kajian-kajian lepas, namun ia perlu dilanjutkan dengan kajian-kajian terkini berkenaan kelebihan pendekatan PBP semasa pandemik Covid-19 melanda dan fasa peralihan pandemik ke endemik. Kajian seperti ini masih kurang dijalankan khususnya kajian yang memfokuskan kepada penguasaan kemahiran melalui pendekatan PBP dalam mengenalpasti ianya masih sesuai dilaksanakan pada waktu tersebut dan sebarang kemungkinan yang wujud sewaktu pelaksanaannya.

Oleh yang demikian, dalam mengekalkan tahap pencapaian pelajar Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti berada di tahap yang terbaik khususnya dalam pelaksanaan pendekatan Pembelajaran Berasaskan Projek (PBP), kajian ini perlu dijalankan untuk menentukan kesan dan cabaran pendekatan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti dalam era endemik ini. Dengan menentukan kesan, cabaran dan halangan ini diharapkan pengkaji dapat membantu dalam menyebarluas perkara yang perlu dipertimbangkan dalam memastikan segala cabaran dan halangan dapat diatasi serta cadangan penambahbaikan sekaligus dapat membuka ruang dan peluang untuk pengkaji lain melaksanakan kajian lanjutan berkaitan pendekatan Pembelajaran Berasaskan Projek (PBP) dalam konteks institusi TVET pada masa akan datang.

Objektif Kajian

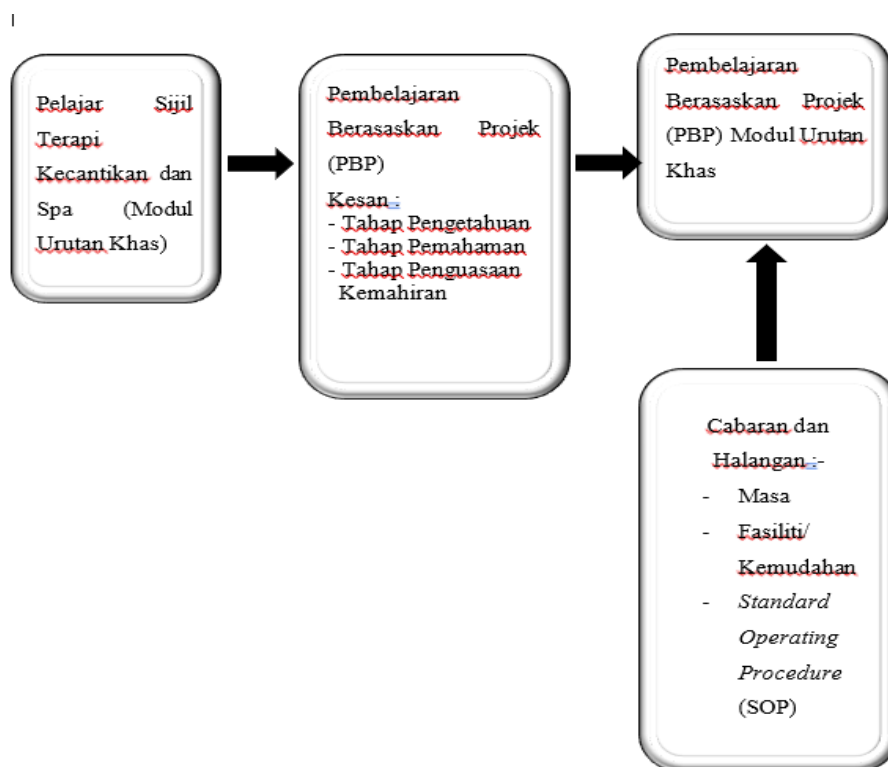
Objektif kajian ini adalah untuk:

- (a) Menentukan kesan pendekatan Pembelajaran Berasaskan Projek (PBP) terhadap tahap pengetahuan dan pemahaman bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti semasa era endemik.

- (b) Menentukan kesan pendekatan Pembelajaran Berasaskan Projek (PBP) terhadap tahap penguasaan kemahiran Urutan Malaysia bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti semasa era endemik.
- (c) Mengenalpasti cabaran dan halangan yang wujud sewaktu pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti semasa era endemik.

Kerangka Konsep Kajian

Kerangka konsep kajian digambarkan menerusi rajah dibawah :-



Rajah 1 Kerangka Konsep Kajian

2.0 SOROTAN KAJIAN

Pembelajaran Berasaskan Projek (PBP)

Pembelajaran Berasaskan Projek (PBP) ditakrifkan sebagai satu kaedah pengajaran yang memberi pelajar tugas kompleks berdasarkan cabaran soalan atau masalah yang merangkumi penyelesaian masalah, membuat keputusan dan kemahiran penyelidikan. Ia memberi tumpuan kepada isu-isu yang menjadikan pelajar dapat menghasilkan konsep dan prinsip asas dari segi praktikal. Soalan yang dibina bagi menghasilkan penilaian seharusnya memenuhi standard pembelajaran murid menjurus kepada pencapaian tahap penguasaan yang tertinggi. Selain itu, Pembelajaran Berasaskan Projek (PBP) dilihat sebagai kaedah pengajaran berasaskan inkuiri yang melibatkan pelajar dalam pembinaan pengetahuan dengan meminta mereka mencapai projek yang bermakna dan membangunkan produk dunia sebenar (Brundiers dan Wiek, 2013; Krajcik dan Shin, 2014). Dalam pendekatan PBP, pelajar juga menghasilkan penyelesaian kepada masalah kehidupan sebenar. Semasa mereka cuba mencari penyelesaian untuk masalah yang ditentukan, mereka mengumpul,

mengelas dan memahami data. Memandangkan PBP adalah pendekatan berpusatkan pelajar, ia adalah motivasi kerana ia menarik kepada perbezaan peribadi pelajar dan menyokong kemahiran sosialisasi, pemikiran dan peraturan sendiri pelajar. PBP juga memberi tumpuan kepada perbezaan individu dalam proses pembelajaran dan penilaiannya memfokuskan kepada pelbagai sudut pandangan. Beberapa teknik penilaian asas ialah penilaian berasaskan prestasi, portfolio, jurnal dan penilaian autentik (rubrik). Sorotan kajian lepas dari Ida Puteri Binti Mahzan (2018) mendapati penekanan PBP terhadap pembelajaran yang berorientasikan industri dapat menghasilkan pelajar-pelajar yang berinovatif dan produktif dalam membina modal insan yang berdaya saing. Kajian lepas yang dijalankan oleh W.Sumarni et al. (2016) menyokong kenyataan ini dimana ia menunjukkan pencapaian pelajar dalam pembelajaran masteri atau pendekatan PBP ini dalam konsep memahami dan baik terhadap aspek psikomotor. Ini juga dapat dilihat dalam pelaksanaan pendekatan PBP khususnya dalam Modul Urutan Khas sebagai tugas dan penilaian amali pelajar dimana pelaksanaannya adalah berorientasikan industri yang mana lebih tertumpu kepada realiti sebenar alam pekerjaan sebagai seorang terapis. Sementara itu, Ts. Mohd Rohaize Bin Ahmad (2022), dalam kajian beliau yang bertajuk "Pendekatan Pembelajaran Berasaskan Projek (PBP) Bagi Mata Pelajaran Projek Tahun Akhir (PTA) Di Kolej Vokasional Pasca Covid" juga menekankan aspek psikomotor dimana beliau mendapati penerapan matapelajaran TPA yang menggunakan TMK menerusi pendekatan PBP memberi manfaat dan menunjukkan kesan yang baik dengan membantu pelajar meningkatkan penguasaan kemahiran pembelajaran tersebut semasa berada dalam pasca covid.

Cabaran pembelajaran dalam talian (online learning) dalam Norma Baharu bagi institusi TVET

Pembelajaran dalam talian (*online learning*) merupakan konsep baru dalam pendidikan di negara kita pada masa kini. Sistem pendidikan di Malaysia mengalami transformasi dan perubahan ketara setelah berlakunya pandemik Covid-19 yang membawa kepada pelaksanaan pembelajaran dalam talian. Umum mengetahui, sebelum negara menghadapi ancaman wabak *Corona Virus Disease* atau Covid-19, pembelajaran secara dalam talian (*online learning*) yang dilaksanakan pada hari ini merupakan pelengkap kepada pembelajaran secara bersemuka (*face to face*) di dalam bilik kuliah. Namun, pada masa ini pembelajaran dalam talian menjadi kewajipan kepada semua pendidik dan pelajar sebagai usaha untuk memutuskan rantaian wabak pandemik Covid-19 dan memastikan tiada berlakunya keciciran dalam sistem pendidikan di Malaysia (Mohamad, 2021).

Pelaksanaan pembelajaran secara dalam talian (*online learning*) di Kolej Komuniti seluruh Malaysia pada kiraannya masih baru dan dalam peringkat permulaan berbanding Politeknik Malaysia yang telah melaksanakan dan mengamalkannya sejak tahun 2014 yang lalu. Ini adalah kerana Kolej Komuniti iaitu salah sebuah pemberi TVET (*Technical and Vocational Education and Training*) menjalankan 100% penilaian berterusan dalam pelaksanaan pembelajaran dan pengajaran (PdP) sepenuhnya tanpa peperiksaan akhir. Penilaian berterusan ini hanya tertumpu kepada pentaksiran berbentuk sumatif dan formatif yang dilaksanakan secara bersemuka (*face to face*) di dalam kelas/ kuliah dengan bimbingan dan pemantauan pensyarah. Ini menunjukkan pembelajaran amali atau pembelajaran secara bersemuka (*face to face*) amat penting untuk mencapai 100% penilaian di dalam kelas atau bilik kuliah. Oleh yang demikian, terdapat kesukaran dalam proses PdP yang dilaksanakan secara dalam talian (*online learning*) kerana Kolej Komuniti mempraktikkan Pembelajaran Berasaskan Hasil (OBE) dalam sistem pembelajarannya.

Pandemik Covid-19 dan penguatkuasaan Perintah Kawalan Pergerakan (PKP) yang dilaksanakan di negara ini secara tidak langsung memaksa pelajar belajar secara dalam talian (*online learning*) walaupun kaedah ini masih belum diterima sepenuhnya bukan sahaja dalam kalangan pelajar tetapi kesediaan kepada pendidik. Ini dapat dibuktikan dengan beberapa kajian lepas dimana hasil kajian Noor Azhar Abd Wahab et al. (2020) mendapati tahap

kesediaan pelajar Sijil Kulinari terhadap proses PdP secara dalam talian di Kolej Komuniti Rompin berada pada tahap yang sederhana. Kajian ini menunjukkan pelajar di Kolej Komuniti masih lagi tidak bersedia untuk menerima perubahan dalam sistem pendidikan baharu di Malaysia. Malah hasil dapatan ini disokong pula dengan kajian daripada Nor Hasnita Nawi & Noor Azah Mohd Noor (2020). Dapatan kajian mereka memperlihatkan bahawa tahap kesediaan pelajar Sijil Terapi Kecantikan dan Spa (STK) di Kolej Komuniti Kok Lanas terhadap PdP secara dalam talian adalah sederhana dan lebih yakin kepada pembelajaran secara bersemuka (*face to face*). Disamping itu juga, menurut Ahmad Al-Munzir Ridzwan & Mansur Nasir (2021) menyatakan tahap kesediaan pelajar Kolej Komuniti Lahad Datu terhadap pembelajaran dalam talian (*online learning*) dari aspek pengetahuan dan kemudahan adalah rendah. Dapatan kajian ini menunjukkan pelajar kurang bersedia menjalani sistem pengajaran dan pembelajaran (PdP) secara dalam talian. Tahap kesediaan yang sederhana dalam menghadapi pendidikan norma baharu ini turut dirasai dan diterjemahkan dalam kajian oleh Saf Sabilah Mohamad Tahir et al. (2020) di Politeknik Sultan Idris Shah. Walaupun Politeknik Malaysia telah mengamalkan pelaksanaan pembelajaran dalam talian (*online learning*) sejak 2004 yang lalu, namun dapatan kajian lepas juga menunjukkan tahap kesediaan pelajar ini masih berada pada tahap sederhana untuk menerima pengajaran dan pembelajaran (PdP) Matematik Kejuruteraan 2 dan Matematik Kejuruteraan 3 secara dalam talian (*online learning*).

Walaubagaimanapun, masih terdapat kajian lepas yang menunjukkan impak positif kepada pembelajaran dalam talian (*online learning*) yang dilaksanakan di Kolej Komuniti ekoran pandemik Covid-19. Siti Azura Abu Hassan et al. (2021) dalam kajiannya untuk mengenalpasti tahap keberkesanan dan halangan bagi pengajaran dan pembelajaran (PdP) dalam talian di Kolej Komuniti Hulu Langat mendapati responden menyatakan pembelajaran dalam talian (*online learning*) memberi manfaat dan kebaikan serta kesan yang baik kepada mereka. Menurut Hazniza Tawyer, Hanirah Mohamad Nur dan Amier Hafizun Ab Rashid (2021) pula melalui kajian yang bertajuk Pengajaran dan Pembelajaran Norma Baharu dalam kalangan pelajar Kolej Komuniti Malaysia, mendapati nilai min bagi pernyataan pelajar lebih selesa menggunakan teknologi maklumat secara efektif sebagai proses pengajaran dan pembelajaran (PdP) secara dalam talian berada pada tahap yang tinggi dimana mereka menyatakan bahawa untuk mengemukakan pendapat mereka tanpa perlu bersemuka secara berdepan dengan pensyarah dan pelajar lain, mereka lebih berasa lebih selesa dan bebas melalui penggunaan platform secara dalam talian (*online learning*). Pelajar berasa selesa menggunakan kaedah pembelajaran dalam talian kerana lebih menyeronokkan, memperolehi pengalaman baru dalam persekitaran belajar yang lebih efektif serta bermotivasi tinggi untuk mengambil bahagian melalui kuliah dalam talian. Ini memberi makna, proses pengajaran dan pembelajaran dalam talian (*online learning*) memberi manfaat dan kelebihan kepada pelajar TVET walaupun menghadapi kesukaran dan cabaran dalam pelaksanaannya.

Jika dapat dilihat daripada beberapa sorotan kajian lepas, pendekatan PBP memberi impak dan kesan yang sangat positif dari sudut pandangan pelajar dan juga guru khususnya pelaksanaan ke atas modul teknikal seperti modul Urutan Malaysia yang ditawarkan di dalam Sijil Terapi Kecantikan dan Spa (STK). Namun begitu, disebabkan pandemik Covid-19 yang melanda negara, tidak dapat dipastikan pelaksanaan PBP bagi modul seperti ini masih lagi membawa kepada kesan yang positif atau membawa kepada cabaran dan halangan dalam proses pelaksanaannya. Masih tiada kajian yang dijalankan dalam bidang ini untuk melihat pelaksanaan PBP sewaktu pandemik Covid-19 berlaku dan peralihan fasa endemik kerana krisis kesihatan dunia ini masih lagi baru dan berpanjangan sehingga kini.

3.0 METODOLOGI KAJIAN

Kajian yang dijalankan ini merupakan kajian rentas (*cross section*) yang menggunakan kaedah analisis data secara kuantitatif berbentuk deskriptif tinjauan. Menurut Fullan (1991), kajian berbentuk tinjauan amat sesuai untuk mengukur sikap, tingkahlaku dan pendapat.

Kaedah penyelidikan melalui tinjauan iaitu yang menggunakan borang soal selidik menjadi pilihan penyelidik dan kerap digunakan dalam penyelidikan masa kini kerana ianya begitu mudah untuk mentadbirkannya serta proses yang amat berkesan dan praktikal bagi mendapatkan maklumat dalam menyelesaikan masalah yang dikaji.

Instrumen borang soal selidik (*questionnaire*) digunakan bagi mengumpul maklumat kajian dengan menggunakan platform *google form* sebagai alat pengumpulan data. Melalui kaedah ini, data dapat dikumpulkan dengan mudah secara dalam talian (*online*) oleh kerana pengkaji menghadapi masalah daripada faktor kekangan waktu yang tidak dapat dielakkan iaitu jarak antara kolej komuniti seluruh Malaysia adalah jauh. Oleh kerana data kuantitatif yang diperolehi mudah dianalisis dan diterjemahkan dalam masa yang singkat, dan sangat sistematik, pendekatan kuantitatif dapat menganalisis masalah daripada data yang dikaji dengan cara yang mudah dan tepat, dan juga mampu mengukur tindak balas dan jawapan responden terhadap soal selidik dengan terhad (Patton, 1990). Kajian ini menggunakan instrumen soal selidik yang bersesuaian kerana ia melibatkan bilangan responden yang ramai dan membolehkan pengkaji mendapatkan input daripada responden dengan cepat dan tepat.

Secara umumnya, kajian yang baik dan berkesan terutamanya yang menggunakan kaedah tinjauan adalah kajian yang merangkumi keseluruhan populasi. Oleh yang demikian, bagi kajian ini penyelidik memilih keseluruhan populasi dalam kalangan pelajar semester 3, yang mengambil Modul Urutan Khas di Kolej Komuniti seluruh Malaysia iaitu yang menawarkan bidang Sijil Kecantikan dan Spa (STK) untuk mendapatkan maklumat yang tepat. Pemilihan keseluruhan populasi sebagai sampel ini diperolehi berdasarkan statistik terkini daripada sumber yang sahih dan penentuannya adalah secara sistematik dan bersesuaian dengan kajian yang dijalankan. Dalam menjalankan kajian ini, sampel kajian yang terdiri daripada 148 orang pelajar semester 3, Sijil Terapi Kecantikan dan Spa (STK) yang mengambil kursus Urutan Khas di Kolej Komuniti seluruh Malaysia dipilih sebagai sampel kajian. Pemilihan sampel yang ditetapkan mewakili keseluruhan populasi pelajar semester 3, Sijil Terapi Kecantikan dan Spa (STK), di Kolej Komuniti seluruh Malaysia bagi sesi I 2021/2022 dan sesi Disember 2020.

4.0 ANALISIS DATA

Bagi kajian ini, analisa deskriptif digunakan dan ini bersesuaian dengan objektif kajian yang ditentukan. Analisis deskriptif yang dilakukan adalah bertujuan untuk mendapatkan bilangan atau kekerapan sebagai frekuensi tentang maklumat latar belakang responden yang dikumpulkan. Selain itu, analisa deskriptif menggunakan peratusan turut dilakukan ke atas data frekuensi tersebut. Analisis deskriptif yang digunakan adalah bersesuaian untuk menjawab objektif kajian iaitu mengkaji tahap pengetahuan dan pemahaman serta tahap kemahiran pelajar samada memberi kesan kepada pendekatan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam era endemik ini. Analisa deskriptif ini juga akan dilaporkan melalui nilai skor min dan sisihan piawai.

Dalam item di Bahagian A, penggunaan kekerapan dan peratusan untuk menganalisis item yang merangkumi latar belakang profil responden berdasarkan jantina, umur, bangsa dan nama institusi pengajian semasa (Kolej Komuniti) digunakan. Bagi item-item dalam Bahagian B pula, nilai min dan sisihan piawai digunakan untuk mengukur tahap pengetahuan dan pemahaman serta tahap penguasaan kemahiran pelajar Semester 3, Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti menerusi pendekatan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas semasa era endemik COVID-19. 3 tahap digunakan untuk menginterprestasikan nilai min iaitu rendah, sederhana, dan tinggi dan dianalisis menggunakan perisian *Statistic Package For The Social Science (SPSS) versi 26*. Interpretasi skor min yang dinyatakan dalam Jadual 3.4 dibawah adalah seperti berikut:

Jadual 1 Interpretasi Skor Min

Skor Min	Tahap Min
1.00 – 2.33	Rendah
2.34 – 3.67	Sederhana
3.68 – 5.00	Tinggi

5.0 DAPATAN KAJIAN

Dapatan kajian dipersembahkan di dalam bentuk frekuensi, peratusan dan nilai min. Bahagian A merujuk kepada latar belakang responden manakala bahagian B meliputi aspek-aspek yang akan menjawab kepada persoalan kajian yang telah dibentuk.

Analisis Bahagian A: Latar Belakang Responden

Jadual 2 Latar belakang Responden

FAKTOR DEMOGRAFI	ITEM	KEKERAPAN	PERATUSAN (%)
Jantina	Lelaki	0	0
	Perempuan	148	100
	18 tahun	2	1.4
Umur	19 tahun	82	55.4
	20 tahun	37	25.0
	21 tahun	19	12.8
	22 tahun	1	0.7
	23 tahun	3	2.0
	25 tahun	2	1.4
	30 tahun	2	1.4
Bangsa	Melayu	128	86.5
	Cina	3	2.0
	India	10	6.8
	Lain-lain	7	4.7
Tempat Pengajian	Kolej Komuniti Sg. Petani	25	16.9
	Kolej Komuniti Bayan Baru	14	9.5
	Kolej Komuniti Taiping	22	14.9
	Kolej Komuniti Batu Gajah	22	14.9
	Kolej Komuniti Tampin	23	15.5
	Kolej Komuniti Kota Melaka	9	6.1
	Kolej Komuniti Muar	6	4.1
	Kolej Komuniti Pasir Gudang	11	7.4
	Kolej Komuniti Kluang	16	10.8

Jadual 2 merujuk kepada keseluruhan latar belakang responden yang mengambil bahagian dalam kajian ini. Hasil daripada data menunjukkan keseluruhan populasi merupakan pelajar perempuan iaitu 148 orang (100%) yang mengambil Modul Urutan Khas bagi Program Sijil Terapi Kecantikan dan Spa (STK) di Kolej Komuniti seluruh Malaysia.

Hasil dapatan mencatatkan bahawa terdapat 8 peringkat umur responden yang terlibat dalam kajian ini. Daripada 148 orang responden, terdapat 82 orang responden mencatat peratusan 55.4% yang berumur 19 tahun sekaligus menunjukkan peratusan tertinggi dalam menjawab soal selidik ini. Umur kedua tertinggi yang terlibat dalam kajian ini adalah 20 tahun iaitu sebanyak 25.0% dicatatkan diikuti umur 21 tahun iaitu seramai 19 orang responden dengan

peratusan 12.8%. Bagi umur 23 tahun pula, seramai 3 orang responden dengan 2.0% dicatatkan dalam hasil dapatan ini. Manakala bagi peringkat umur 18, 25 dan 30 tahun, masing-masing mencatatkan nilai peratusan terendah iaitu sebanyak 1.4% bersamaan 2 orang responden daripada keseluruhan responden yang menjawab kajian ini. Ini menunjukkan majoriti responden adalah berumur diantara 19- 21 tahun.

Bangsa responden pula menunjukkan kaum responden yang terdiri daripada Melayu, Cina, India dan lain-lain. Seramai 128 dengan 86.5% berbangsa Melayu, 3 orang dengan 2.0% berbangsa Cina, 10 orang dengan 6.8% berbangsa India manakal dengan 7 orang dengan 4,7% yang terdiri daripada bangsa lain-lain iaitu masing-masing mewakili Buddha, Siam, Dusun dan Orang Asli.

Bilangan dan peratusan tempat pengajian menunjukkan bahawa seramai 25 orang responden yang mewakili 16.9% adalah dari Kolej Komuniti Sg.Petani. Kolej Komuniti Bayan Baru pula seramai 14 orang responden dengan peratusan 9.5%. Manakala bagi Kolej Komuniti Taiping dan Kolej Komuniti Batu Gajah, masing-masing mencatat seramai 22 orang responden (14.9%) yang terlibat dalam kajian ini. Seterusnya, seramai 23 orang responden iaitu mewakili (15.5%) adalah daripada Kolej Komuniti Tampin. Bagi Kolej Komuniti Kota Melaka pula, seramai 9 orang responden yang terlibat dengan peratusan 6.1%. Seterusnya, seramai 6 orang responden (4.1%) mewakili Kolej Komuniti Muar. 7.4% responden iaitu sebanyak 11 orang pula adalah daripada Kolej Komuniti Pasir Gudang manakala seramai 16 orang responden dari Kolej Komuniti Kluang mencatat 10.8% dapat dilihat daripada taburan responden mengikut tempat pengajian (Kolej Komuniti). Secara keseluruhannya, Kolej Komuniti Sg. Petani mencatat bilangan tertinggi yang menjawab soal selidik ini berbanding dengan kolej-kolej yang lain.

Analisis Dapatan Persoalan Kajian 1

Jadual 3 Taburan Responden Mengikut Min dan Sisihan Piawai Bagi Kesan Pembelajaran Berasaskan Projek (PBP) Terhadap Tahap Pengetahuan dan Pemahaman Pelajar Semasa Era Endemik

Bil	Pemboleh ubah dikaji	Min	Sisihan Piawai	Tahap Penguasaan
B1	Saya tahu maksud Urutan Malaysia di dalam kandungan Modul Urutan Khas.	4.30	0.760	Tinggi
B2	Saya tahu proses melaksanakan pendekatan PBP Modul Urutan Khas dalam situasi endemik.	4.00	0.782	Tinggi
B3	Saya memahami terlebih dahulu teknik melakukan Urutan Malaysia sebagai persediaan sebelum melaksanakan pendekatan PBP Modul Urutan Khas dalam situasi endemik.	3.99	0.948	Tinggi
B4	Saya memahami teknik melakukan Urutan Malaysia dalam situasi endemik.	4.00	0.791	Tinggi
B5	Saya tahu menggunakan peralatan sedia ada sebagai alternatif apabila perlu melaksanakan Urutan Malaysia di luar bengkel.	4.14	0.779	Tinggi
B6	Saya tahu menggunakan bahan sedia ada sebagai alternatif apabila perlu melaksanakan Urutan Malaysia di luar bengkel.	4.09	0.750	Tinggi
B7	Pendekatan PBP Modul Urutan Khas yang dilaksanakan dalam situasi endemik ini meningkatkan tahap pemahaman saya untuk mengingati apa yang dipelajari.	4.18	0.780	Tinggi

B8	Saya dapat menguasai pengetahuan berkaitan Urutan Malaysia dengan baik apabila melalui pembelajaran menggunakan pendekatan PBP dalam situasi endemik.	4.12	0.718	Tinggi
B9	Saya tahu menggunakan peralatan ICT dengan baik hasil pelaksanaan pendekatan PBP Modul Urutan Khas dalam era endemik.	3.94	0.851	Tinggi
B10	Saya yakin pendekatan PBP bagi Modul Urutan Khas yang dilaksanakan dalam situasi endemik dapat meningkatkan pemahaman mempelajari ilmu Urutan Malaysia.	4.10	0.771	Tinggi
Nilai Min Keseluruhan		4.08	0.651	Tinggi

Berdasarkan Jadual 3, Item B1 sehingga item B10 masing-masing memerlukan responden memberi maklumat mengenai kesan pendekatan Pembelajaran Berasaskan Projek (PBP) terhadap tahap pengetahuan dan pemahaman pelajar semasa era endemik. Secara keseluruhannya, maklumat dalam jadual 3 menunjukkan kesemua 10 item ini berada ditahap yang tinggi iaitu di antara 3.94 hingga 4.30 dengan nilai min keseluruhan 4.08. Keputusan ini memperlihatkan hasil dapatan yang diperolehi adalah positif bagi setiap item yang dikaji. Ini bermakna dapatan kajian memperlihatkan persoalan kajian 1, kesan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas terhadap tahap pengetahuan dan pemahaman pelajar semasa era endemik berada pada tahap yang tinggi dan tidak memberi kesan yang negatif terhadap tahap pengetahuan dan pemahaman pelajar.

Analisis Dapatan Persoalan Kajian 2

Jadual 4 Taburan Responden Mengikut Min dan Sisihan Piawai Bagi Kesan Pembelajaran Berasaskan Projek (PBP) Terhadap Tahap Penguasaan Kemahiran Pelajar Semasa Era Endemik

Bil	Pemboleh ubah dikaji	Min	Sisihan Piawai	Tahap Penguasaan
C1	Saya dapat melaksanakan Urutan Malaysia yang dipelajari secara bersendirian di luar bengkel tanpa pensyarah.	3.75	0.918	Tinggi
C2	Saya dapat melakukan amali Urutan Malaysia mengikut langkah demi langkah dengan baik melalui pendekatan PBP sewaktu situasi endemik.	3.92	0.804	Tinggi
C3	Saya dapat melaksanakan perkhidmatan Urutan Malaysia melalui pendekatan PBP kepada komuniti sewaktu situasi endemik.	3.89	0.853	Tinggi
C4	Saya yakin dapat menguasai kemahiran Urutan Malaysia tanpa pemantauan pensyarah apabila melaksanakannya di luar bengkel.	3.80	0.903	Tinggi
C5	Saya boleh melaksanakan pendekatan PBP Modul Urutan Khas secara bersendirian tanpa bimbingan pensyarah.	3.68	0.977	Tinggi
C6	Pelaksanaan PBP, Modul Urutan Khas dalam situasi endemik ini dapat membantu saya menguasai ilmu kemahiran Urutan Malaysia dengan sangat berkesan tanpa pemantauan pensyarah di lapangan.	3.81	0.921	Tinggi

C7	Saya mendapat kepuasan apabila selesai melaksanakan pendekatan PBP Modul Urutan Khas walaupun berada dalam situasi endemik.	3.94	0.851	Tinggi
C8	Melaksanakan pendekatan PBP Modul Urutan Khas dalam situasi endemik membantu menarik minat saya dalam mempelajari bidang ini dengan lebih mendalam.	3.97	0.857	Tinggi
C9	Saya yakin dapat memberikan perkhidmatan yang terbaik kepada komuniti melalui pendekatan PBP Modul Urutan Khas dalam situasi endemik.	3.96	0.824	Tinggi
C10	Secara keseluruhan, aktiviti PBP Modul Urutan Khas dalam situasi endemik membantu pelajar menguasai kemahiran Urutan Malaysia dengan lebih mendalam.	4.10	0.823	Tinggi
Nilai Min Keseluruhan		3.88	0.728	Tinggi

Jadual 4 menunjukkan bahawa 10 item diuji bagi mendapatkan nilai min untuk menentukan kesan Pembelajaran Berasaskan Projek (PBP) terhadap tahap penguasaan kemahiran pelajar semasa era endemik. Min skor yang diperolehi dalam persoalan kajian 2 ini mencatatkan nilai di antara 3.68 hingga 4.10 dimana item C1 hingga C10 di dalam jadual 4 mengumpul skor min yang mewakili tahap sokongan yang tinggi. Secara keseluruhan, dapatan kajian mendapati kesan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas terhadap tahap penguasaan kemahiran pelajar semasa era endemik berada pada tahap tinggi dengan min keseluruhan 3.88 dan sisihan piawai 0.728.

Analisis Dapatan Persoalan Kajian 3

Analisis deskriptif yang melibatkan min dan sisihan piawai dijalankan adalah untuk mengetahui cabaran dan halangan yang wujud sewaktu pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK) semasa era endemik melalui aspek tempoh masa, fasiliti/ kemudahan dan *Standard Operating Procedure* (SOP).

Jadual 5 Taburan Responden Mengikut Min dan Sisihan Piawai Bagi Cabaran dan Halangan Dari Aspek Tempoh Masa

Bil	Pemboleh ubah dikaji	Min	Sisihan Piawai	Tahap Penguasaan
D1	Tempoh masa pelaksanaan pendekatan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas adalah mencukupi.	4.01	0.865	Tinggi
D2	Saya dapat menyiapkan PBP Modul Urutan Khas dalam masa yang telah ditetapkan.	4.05	0.831	Tinggi
D3	Saya sangat berpuashati dengan hasil PBP Modul Urutan Khas yang telah dilaksanakan secara bersendirian mengikut tempoh masa yang diberikan.	3.98	0.922	Tinggi
D4	Pensyarah sentiasa mengingatkan saya tentang masa yang diperuntukkan untuk menyelesaikan pendekatan PBP Modul Urutan Khas.	4.18	0.863	Tinggi

D5	Saya dapat merancang pelaksanaan pendekatan PBP Modul Urutan Khas dengan berkesan berpandukan masa yang diberi.	3.99	0.841	Tinggi
D6	Saya selesa melaksanakan pendekatan PBP Modul Urutan Khas mengikut masa yang telah diperuntukkan.	4.05	0.828	Tinggi
D7	Kesesuaian tempoh masa yang diberikan oleh pensyarah dalam melaksanakan pendekatan PBP Modul Urutan Khas ini membantu saya memahami dan menguasai kemahiran Urutan Khas dengan sangat baik.	4.03	0.907	Tinggi
D8	Saya yakin dapat memberi perkhidmatan yang baik kepada komuniti melalui pendekatan PBP Modul Urutan Khas mengikut masa yang telah dirancang.	4.08	0.821	Tinggi
Nilai Min Keseluruhan		4.04	0.754	Tinggi

Jadual 5 memaparkan taburan responden mengikut min dan sisihan piawai bagi cabaran dan halangan yang wujud sewaktu pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK) semasa era endemik dari aspek tempoh masa. Merujuk kepada persoalan kajian 3, 8 item soalan telah disediakan bagi mendapat maklumbalas daripada responden. Hasil dapatan memperlihatkan bahawa min skor yang diperolehi dalam persoalan kajian 3 ini mencatatkan nilai di antara 3.98 hingga 4.18. Berdasarkan dapatan analisis kajian yang telah dijalankan dalam persoalan kajian 3 melalui aspek tempoh masa, keseluruhan min mencatatkan 4.04 dengan sisihan piawai 0.754 memberi nilai tahap penguasaan yang tinggi bagi semua pemboleh ubah dalam persoalan kajian 3 ini. Ini memberi gambaran bahawa cabaran dan halangan yang wujud sewaktu pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa semasa era endemik melalui aspek tempoh masa adalah positif.

Jadual 6 Taburan Responden Mengikut Min dan Sisihan Piawai Bagi Cabaran dan Halangan Dari Aspek Fasiliti/ Kemudahan

Bil	Pemboleh ubah dikaji	Min	Sisihan Piawai	Tahap Penguasaan
D9	Fasiliti/ kemudahan yang digunakan dalam melaksanakan pendekatan PBP Urutan Khas mudah didapati di luar kolej.	3.99	0.877	Tinggi
D10	Pensyarah membekalkan peralatan yang lengkap untuk digunakan dalam pelaksanaan pendekatan PBP Modul Urutan Khas bagi kemudahan pelajar.	4.11	0.829	Tinggi
D11	Pensyarah membekalkan bahan yang lengkap untuk digunakan dalam pelaksanaan pendekatan PBP Modul Urutan Khas bagi kemudahan pelajar.	4.15	0.794	Tinggi
D12	Saya dapat menyediakan peralatan sedia ada sebagai alternatif lain untuk menggantikan peralatan yang tiada di luar kolej.	4.00	0.800	Tinggi
D13	Saya dapat menyediakan bahan sedia ada sebagai alternatif lain untuk menggantikan peralatan yang tiada di luar kolej.	4.03	0.791	Tinggi
D14	Pensyarah menggalakkan penggunaan alternatif lain sekiranya fasiliti/ kemudahan tidak mencukupi semasa melaksanakan PBP Modul Urutan Khas.	4.01	0.804	Tinggi

D15	Saya berpuashati melaksanakan PBP Modul Urutan Khas menggunakan bahan dan peralatan saya sendiri.	3.91	0.880	Tinggi
D16	Saya yakin mampu melaksanakan pendekatan PBP Urutan Khas dengan sebaiknya walaupun fasiliti/kemudahan tidak mencukupi.	3.90	0.814	Tinggi
Nilai Min Keseluruhan		4.01	0.700	Tinggi

Item D9 sehingga D16 memerlukan responden memaklumkan cabaran dan halangan yang dilalui dalam melaksanakan PBP Modul Urutan Khas semasa era endemik daripada aspek fasiliti/ kemudahan. Analisis tahap maklumbalas ini diterjemahkan di dalam jadual 6. Sekali lagi, rata-rata item mengumpul skor min yang mewakili tahap tinggi iaitu antara 3.90 – 4.15. Apa yang dapat diperhatikan daripada dapatan di atas, ternyata aspek fasiliti/ kemudahan bukanlah menjadi cabaran dan halangan kepada pelajar dalam melaksanakan PBP Modul Urutan Khas, malah fasiliti/ kemudahan yang disediakan oleh pensyarah adalah lengkap dalam membantu kejayaan pelaksanaannya.

Jadual 7 Taburan Responden Mengikut Min dan Sisihan Piawai Bagi Cabaran dan Halangan Dari Aspek *Standard Operating Procedure* (SOP)

Bil	Pemboleh ubah dikaji	Min	Sisihan Piawai	Tahap Penguasaan
D17	Saya memahami maksud <i>Standard Operating Procedure</i> (SOP) yang dilaksanakan dalam pendekatan PBP Modul Urutan Khas.	4.02	0.861	Tinggi
D18	Saya tahu SOP yang perlu dipatuhi dalam melaksanakan pendekatan PBP Modul Urutan Khas dalam situasi endemik.	4.11	0.853	Tinggi
D19	Saya boleh melaksanakan teknik Urutan Malaysia dengan baik mengikut SOP yang telah ditetapkan sewaktu situasi endemik.	4.05	0.836	Tinggi
D20	Pematuhan SOP semasa melaksanakan pendekatan PBP Modul Urutan Khas tidak menghalang saya menguasai kemahiran Urutan Malaysia dengan baik.	4.00	0.808	Tinggi
D21	Pematuhan SOP semasa melaksanakan pendekatan PBP Modul Urutan Khas tidak menghalang saya untuk mendapatkan markah yang baik dalam penilaian amali Urutan Malaysia.	4.01	0.804	Tinggi
D22	Pensyarah sentiasa mengingatkan saya tentang SOP yang perlu dipatuhi semasa melaksanakan pendekatan PBP Modul Urutan Khas.	4.15	0.811	Tinggi
D23	Pematuhan SOP yang telah ditetapkan dalam melaksanakan pendekatan PBP Modul Urutan Khas ini tidak menghalang saya untuk mendapatkan pelanggan.	3.97	0.911	Tinggi
D24	Saya yakin dengan SOP yang telah ditetapkan ini saya mampu memberi perkhidmatan Urutan Malaysia yang terbaik kepada komuniti.	4.02	0.884	Tinggi
Nilai Min Keseluruhan		4.04	0.750	Tinggi

Berdasarkan kepada item-item diatas, keseluruhan min dan sisihan piawai dapatan kajian ini ialah 4.04 ($sp = 0.750$) dan ia menunjukkan persoalan kajian 3 iaitu cabaran dan halangan yang wujud sewaktu pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK) semasa era endemik melalui aspek

Standard Operating Procedure (SOP) berada pada nilai min skor yang tinggi iaitu di antara 3.97 hingga 4.15. Kesimpulan yang dapat dibuat berdasarkan analisis skor min dalam jadual di atas, responden

Analisis Dapatan Bahagian E

Jadual 8: Taburan Responden Mengikut Cadangan Kepada Penambahbaikan Pelaksanaan Pendekatan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas

Bil	Cadangan Penambahbaikan	Kekerapan (f)	Peratusan (%)
1	Menyediakan latihan amali yang mencukupi.	14	9.5
2	Pensyarah perlu menguasai kemahiran Urutan Malaysia.	5	3.4
3	Menyediakan peralatan dan bahan yang mencukupi.	5	3.4
4	Menambahbaik bahan pengajaran dan pembelajaran (PdP).	8	5.4
5	Memberi tempoh masa yang mencukupi.	4	2.7
6	Menambah program bersama komuniti.	3	2.0
7	Memberi penerangan jelas mengenai <i>Standard Operating Procedure</i> (SOP).	5	3.4
8	Memberi penerangan yang jelas dan terperinci tentang pelaksanaan PBP Modul Urutan Khas.	4	2.7
9	Pemantauan dan bimbingan daripada pensyarah.	1	0.7
10	Tiada	99	66.9
Keseluruhan		148	100

6.0 PERBINCANGAN

Perbincangan Objektif Kajian 1

Kesan pendekatan Pembelajaran Berasaskan Projek (PBP) terhadap tahap pengetahuan dan pemahaman bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti semasa era endemik.

Analisis dapatan kajian bahagian ini menunjukkan bahawa pelajar menunjukkan respon yang sangat positif terhadap tahap pengetahuan dan pemahaman melalui pendekatan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas yang dilaksanakan semasa era endemik. Ini adalah kerana Pembelajaran Berasaskan Projek (PBP) merujuk kepada kaedah pengajaran berasaskan inkuiri yang melibatkan pelajar dalam pembinaan pengetahuan dengan meminta mereka mencapai projek yang bermakna dan proses pembangunan produk dalam dunia sebenar (Brundiers & Wiek, 2013 ; Krajcik & Shin, 2014). Berdasarkan kepada item soalan, pelajar-pelajar ini melaporkan persetujuan bahawa mereka mengetahui maksud Urutan Malaysia berdasarkan kepada kandungan Modul Urutan Khas disamping mengetahui dan memahami proses melaksanakan pendekatan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam situasi endemik. Dengan memahami kandungan Modul Urutan Khas ini, maka pelajar akan mengetahui dan memahami keseluruhan proses Urutan Malaysia daripada permulaan proses sehingga ke akhir proses. Ini

merujuk kepada istilah PBP itu sendiri yang memberi tumpuan kepada kerja yang lengkap iaitu proses yang dilakukan oleh pelajar dalam situasi kerja sebenar. Walaupun pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas ini dilaksanakan di luar bengkel, namun dengan pengetahuan yang diperolehi, mereka dapat menggunakan bahan dan peralatan sedia ada sebagai alternatif demi untuk memastikan pelaksanaan Pembelajaran Berasaskan Projek (PBP) berjaya dilaksanakan. Selain itu, pelajar menyatakan persetujuan bahawa mereka dapat menguasai pengetahuan dan memahami proses dalam melaksanakan kemahiran Urutan Malaysia dengan lebih baik apabila melalui proses Pembelajaran Berasaskan Projek (PBP) dalam situasi endemik dan mereka lebih yakin dengan pendekatan Pembelajaran Berasaskan Projek (PBP) ini, dapat meningkatkan pemahaman dalam mempelajari ilmu Urutan Malaysia. Ini membuktikan, para pelajar tidak menjadikan situasi era endemik ini sebagai halangan untuk mereka mempelajari kandungan Modul Urutan Khas ini dengan lebih bermakna.

Tanggapan positif pelajar terhadap pelaksanaan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas mereka disokong oleh beberapa kajian lain dalam literatur. Sebagai contoh, Saleh Al-Busaidi & Fawzia Al Seyabi (2021) menyatakan, pendekatan PBP membantu pelajar memperoleh pemahaman mendalam tentang pengetahuan yang mereka peroleh, membangunkan tahap pembelajaran yang lebih tinggi dan menggalakkan motivasi untuk belajar. Sementara itu, dalam kajian Nurul Hidayah, Anisa Puspa Arum, Ari Apriyansa (2021) menekankan keupayaan pelajar tepat dalam pemikiran kritis dapat ditingkatkan melalui pendekatan PBP khususnya dilaksanakan menggunakan platform pembelajaran moden iaitu pembelajaran dalam talian seperti situasi yang berlaku menerusi pendekatan Pembelajaran Berasaskan Projek (PBP) Modul urutan Khas yang dilaksanakan dalam era endemik iaitu peralihan fasa pandemik lalu. Jelas disini, bahawa menerusi pendekatan Pembelajaran Berasaskan Projek (PBP) yang dilaksanakan dalam era endemik, pengetahuan dalam menggunakan peralatan ICT juga dapat ditingkatkan oleh kerana kaedah penyampaian dalam pengajaran dan pembelajaran (PdP) masih lagi diteruskan dengan amalan yang dilaksanakan iaitu pembelajaran atas talian (PdPDT).

Penyelidikan tentang pembelajaran berasaskan projek (PBP) mendapati bahawa pelajar yang melalui proses pelaksanaan pendekatan ini belajar lebih berfakta dengan pengetahuan daripada pelajar yang melalui proses pembelajaran tradisional (Barron & Hammond, 2008). Pelajar yang terlibat secara langsung dalam membina pengetahuan dan pengalaman menerusi pendekatan PBP walaupun dengan keadaan apa jua sekalipun seperti seperti dalam situasi era endemik, ianya memberi kelebihan kepada pelajar-pelajar ini dalam meningkatkan tahap pengetahuan dan pemahaman dalam usaha mempelajari Modul Urutan Khas. Proses pelaksanaan pendekatan PBP yang dilaksanakan dalam situasi endemik ini juga memberi peluang yang luas kepada mereka dan dijadikan sebagai pengalaman berharga untuk mengingatkan apa yang dipelajari sekaligus dapat meningkatkan tahap pemahaman mereka terhadap kandungan modul iaitu pembelajaran Urutan Malaysia khususnya dalam Modul Urutan Khas.

Perbincangan Objektif Kajian 2

Kesan pendekatan Pembelajaran Berasaskan Projek (PBP) terhadap tahap penguasaan kemahiran bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti semasa era endemik.

Melalui dapatan kajian ini, pelajar menyatakan mereka yakin dapat melakukan amali Urutan Malaysia mengikut langkah demi langkah dengan baik melalui pendekatan Pembelajaran Berasaskan Projek (PBP) walaupun berada dalam situasi yang mencabar iaitu fasa endemik. Ini bermakna, mereka berjaya melaksanakan perkhidmatan Urutan Malaysia kepada komuniti

melalui pendekatan ini tanpa halangan. Pendekatan Pembelajaran Berasaskan Projek (PBP) yang digunakan dalam menilai pencapaian pelajar bagi Modul Urutan Khas adalah melalui tugas dan penilaian amali pelajar dimana pelaksanaannya adalah berorientasikan industri yang mana lebih tertumpu kepada realiti sebenar alam pekerjaan sebagai seorang terapis. Menurut Saleh Al-Busaidi (2019), pembelajaran melalui pengalaman dapat meningkatkan pemikiran pelajar dalam proses memahami konsep dengan baik. Ini dapat dibuktikan dengan analisis data bagi persoalan kajian 2, dimana tahap penguasaan nilai min keseluruhan item adalah tinggi dan memberi impak yang positif bagi setiap pelajar. Ini adalah kerana pelajar-pelajar ini merupakan pelajar semester 3 yang telah melalui beberapa fasa dalam situasi pandemik sebelum ini yang memerlukan mereka menguasai kemahiran lain semasa mengikuti sesi pengajian semester 1 dan 2 di Kolej Komuniti. Melalui pengalaman tersebut, mereka dapat menguasai apa sahaja kemahiran yang dipelajari termasuk kemahiran Urutan Malaysia dengan lebih baik dan berkesan.

Dalam institusi TVET, pendekatan Pembelajaran Berasaskan Projek (PBP) yang dilaksanakan membantu pelajar dalam meneroka dan berkongsi maklumat bagi memupuk bakat berkemahiran tinggi untuk permintaan pasaran industri. Penyelidikan berorientasikan projek jangka pendek seperti pendekatan Pembelajaran Berasaskan Projek (PBP) ini dapat memudahkan proses latihan dan meningkatkan kemahiran pelajar dalam menguasai bidang yang diceburi. Kenyataan ini disokong oleh Karamanoglu Mehmetbey (2018), yang menyatakan bahawa kursus rekabentuk perabut iaitu modul berasaskan praktikal atau amali meningkat pencapaiannya dengan sangat ketara melalui kesan STEM berasaskan projek (PBP) dan ini menunjukkan satu lagi kajian lepas yang menunjukkan pelaksanaan PBP membawa kepada kesan positif terhadap tahap penguasaan kemahiran pelajar.

Persepsi positif responden terhadap kesan pendekatan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas terhadap tahap penguasaan kemahiran yang dilaksanakan dalam situasi endemik ternyata diterjemahkan berdasarkan hasil analisis dapatan yang telah dijalankan. Pelajar bersetuju dan yakin dapat memberikan perkhidmatan yang terbaik kepada komuniti melalui pendekatan Pembelajaran Berasaskan Projek (PBP) selain mempercayai bahawa penguasaan kemahiran Urutan Malaysia bukan sahaja dapat dipertingkatkan malah dapat melaksanakannya apabila berada dalam apa jua situasi. Kenyataan ini dapat dibuktikan melalui kajian lepas dimana Mohd Rohaize Ahmad (2022), dalam kajian beliau yang bertajuk "Pendekatan Pembelajaran Berasaskan Projek (PBP) Bagi Mata Pelajaran Projek Tahun Akhir (PTA) Di Kolej Vokasional Pasca Covid" mendapati penerapan matapelajaran TPA yang menggunakan TMK menerusi pendekatan PBP memberi manfaat dan menunjukkan kesan yang baik dengan membantu pelajar meningkatkan penguasaan kemahiran pembelajaran tersebut semasa berada dalam pasca covid. Mereka tidak pernah mengalah dan tetap berusaha untuk menguasainya. Ini menunjukkan pelaksanaan pendekatan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas yang dilaksanakan dalam fasa endemik tidak menghalang pelajar menguasai kemahiran Urutan Malaysia malah membantu menarik minat pelajar untuk mempelajari ilmu kemahiran ini dengan lebih mendalam.

Berpandukan dapatan kajian yang direkodkan, walaupun penerimaan pelajar terhadap pendekatan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas adalah baik dan tidak memberi kesan kepada tahap penguasaan kemahiran, namun terdapat juga item yang menunjukkan sebilangan responden menyatakan tidak setuju namun tidak ketara disebabkan mewakili minoriti sahaja. Minoriti pelajar melaporkan bahawa sebilangannya tidak dapat melaksanakan kemahiran Urutan Malaysia secara bersendirian di luar bengkel tanpa pensyarah. Mereka juga tidak dapat menguasai kemahiran Urutan Malaysia sekiranya diberi peluang melakukannya tanpa pemantauan dan bimbingan pensyarah apabila melaksanakannya di luar bengkel.

Perbincangan Objektif Kajian 3

Cabaran dan halangan yang wujud sewaktu pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK) semasa era endemik berdasarkan aspek tempoh masa

Dalam melaksanakan pendekatan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas semasa situasi endemik, majoriti pelajar menyatakan tempoh masa yang diberi oleh pensyarah bagi menyiapkan PBP adalah mencukupi mengikut masa yang telah ditetapkan. Pelajar dapat menyelesaikan Pembelajaran Berasaskan Projek (PBP) mengikut masa yang telah ditentukan dan dapat merancang dengan baik. Ini adalah kerana pensyarah sentiasa mengingatkan mereka tentang masa yang diperuntukkan supaya memastikan pelajar dapat menyiapkan PBP dengan jayanya. Sumber dapatan daripada kajian lepas dibuktikan dengan kajian yang dijalankan oleh Dina Tsybulsky & Yulia Muchnik Rozanov (2019) mendapati pelajar dan pensyarah mengalami kesukaran dalam proses melaksanakan pendekatan PBP kerana mengambil masa yang terlalu lama berbanding kaedah tradisional. Pernyataan ini disokong dengan kajian B. Solihatin dan Z.Syahrial (2019) mendapati proses PBP mengambil masa yang lama untuk dilaksanakan dan untuk mendapatkan kesan yang baik seharusnya tempoh masa yang diperuntukkan bagi melaksanakannya perlu dipanjangkan. Grant (2002) menjelaskan bahawa pelaksanaan pendekatan Pembelajaran Berasaskan Projek (PBP) boleh menjadi pengalaman yang mencabar dan memberangsangkan bagi pelajar yang tidak biasa dengan prosesnya terutamanya dalam aspek pengurusan masa. Kajian ini dilihat daripada persepsi negatif terhadap kekurangan PBP dari aspek tempoh masa.

Beberapa kajian lain menunjukkan bahawa selepas pelaksanaan PBP, pengetahuan akademik, kemahiran dan motivasi pelajar telah bertambah baik, walaupun mereka mengalami kesukaran terhadap tempoh masa dalam pelaksanaan PBP. Perkara yang sama juga turut berlaku dalam kajian ini iaitu kepada pelajar yang mengaplikasikan pendekatan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam fasa endemik. Melalui dapatan kajian, mereka yakin dapat memberi perkhidmatan yang terbaik kepada komuniti iaitu dengan menguasai kemahiran yang dipelajari menerusi pengurusan masa yang diuruskan dengan baik.

Walaupun bahagian ini dilihat mendapat respon yang positif daripada pelajar melalui tahap penguasaan skor min yang tinggi, kajian ini juga mendedahkan bahawa terdapat sebilangan pelajar menyatakan kurang berpuashati dengan hasil PBP Modul Urutan Khas yang telah dilaksanakan secara bersendirian. Mereka juga tidak pasti sama ada dapat merancang pelaksanaan pendekatan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas dengan berkesan berpandukan masa yang diberi.

Cabaran dan halangan yang wujud sewaktu pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK) semasa era endemik berdasarkan aspek fasiliti/kemudahan

Keseluruhan nilai purata skor min yang tinggi menunjukkan aspek fasiliti/ kemudahan tidak menjadi halangan kepada pelajar dalam melaksanakan pendekatan ini, namun begitu, antara ketiga-tiga aspek ini, aspek fasiliti/ kemudahan memperolehi skor min yang terendah diikuti aspek *Standard Operating Procedure* (SOP) dan seterusnya aspek tempoh masa. Ini memberi gambaran bahawa sebahagian pelajar memberi respon kurang memberangsangkan terhadap tiga pernyataan dalam item-item yang dikaji. Pelajar melaporkan bahawa fasiliti/ kemudahan yang digunakan dalam melaksanakan pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas tidak mudah didapati di luar kolej. Oleh yang demikian, mereka tidak bersemangat untuk melaksanakannya dan mungkin melaksanakannya sekadar mampu memandangkan ianya mengambil masa yang lama memikirkan bagaimana untuk mendapatkan kemudahan tersebut sepertimana kemudahan yang telah disediakan apabila melaksanakan amali di dalam bengkel.

Selain itu, sebahagian pelajar menyangkal kenyataan, saya berpuashati melaksanakan PBP Modul Urutan Khas menggunakan bahan dan peralatan saya sendiri menjadikan item ini mencatatkan nilai min yang kurang daripada 4.0 berbanding item-item lain yang berada dalam aspek yang sama. Ini menunjukkan, terdapat sebahagian pelajar tidak merasa kepuasan dalam memberi perkhidmatan Urutan Malaysia kepada komuniti melalui pendekatan PBP disebabkan menggunakan peralatan sendiri yang semestinya tidak mencukupi dan berbeza daripada bahan dan peralatan yang terdapat di bengkel sebenar. Perkara ini juga sedikit sebanyak mengganggu proses pembelajaran pelajar untuk menguasai kemahiran Urutan Malaysia melalui perkhidmatan yang diberikan kepada komuniti menerusi pendekatan PBP.

Disamping itu juga, terdapat pelajar kurang bersetuju dengan pernyataan ini, saya yakin mampu melaksanakan pendekatan PBP Urutan Khas dengan sebaiknya walaupun fasiliti/kemudahan tidak mencukupi. Pelajar menyatakan fasiliti / kemudahan yang mencukupi membantu mereka melaksanakan pendekatan PBP dengan lebih berkesan tanpa halangan. Fasiliti/ kemudahan yang tidak mencukupi membataskan pelaksanaan PBP dan sekaligus kurang keyakinan dalam melaksanakan PBP Urutan Malaysia kepada komuniti berbanding kepuasan yang diperolehi apabila menggunakan fasiliti/ kemudahan yang lengkap disediakan di dalam bengkel.

Cabaran dan halangan yang wujud sewaktu pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK) semasa era endemik berdasarkan aspek Standard Operating Procedure (SOP)

Analisis deskriptif dijalankan bagi menganalisis dapatan kajian ini untuk menentukan objektif kajian 3 iaitu mengenalpasti cabaran dan halangan yang wujud sewaktu pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK) semasa era endemik berdasarkan aspek *Standard Operating Procedure (SOP)*. Purata nilai min yang diperolehi ialah 4.04 iaitu berada pada tahap penguasaan yang tinggi hasil daripada analisis yang dijalankan. Terdapat 8 item yang diajukan untuk menjawab persoalan kajian yang ketiga ini.

Berdasarkan kepada hasil dapatan kajian, ia menunjukkan sememangnya aspek *Standard Operating Procedure (SOP)* adalah salah satu cabaran dan halangan yang wujud sewaktu pelaksanaan Pembelajaran Berasaskan Projek (PBP) bagi Modul Urutan Khas dilaksanakan dalam situasi endemik. Walaupun Malaysia telah melalui fasa peralihan iaitu daripada fasa pandemik Covid-19 ke fasa peralihan endemik, namun begitu *Standard Operating Procedure (SOP)* masih kekal digunakan dalam industri ini. Nilai purata min bagi aspek *Standard Operating Procedure (SOP)* ini mencatatkan tahap penguasaan yang tinggi dan ini memberi makna bahawa aspek *Standard Operating Procedure (SOP)* tidak menghalang pelajar dalam melaksanakan pendekatan Pembelajaran Berasaskan Projek (PBP) walaupun semasa fasa peralihan endemik.

Pematuhan SOP yang telah ditetapkan semasa melaksanakan Urutan Malaysia kepada komuniti tidak menghalang para pelajar untuk mendapatkan pelanggan semasa melaksanakan pendekatan PBP. Peralihan fasa pandemik ke endemik memberi keyakinan kepada pelanggan yang kebiasaannya menggunakan perkhidmatan atau rawatan ini untuk terus mendapatkan perkhidmatan Urutan Malaysia daripada seorang juruterapi. Ini menunjukkan pelajar masih patuh dalam menjalankan tanggungjawab mereka sebagai juruterapi dalam memastikan pelaksanaan PBP dipenuhi.

7.0 PENUTUP

Secara keseluruhannya, dapat dijelaskan bahawa pendekatan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti semasa melalui fasa endemik tidak mempengaruhi dan memberi kesan negatif terhadap tahap pengetahuan, pemahaman serta tahap penguasaan kemahiran pelajar dalam mempelajari Urutan Malaysia. Kajian ini juga telah memperlihatkan kesesuaian pendekatan PBP dapat dilaksanakan dalam apa jua situasi yang melanda negara seperti yang dilaksanakan apabila negara menghadapi krisis pandemik Covid-19. Para pelajar

menggunakan pengalaman lepas sebagai satu usaha memperbaiki diri dalam menguasai ilmu pengetahuan, pemahaman dan seterusnya ilmu kemahiran Urutan Malaysia bagi memastikan mereka dapat memberi perkhidmatan terbaik kepada komuniti.

Cabaran dan halangan yang dapat dikenalpasti dan dikaji dalam melaksanakan pendekatan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas adalah daripada aspek tempoh masa, fasiliti/ kemudahan dan *Standard Operating Procedure (SOP)*. Walaubagaimanapun ketiga-tiga aspek ini juga dilihat tidak memberi sebarang masalah kepada pelajar dalam proses pelaksanaannya sebaliknya memberi peluang kepada pelajar untuk mempelajarinya dengan lebih mendalam. Malah cabaran dan halangan yang dihadapi sewaktu melaksanakannya juga dapat membantu mereka untuk menguasai kemahiran Urutan Malaysia dengan lebih baik dan berkesan. Namun begitu, aspek fasiliti/kemudahan harus diberi perhatian kerana hasil dapatan menunjukkan fasiliti/ kemudahan yang digunakan bagi memenuhi keperluan pelaksanaan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas perlu ditambahbaik selain memastikan bahan dan peralatan yang diperlukan sentiasa mencukupi dan mudah diperolehi di luar kolej/bengkel.

Oleh yang demikian, diharapkan segala cadangan penambahbaikan yang dikemukakan hasil daripada kajian yang dijalankan dapat dimanfaatkan sepenuhnya bagi memastikan pelaksanaan pendekatan Pembelajaran Berasaskan Projek (PBP) Modul Urutan Khas dalam kalangan pelajar Sijil Terapi Kecantikan dan Spa (STK), Kolej Komuniti dapat dilaksanakan dengan berkesan. Beberapa aspek kemahiran abad ke-21 yang amat diperlukan oleh pelajar pada masa hadapan sebagai bekalan kepada kehidupan yang lebih mencabar harus dipupuk dan disemai serta dilatih supaya dapat dikuasai walaupun negara berhadapan dengan ancaman, krisis atau cabaran mendatang. Cabaran yang dilalui tidak menghalang pelajar-pelajar ini untuk meneruskan proses melaksanakan PBP malah memberi semangat dan keyakinan kepada pelajar untuk menguasai kemahiran dalam sesuatu bidang yang diceburi.

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THE RELATIONSHIPS AMONG SMARTPHONE ADDICTION, SLEEPING QUALITY AND ACADEMIC PERFORMANCE OF BROADCASTING AND HOSTING MAJOR COLLEGE STUDENTS IN SICHUAN PROVINCE, CHINA

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Abstract

The expansion of platforms and opportunities in the broadcasting and hosting industry has escalated competition, exerting psychological and academic stress on students in these fields. This pressure often leads students to over-rely on smartphones for relief, or sacrifice sleep for studying, both of which can detrimentally affect their mental and physical health as well as academic performance. Therefore, this study aims to examine the interplay between smartphone addiction, sleep quality, and academic performance among university students pursuing broadcasting and hosting majors in Sichuan Province. The quantitative correlational study also investigates the gender disparities on smartphone addictive patterns in the post-pandemic era. A total of 561 students from broadcasting and hosting majors in Sichuan Province, including 253 males and 308 females were recruited through purposive sampling. The research instruments include the Smartphone Addiction Scale-Short Version (SAS-SV), the Pittsburgh Sleep Quality Index (PSQI) and demographic profile. Descriptive statistics and correlational analysis were used to gauge levels of smartphone addiction and sleep quality and to examine their association with academic performance. The findings suggest a prevalent inclination towards smartphone addiction among students. The results indicate a widespread propensity for smartphone addiction (mean_{male} = 34.640; mean_{female} = 35.320) among students, despite their overall satisfactory sleep quality. The study also exhibited a significant correlation between smartphone addiction and sleep quality among university students. As smartphone addiction intensifies, sleep quality correspondingly deteriorates. Nevertheless, no substantial link between sleep quality and academic performance was found. Additionally, no significant differences were observed for smartphone addiction and sleep quality in the context of gender. The results of this study yield critical knowledge for the mitigation of smartphone addiction and the promotion of better sleep quality among students in the hosting and broadcasting program. The practical applications of these findings extend to students, parents, school administrators, and instructors.

Keywords: Smartphone Addiction; Sleeping Quality; Academic Performance; Broadcasting and Hosting; College Students

Abstrak

Peluasan platform dan peluang dalam industri penyiaran dan penghosan telah meningkatkan persaingan, memberikan tekanan psikologi dan akademik kepada pelajar dalam bidang ini. Tekanan ini sering menyebabkan pelajar terlalu bergantung pada telefon pintar untuk bersantai, atau mengorbankan tidur untuk belajar, yang kedua-duanya boleh menjejaskan kesihatan mental dan fizikal serta prestasi akademik mereka. Oleh itu, kajian ini bertujuan untuk mengkaji interaksi antara ketagihan telefon pintar, kualiti tidur, dan prestasi akademik dalam kalangan pelajar universiti dalam jurusan penyiaran dan pengacaraan di Wilayah Sichuan. Kajian korelasi kuantitatif juga menyiasat perbezaan jantina dalam corak ketagihan telefon pintar dalam era pasca-pandemik. Seramai 561 pelajar jurusan penyiaran dan pengacaraan di Wilayah Sichuan, termasuk 253 lelaki dan 308 perempuan telah diambil melalui persampelan bertujuan. Instrumen penyelidikan termasuk Versi Pendek Skala Ketagihan Telefon Pintar (SAS-SV), Indeks Kualiti Tidur Pittsburgh (PSQI) dan profil demografi. Statistik deskriptif dan analisis korelasi digunakan untuk mengukur tahap ketagihan telefon pintar dan kualiti tidur dan untuk mengkaji hubungan mereka dengan prestasi akademik. Dapatan kajian menunjukkan kecenderungan yang lazim terhadap ketagihan telefon pintar dalam kalangan pelajar. Keputusan menunjukkan

kecenderungan meluas untuk ketagihan telefon pintar (min lelaki = 34.640; min perempuan = 35.320) dalam kalangan pelajar, walaupun kualiti tidur keseluruhan mereka memuaskan. Kajian itu juga menunjukkan korelasi yang signifikan antara ketagihan telefon pintar dan kualiti tidur dalam kalangan pelajar universiti. Apabila ketagihan telefon pintar meningkat, begitu juga dengan kualiti tidur. Walau bagaimanapun, tiada hubungan yang signifikan antara kualiti tidur dan prestasi akademik ditemui. Di samping itu, tiada perbezaan yang ketara diperhatikan untuk ketagihan telefon pintar dan kualiti tidur dalam konteks jantina. Hasil kajian ini menghasilkan pengetahuan kritikal untuk mengurangkan ketagihan telefon pintar dan menggalakkan kualiti tidur yang lebih baik dalam kalangan pelajar dalam penganjuran dan penyiaran program. Aplikasi praktikal penemuan ini meluas kepada pelajar, ibu bapa, pentadbir sekolah, dan pengajar.

Kata kunci: Ketagihan Telefon Pintar; Kualiti Tidur; Pencapaian akademik; Penyiaran dan Pengehosan; Pelajar kolej

1.0 INTRODUCTION

There are more than 600 universities in China offering broadcasting and hosting courses. To meet the market demand, some colleges and universities have expanded their enrollment scale, which potentially dilute the comprehension of specialized knowledge in broadcasting and hosting majors. This phenomenon thereby affects the overall quality of students. However, students' quality and academic performance are often associated with higher earning potential throughout a person's career, and many employers view academic performance as an indicator of a candidate's work ethic, discipline, and ability to meet the profession's demand (du Plessis, 2022).

Given the challenges of academic life, students often rely on smartphones as tools for entertainment and stress relief (Jia, Ye & Bian, 2017). Smartphones can not only make calls and send text messages, but also surf the Internet, play games, and use social media (Khang, Kim & Kim, 2013). Many schools and educators also use smartphones to support student learning (Gikas & Grant, 2013; Dewi, 2020). However, uncontrol and excessive smartphone use can lead to smartphone addiction, which manifested as excessive interaction with various features of the device (Turel & Serenko, 2010).

College students often use smartphones to find information online to complete academic questions or to conduct online studies and complete corresponding assignments (Bijlsma et al., 2019; Firmansyah, Siswanto & Priyatni, 2020). However, students who are addicted to smartphones may be distracted by the excessive use of various applications provided by smartphones, thereby affecting academic performance (David et al., 2015).

Excessive smartphone usage poses potential health risks. For instance, users who overuse their smartphones to make or receive calls report experiencing more frequent weekly headaches than other users (Auvinen et al., 2019; Amra et al., 2017; Robinson, Smith & Segalet, 2021). Smartphone addiction has an impact on the user's mental and behavioral states (Zhang, Chen, & Lee, 2014). Students with smartphone addiction are more likely to experience severe anxiety, depression, and impulsive emotions and behaviors (Ezoe et al., 2009; Li et al., 2020). In addition, gender differences in smartphone addiction have also been observed. On average, women use smartphones more hours per day than men, resulting in a higher degree of smartphone dependence (Lee et al., 2016). Men are more inclined to play games, watch mobile videos, and listen to music, while women are more inclined to use smartphones for communication and social networking services (Chen et al., 2017).

Smartphone usage habits can significantly affect sleep quality. According to the 2011 Sleep in America Survey, it was found that approximately 56.9% of Americans use their smartphones before sleeping (Kerai, 2023). This behavior is common among adolescents (Sydney, 2019). Prolonged exposure to the blue light from screens can disrupt melatonin production, leading to delayed sleep onset, reduced sleep duration, and compromised sleep quality (Lemola et

al., 2015). Smartphone addiction can shorten sleep time and lead to sleep inefficiency (Rathakrishnan et al., 2021). Long-term addiction to smartphones can prolong students' bedtime and directly affect students' sleep quality. The more serious the addiction, the more serious the sleep problems (Geng et al., 2021; Gui, Chen & Rui, 2019).

Sleep problems are common among college students (Abu-Snieneh et al., 2019). Academic pressure can negatively affect students' sleep quality (Assaad et al., 2014) with heightened stress levels correlating to sleep initiation difficulties (Amaral et al., 2018). Furthermore, students' irregular sleep patterns and poor sleep quality can impair cognitive processes, behavior and learning activities (Curcio, Ferrara & De, 2006). However, the learning process and memory are critical to learning and academic performance (Nunes et al., 2018). Poor sleep quality may result in poor academic performance (Rathakrishnan et al., 2021). There are noteworthy differences in sleep quality between male and female college students (Buboltz, Brown & Soper, 2001; Tsai & Li, 2004) attributable to potential gender-related differences in lifestyle and habits that can impact sleep quality (Cheng et al., 2012; Olfert et al., 2019; Tsai & Li, 2004).

This study aims to fill the gaps in existing research by investigating the current levels of smartphone addiction, sleep quality, and academic performance among college students majoring in broadcasting and hosting in Sichuan Province. In-depth exploration of the relationship between smartphone addiction, sleep quality, and academic performance among college students majoring in broadcasting and hosting in Sichuan Province and examining the gender differences in smartphone usage patterns among the students.

Research Questions

- i. What are the levels of smartphone addiction, sleeping quality, and academic achievement among college students majoring in broadcasting and hosting in Sichuan province, China?
- ii. Is there any statistically significant relationship among smartphone addiction, sleeping quality and academic performance among college students majoring in broadcasting and hosting in Sichuan Province, China?
- iii. Are there any significant differences in smartphone addiction and sleeping quality based on gender among college students majoring in broadcasting and hosting in Sichuan province, China?

2.0 LITERATURE REVIEW

College students majoring in broadcasting and hosting

With the development of the radio and television industry, broadcasting and hosting has become a mature discipline in China (Wang, 2013). However, constant changes in the broadcast industry present challenges to professional training, including changes in delivery methods, programming styles and audience preferences. There is a gap between students' practical abilities and employers' expectations, which can lead to employment difficulties and stress (Wen, 2006). As such, it becomes imperative to investigate the potential factors that may be influencing student performance.

Students' academic performance is of great significance for continuing education and employment in China (Snapshot, 2016). Academic performance is a key indicator of the quality of education, and it reflects the knowledge and skills that students have mastered in a specific period of time (Chen et al., 2019). Factors that affect students' academic performance include psychological emotions, study pressure, social environment, and smartphone use. Studies have found that being addicted to smartphones can distract students and thus affect academic performance (Rashid et al., 2020). In addition, sleep quality

is also closely related to academic performance, and poor sleep quality can affect the learning process and memory ability (Curcio et al., 2006; Nunes et al., 2018). Nevertheless, not many studies have shed light on the academic performance of students majoring in hosting and broadcasting, especially in the context of China.

Smartphone Addiction

As one of the largest smartphone markets in the world, China is facing a major problem of smartphone addiction (Fa, 2022). Smartphones have become ubiquitous in every aspect of people's lives. However, individuals may not be utilizing their smartphones appropriately and might not even realize that their usage has escalated towards smartphone addiction. Smartphone addiction refers to the behavioral problems of excessive dependence and uncontrollable use of smartphones (Billieux, 2012).

According to Busch and McCarthy (2021), smartphone addiction can be equated to problematic smartphone use. In their view, a person afflicted with this addiction finds it challenging to regulate their smartphone use which leads to impaired daily functioning. For instance, excessive reliance on smartphones can contribute to sleep deprivation. Conversely, Wang and Lee (2020) conceptualize smartphone addiction as compulsive smartphone use, characterized by an individual's inability to manage their smartphone usage, and a failure to curb the timing and duration of use even in the face of known negative consequences. Additionally, these individuals may experience restlessness and diminished productivity at work or school when unable to use their smartphones effectively (Andrade et al., 2023; Chiu, 2014).

When people become addicted to their smartphones, they tend to use the devices for extended periods of time and experience cravings and urges that they cannot control. Smartphone addiction can also be considered a technology addiction, where the multifunctionality of smartphones fulfills the needs of people (Derounian, 2017). Seong and Bo (2018) propose that smartphone addiction shares certain extent of similarity with internet addiction based on the symptoms and detrimental effects on physical and psychological well-being of the people. Smartphones have brought great convenience to people's lives, such as accessing information online, watching TV programs or other social software, but long-term dependence on smartphones can lead to physical or mental health problems, such as headaches or anxiety (Lee et al., 2014).

While numerous studies have explored the impact of smartphone usage among Chinese college students, these investigations typically view the phenomenon from the perspective of medical students or without considering the students' specialization. To date, there has been a notable lack of focus on students majoring in broadcasting and hosting. These students have more frequent interaction with smartphones and related technologies due to the nature of their field. Hence, understanding the effects of smartphone usage in this specific group could provide unique insights into how different academic specializations may influence smartphone use patterns and their potential implications.

Sleep Quality

Sleep is a state of natural recovery of body and mind, and sleep quality is an important indicator of sleep quality. Buysse et al. (1989) originally proposed five basic components of healthy sleep, namely sleep duration (SD), sleep efficiency (SE), sleep duration (ST), sleep quality (SQ) and daytime fatigue (DT). Sleep quality could be influenced by individual differences in sleep needs, sleep disorders, and environmental factors.

However, Krystal and Edinger (2008) pointed out that the term “sleep quality” is often used in the field of sleep medicine and can refer to various sleep indicators, such as total sleep time (TST), sleep onset latency (SOL), sleep maintenance time (SM) and total awake time (TWT). Krystal and Edinger (2008) believed that the definition of sleep quality depends on the testing methodology applied. Subsequently, Gerber et al. (2014) and Lang et al. (2016) proposed a series of sleep parameters and sleep indicators, reflecting the individual's sleep at night, sleep onset latency (SOL), after waking onset (WASO), slow wave sleep (SWS), rapid eye movement sleep (REMS), waking time (RT), bedtime (BT), deep sleep (DS) and light sleep (LS).

There are many factors that affect the quality of a person's sleep. When individuals sleep poorly, it affects their daily life and mental state. Poor sleep quality among students is associated with irregular rest patterns (Bavarsad et al., 2015). The use of smartphones by college students for various activities before going to bed, such as playing games, using social media, and texting, can deprive them of sleep time and contribute to poor sleep quality (Whipps et al., 2018). Lack of sleep has implications for cognitive function in college students. Daytime sleepiness can lead to decreased attention and concentration, negatively affecting learning and memory in students (Orzech et al., 2011).

Although many studies have explored the impact of sleep quality on Chinese college students, these surveys usually approach this phenomenon from the perspectives of different majors and age groups. Moreover, they often overlook the interconnectedness among smartphone addiction, sleep quality, and academic performance as a whole, despite smartphones being considered a necessity in the lives of college students. Therefore, understanding the interplay among the variables within college students major in hosting and broadcasting can offer unique insights. This research aims to uncover sleep health issues among broadcasting and hosting students which could serve as a foundation for developing targeted sleep management and intervention measures to enhance their academic performance and overall quality of life.

3.0 METHODOLOGY

Population and Sample

This correlational study focuses on college students majoring in broadcasting and hosting in Sichuan Province, China. The sample encompasses students from 13 leading universities in Sichuan Province that offer quality broadcasting and hosting majors. These universities are distributed among different city tiers: six in first-tier cities, four in second-tier cities, and three in third-tier cities. The research employed purposive sampling method. Participants who were enrolled in the broadcasting and hosting majors and aged between 18 and 24 were recruited. Through such a sampling method, the possible influence of the characteristics between universities in different cities on the relationship between smartphone addiction, sleep quality and academic performance can be considered.

Measures

The survey instrument comprises three sections. The first gathers demographic data, namely gender, school, academic major, semester grade point average. The second employs the Smartphone Addiction Scale Short Version (SAS-SV), while the third uses the Pittsburgh Sleep Quality Index (PSQI).

Smartphone Addiction Scale Short Version (SAS-SV)

The SAS-SV, a condensed form of the original Smartphone Addiction Scale, consists of six factors and ten items describing daily life disruption, positive anticipations, withdrawal, cyberspace-oriented relationships, overuse, and tolerance. Participants expressed their views

on a 6-point Likert scale for each question, from 1 (strongly disagree) to 6 (strongly agree). The total SAS-SV score, calculated by summing item scores, indicates the level of addiction. The higher the score, the more addicted the individual is. The scale delineates different cut-offs for males and females. For male, a score above 31 indicates significant addiction, while a score between 22 and 31 indicates a high risk of addiction. For female, a score above 33 indicated addiction, and a score between 22 and 33 indicated a high risk of addiction. The reliability of SAS-SV in this study was measured by Cronbach's alpha coefficient. The results based on a pilot test showed that SAS-SV has high internal consistency, and the Cronbach's alpha coefficient is 0.892.

Pittsburgh Sleep Quality Index (PSQI)

The Pittsburgh Sleep Quality Inventory (PSQI) was used to assess sleep quality over the past month. It consists of 19 self-assessment questions and five roommate-answered questions, covering factors such as sleep duration, latency, frequency and intensity of sleep-related problems. Item 19 and the other 5 items are not scored. The remaining 18 items are used to calculate the overall score, which ranges from 0 to 21 points, with each section weighted between 0 and 3 points. The scores from the seven sections are added together to get the total PSQI score, which ranges from 0 to 21, with higher scores indicating poorer sleep quality.

In this study, we excluded item 19 and the other 5 rating items of the PSQI scale, and only considered the last 7 sleep quality factors, including sleep onset time, sleep duration, sleep efficiency, subjective sleep quality, sleep disorders, 18 items such as daytime dysfunction and hypnotic drugs. In this study, sleep quality was classified according to the standard of Liu et al. (1996). A total PSQI score of ≤ 5 points to excellent sleep quality, 6 to 10 points to fair sleep quality, 11 to 15 points to poor sleep quality, and ≥ 16 points to poor sleep quality (Figure 3.2).

This study used Cronbach's alpha coefficient to evaluate the reliability of PSQI among students majors in hosting and broadcasting. The results showed that the internal consistency of PSQI was low, with Cronbach's alpha of 0.604 (Table 1). This result is consistent with previous studies that also reported Cronbach's alpha values for PSQI below 0.70. However, when items 5 and 7 are excluded, Cronbach's alpha exceeds 0.70 (Mariman et al., 2012; Magee et al., 2008). In this study, after we removed item 7, the Cronbach's alpha value of PSQI was 0.669 (Table 3.3). Therefore, these findings support the satisfactory reliability and validity of the PSQI used in this study.

Table 1 The Reliability Statistics of the Instruments

Scale	Cronbach's Alpha
SAS-SV	0.892
PSQI	0.699

Academic Performance

The student's academic performance is based on the average total score of the student's final exam results in the previous semester and is graded using the percentile system. In this study, students' academic performance is classified according to the 100-point grading system which can be further categorized into 4 grades, with A representing excellent from 90 to 100 points, B representing good from 75 to 89 points, C representing average from 60 to 74 points, and D representing fail for those who scores 59 and below (Li, 2021).

Data and Analysis

This study uses quantitative analysis methods for data collection and analysis to ensure the reliability and objectivity of the results. Data entry and analysis were performed using SPSS software. Participants' levels of smartphone addiction, sleep quality, and academic performance were assessed by calculating means and standard deviations. The Spearman correlation was used to examine the correlation among smartphone addiction, sleep quality and academic performance. A t-test was used to investigate gender-specific differences in smartphone addiction and sleep quality among the students.

4.0 FINDING

The Level of Smartphone Addiction and Sleeping Quality

The study employed mean and standard deviation to establish the status of smartphone addiction among broadcasting and hosting majors in colleges across Sichuan Province. By evaluating each item of the SAS-SV (Table 2), three levels were established to evaluate the degree of smartphone addiction among students of different genders. Common symptoms among students include an inability to bear being without a smartphone, constant checking to avoid missing social information, and extended usage. Average scores were 34.640 (>31) for men and 35.320 (>33) for women, indicating a propensity towards smartphone addiction among most students.

Table 2 Measurement item scores for the variable of students' smartphone addiction

Item	Mean	SD
Missing planned work due to smartphone use.	2.980	1.304
Having a hard time concentrating in class, while doing assignments, or while working due to smartphone use.	3.380	1.333
Feeling pain in the wrists or at the back of the neck while using a smartphone.	3.630	1.414
Will not be able to stand not having a smartphone.	4.050	1.403
Feeling impatient and fretful when I am not holding my smartphone.	3.190	1.307
Having my smartphone in my mind even when I am not using it.	3.490	1.336
I will never give up using my smartphone even when my daily life is already greatly affected by it.	3.430	1.401
Constantly checking my smartphone so as not to miss conversations between other people on WeChat or other Social Apps.	3.790	1.279
Using my smartphone longer than I had intended.	4.090	1.252
The people around me tell me that I use my smartphone too much.	2.980	1.305
Mean total SAS-SV Score (Male, n=253)	34.640	9.502
Mean total SAS-SV Score (Female, n=308)	35.320	9.906

Sleep quality was assessed using the PSQI, consisting of seven items (Table 3). The average sleep quality score was 1.090, while the mean values for sleep latency and sleep duration were 1.270 and 0.690, respectively. Sleep efficiency averaged at 0.270, with sleep disturbances and medication usage at 1.020 and 0.170, respectively. The mean daytime dysfunction score was

2.350. The total average PSQI score of 6.860 suggests moderate sleep quality, although students experienced varied daytime dysfunctions.

Table 3 Measurement item scores for the variable of students' sleep quality

Item	Mean	SD
Sleep Quality	1.090	1.770
Sleep Latency	1.270	0.992
Sleep Duration	0.690	0.847
Sleep Efficiency	0.270	0.629
Sleep Disturbance	1.020	0.590
Sleep Medication	0.170	0.570
Daytime Dysfunction	2.350	1.233
Mean total PSQI Score (Male & Female, n=561)	6.860	3.196

The Relationship among Smartphone Addiction, Sleep Quality and Academic Performance

The results demonstrate a weak negative correlation between smartphone addiction and sleep quality among students majoring in broadcasting and hosting ($r = -0.270$, $p < 0.001$). This suggests that an increase in smartphone addiction is associated with a decrease in sleep quality. Consequently, hypothesis H_01 is rejected. In addition, a weak negative correlation was identified between smartphone addiction and academic performance ($r = -0.100$). This suggests that increasing smartphone addiction could possibly lead to a minor decline in academic performance. Hence, H_02 is rejected. As for the correlation between sleep quality and academic performance, the results showed that p-value is greater than 0.05. This suggests that there is no significant relationship between sleep quality and academic performance among these students, leading to the acceptance of H_03 .

Table 4 The correlation between smartphone addiction, sleeping quality and academic performance

Variable	Smartphone Addiction	Sleep Quality	Academic Performance
Smartphone Addiction	1	-.270**	-.100*
Sleeping Quality	-.270**	1	0.022
Academic Performance	-.100*	0.022	1

* $P < 0.05$, ** $P < 0.001$

Mean differences in Smartphone Addiction and Sleep Quality based on Gender

Utilizing t-statistics, the results reported no significant gender differences regarding smartphone addiction and sleep quality (Table 5). The p-values (two-tailed) for smartphone addiction and sleep quality were 0.924 and 0.938, respectively, both exceeding the standard significance level of 0.05. This indicates that the observed gender differences in smartphone addiction and sleep quality among college students majoring in broadcasting and hosting could be attributed to random variation rather than a true effect. Thus, the study fails to reject the null hypothesis (H_04), accepting the assumption of no significant gender difference.

Table 5 T-test for Equality of Means for Smartphone Addiction Sleep Quality based on Gender

t-test for Equality of Means								
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
						Lower	Upper	
Smartphone Addiction	-0.095	514.153	0.924	-0.005	0.053	-0.110	0.100	
Sleep Quality	0.078	520.965	0.938	0.005	0.058	-0.109	0.119	

5.0 DISCUSSION

The study results indicate that college students majoring in broadcasting and hosting exhibit a relatively high degree of smartphone dependence, aligning with findings from previous studies. Smartphones, with their array of functionalities including instant messaging, social media interaction, and multimedia capabilities, are appealing to the students (Al-Harrasi & Al-Badi, 2014). Similar to past studies, frequent checking of smartphones without specific reasons were observed (Bae, 2017; Lin et al., 2014).

As the functionality of the smartphone progressed, students who lack self-control are more likely to develop smartphone addiction (Wang & Wu, 2012; Li, Zheng & Wang, 2015; Yu & Na, 2022). The Use and Satisfaction Theory explains why students are addicted to smartphones, that is, because their use satisfies students' social connection, information acquisition, and entertainment needs, which in turn increases the risk of students developing smartphone addiction (Ahad & Anshari, 2017; Chae & Lee, 2011).

The participants' sleep quality was generally moderate, with some variations in daytime dysfunction. Prior research indicates that college students often suffer from poor sleep quality due to the frequent use of social media and electronic devices, which interfere with sleep time and quality (Buboltz, Brown & Soper, 2001; Lund et al., 2010; Lemola et al., 2015). This finding suggests that excessive smartphone use may negatively impact students' sleep. However, the moderate sleep quality observed in this study may be related to the specific environment or sample characteristics of the study subjects.

In this study, a weak yet significant negative correlation was found between participants' smartphone addiction levels and sleep quality, suggesting that higher smartphone addiction may lead to poorer sleep quality. This finding corroborates previous studies showing an inverse relationship between smartphone addiction and sleep quality (Amra et al., 2017; Huang et al., 2020; Ibrahim et al., 2018). The behavior of using smartphones before going to bed may cause students to go to bed late, because prolonged exposure to blue light from screens can inhibit the production of melatonin, thereby delaying sleep time, reducing sleep time, and resulting in poor sleep quality (Lemola et al., 2015).

The study also found a significant but weak correlation between smartphone addiction and academic performance among students majoring in broadcasting and hosting in Sichuan Province. This finding is consistent with previous studies, indicating that high levels of smartphone addiction could be associated with lower academic performance (Chaudhury & Tripathy, 2018; Ruan, 2019). However, research by Ghafoor, et al., (2022) and Ou-Yang, et al., (2023) has shown that among highly intelligent and self-motivated individuals, strong self-

regulation skills can counteract the potential negative effects of smartphone addiction on academic performance.

The absence of a statistically significant correlation between sleep quality and academic performance in this study aligns with the findings of Sweileh et al. (2011), but contrasts with studies suggesting a positive correlation between good sleep quality and improved academic performance (Pan, Tan & Xie, 2007; Wang & Li, 2008; Hershner & Chervin, 2014). Irregular sleep patterns and poor sleep quality in students can affect cognitive processes, behavior and learning activities (Curcio, Ferrara & De, 2006). However, the learning process and memory are crucial to learning and academic performance (Nunes et al., 2018).

Regarding gender differences, the study found no significant discrepancies in smartphone addiction and sleep quality. This is in line with some previous findings (Kwon et al., 2013; Wu & Chou, 2023), while contradicting others (Demirci, Akgönül & Akpınar, 2015; Becker, 2018). The conflicting results could be due to variations in smartphone usage patterns, purposes, lifestyle factors, and biological differences between genders.

Despite providing valuable insights into the relationships among smartphone addiction, sleep quality, and academic performance for college students majoring in broadcasting and hosting in Sichuan Province, the findings of this study should be cautiously interpreted due to the specific sample group, potential self-selection bias, reliance on self-reported data, and the study's cross-sectional design. Future longitudinal or experimental research is needed to establish causality and assess long-term effects.

6.0 CONCLUSION

In conclusion, this study delineates the significant correlations between smartphone addiction and two critical factors: sleep quality and academic performance among college students major in hosting and broadcasting in Sichuan, China. However, no gender differences were noted in the context of smartphone addiction and sleep quality. Despite its insights, the study is not without limitations. Primarily, the relatively small sample size limits the generalizability of its findings. Future research could address this by increasing the sample size and incorporating more participants from varied backgrounds, which would improve the external validity. Additionally, this study relied on self-reported data, making it vulnerable to self-report bias. To enhance the precision and reliability of future data, researchers could consider incorporating diverse methods such as objective measurement tools, behavioral observations, and physiological indicators. It would also be advantageous to control for additional confounding factors to gain a more robust understanding of the relationships between these variables.

This study provides substantial insights into the interplay of smartphone addiction, sleep quality, and academic performance among students majoring in broadcasting and hosting. It could serve as a foundation for subsequent research, potentially guiding the development of more efficacious interventions and policies aimed at helping students mitigate smartphone addiction, enhance sleep quality, and ultimately improve their academic performance. Furthermore, this study's findings can serve as a valuable reference for future research in the field.

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Corporate Social Responsibility in Malaysia Education System

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Abstrak

Pendidikan secara amnya perlu menyediakan murid untuk menghadapi dunia sebenar. Namun, memastikan murid terlibat sepenuhnya dalam proses pengajaran dan pembelajaran amatlah mencabar. Guru telah berusaha untuk mewujudkan persekitaran pembelajaran yang menarik dan relevan untuk memastikan pembelajaran bermakna berlaku supaya murid memahami keperluan pendidikan demi kesejahteraan masa hadapan mereka. Walaupun mendepani pelbagai cabaran, mereka bentuk pengajaran yang berimpak, baik di dalam mahu pun di luar bilik darjah tetap menjadi matlamat utama setiap pendidik. Oleh itu, sebarang bentuk sumber atau sokongan pengajaran dan pembelajaran amatlah dialu-alukan. Justeru, Kementerian Pendidikan telah membuka ruang kepada pihak-pihak berkepentingan ke arah menjana kecemerlangan akademik yang mapan terutamanya untuk mencapai potensi penuh murid bagi memenuhi tuntutan Revolusi Perindustrian 4.0. Sehubungan itu, perhatian khusus terhadap penguatkuasaan Pendidikan 4.0 adalah satu keperluan dunia pendidikan yang berkembang pesat dewasa ini. Lantaran itu, para guru memerlukan sokongan yang lebih padu. Usahasama antara sektor pendidikan dan korporat dilihat sebagai salah satu inisiatif untuk memastikan sistem pendidikan terus dipacu hebat. Pendekatan murni yang diambil oleh pihak swasta dalam menunaikan tanggungjawab sosial korporat (CSR) dapat memperkasa kemenjadian murid yang lebih ampuh. Tambahan pula, untuk mempersiap murid-murid agar mampu bersaing di peringkat global menuntut penglibatan langsung pihak swasta yang sudah tentu arif dengan keperluan industri. Oleh itu, kertas kerja ini berhasrat untuk mendalami bagaimana pihak swasta melalui tanggungjawab sosial korporat mereka boleh memperhebat sistem pendidikan dalam usaha untuk melahirkan murid yang mampu berdaya saing di peringkat global kelak.

Kata kunci: Tanggungjawab Sosial Korporat, murid yang bersedia di peringkat global, berdaya saing, Pendidikan 4.0

Abstract

Education in general should equip pupils to face the real world. Creating a learning experience to ensure that pupils are fully absorbed in a lesson has been one of the most strenuous conundrums faced. Teachers struggle to create a learning environment that is engaging and relevant to allow meaningful acquisition of knowledge to take place. Against overwhelming odds, nevertheless, designing a lesson that is enriching within and beyond the classroom is the ultimate goal of every passionate teacher. Therefore, any teaching and learning resource or support to cultivate the minds of the young learners to effectively comprehend the importance of seeing the value of education beyond the four-wall classroom is welcomed. Hence, the Ministry of Education has been charting pathways for interested stakeholders towards greater academic excellence. Most importantly, unleashing pupils' full potential to be fully functioning individuals to meet the demand of the Industrial Revolution 4.0 is of paramount importance. Accordingly, espousing Education 4.0 is the pre-requisite to be in tandem with the fast-evolving world of education. It is only reasonable that for this to be materialized, teachers need a sturdy scaffolding. Hence, paving the way for partnerships between education sector and business corporation is the way forward. The philanthropic nature of the business corporation is crucial in manifesting true human flourishing. After all, if the ministry is committed to preparing the pupils to compete globally, the best group of people to keep in touch with would be those in the corporate world because they are the key

players in the industry. Thus, this paper intends to discover how business corporations through their corporate social responsibility may enhance our education system to produce globally-ready and competitive pupils.

Keywords: Corporate Social Responsibility, globally ready, competitive pupils, Education 4.0

1.0 INTRODUCTION

Pupils are no longer interested in learning and this has predominantly become one of the major issues faced by teachers. A survey by Edge Research and HCM Strategists (2022) suggested that pupils have shown no interest in post-secondary education which is reflected in the decline of enrolment in higher education which has been going on even before the pandemic. According to a study conducted by the Department of Statistics Malaysia in 2019, 72.1% or 390,000 out of 560,000 SPM leavers showed preference to become e-hailing drivers, food delivery riders and social media influencers as they believed that paper qualifications do not guarantee comfortable life. This trend is worrying as in the long run, it has significant consequences on Malaysian society, education, economy and earning power. Reigniting the spark in learning is arduous as pupils have begun to embrace the life of convenience. The challenge has now intensified as equipping the education system that emphasises on thinking globally has become the pre-requisite to braving today's borderless economy and this is where business corporations could be useful through their Corporate Social Responsibility (CSR) engagement strategies. Pupils need to realise the true value of education which is life-changing and liberating as it transcends paper chase stigma. Potentially, harnessing CSR could break this cocoon of misleading education concept. Beyond the classroom, CSR will not only allow pupils to experience workplace first hand, but it will provide pupils with contextualised, meaningful, tangible and goal-directed learning through the co-constructed best teaching practices through this partnership.

2.0 RESEARCH DESIGN

This research will be based on qualitative case study. It serves as an unfolding model that occurs in a natural setting (schools and corporate institutions) that enables the researcher to develop a level of comprehensive details from high involvement (teachers, pupils and interested stakeholders) in the actual, functional experiences (Cresswell, 2018) in planning best teaching practices to meet the demand of Education 4.0. This qualitative case study will involve the combination of interviews (pupils, teachers, language professionals and corporate sectors), observations as well as document analysis concerning the pupils' performance, business corporation annual reports and the curriculum documents. This study will focus on the co-construction of the best teaching practices in Trust Schools Programme (TSP), a comprehensive and sustainable school transformation programme aimed at improving pupils learning outcomes and revitalising school culture by a corporate organisation namely Yayasan AMIR; a not-for-profit organisation which collaborates with the Ministry of Education Malaysia (MOE) through a public-private-partnership involving 11 State Education Departments, 25 Education District Office, 57 primary schools and 37 secondary schools.

3.0 CORPORATE SOCIAL RESPONSIBILITY

The academic understanding of CSR has evolved and its evolution expanded as its role has become more prominent over time. Latapí, Jóhannsdóttir and Davídsdóttir (2019) synthesised the evolution of CSR which included Brown (1953) whom defined CSR as the social responsibility of the business executives whose decisions are based on the societal value; USA Committee for Economic Development (1971) whom redefined the role of CSR by stating that business functions by public consent to satisfactorily fulfil the needs of society; Jones (1980) who claimed that CSR should be viewed as a decision-making process that would influence corporate behaviour; Carroll (1991) whom stated that companies should be good corporate citizens and presented the idea in a CSR Pyramid that includes economic, legal, ethical and

philanthropic aspects; Carroll (2015) whom later extended CSR definition as the benchmark and central piece for the socially responsible movement; Lantos (2001) whom proposed that CSR is the strategic, profiting, implicit social contract between business and society; Chandler and Werther (2005) whom highlighted the transformation in CSR from committing minimally to becoming a strategic necessity and later in 2013, added that firms can create market-based products or services in an efficient and socially responsible way; and Husted and Allan (2007) whom defined CSR as a strategic partnership in creating values based on the societal demands. According to Latapi et. Al (2019), there is a change in Chandler (2016)'s CSR priorities which is from maximising on company profit towards optimising the shared value that resonates well with Carroll (2015)'s CSR description.

The close analysis on the CSR Pyramid by Carroll (1991) suggested that CSR engagement in education is emanated from its philanthropic responsibility which aims at being good corporate citizen. The philanthropic initiatives may include programmes like subsidising educational activities, funding health initiatives, donating to communal causes and supporting community garden and landscaping projects. Approaching CSR engagement philanthropically indicates that the business corporations pledge a shift from improving their business performance to fulfilling their moral obligation by establishing a strategic public-private-partnership (PPP) through *"a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility and remuneration is linked to performance"* (World Bank, 2022).

The systematic literature review on CSR in education in both higher education institutions and schools (S. Mostafa Rasoolimanesh, Shafaei, Nejati and Tan 2023; Sarah Yaseen Al Sakkaf, Sherine Farouk and Hossam M. Abu Elanain 2022; Mahalaxmi Adhikariparajuli, Abeer Hassan and Benedetta Siboni 2021; Karim Fusheini and Hussein Salia 2020; Athirah Azhar and Azlinda Azman 2020; Muhammad Adam Senin, Harliana Halim and Al Amirul Eimer Ramdzan Ali 2019 and Loh Ngik-Hoon and Siti Shukhaila Shahrudin 2019) provides evidences that CSR educational programmes have positively impacted teachers and as the result, students obtained better grades in academics and gained self-confidence. However, it is also noted that both schools and higher learning institutions are still trailing behind in CSR implication and disclosure, and with much still remains to attain sustainability goals. Besides, the researchers highlighted some prominent issues on designing suitable organisational or methodological framework to effectuate socio-economic justice, morality and ethics, and human rights reforms substantively. This may constructively extend and sustain CSR practices within the education realm. Nevertheless, CSR activities in education should be emphasised to seek for real engagement of the corporations involved with the society.

Theoretically, CSR practices in academia prominently angled at Stakeholder Theory (Blake, 2020; Anis Suriati Ahmad, 2016). Freeman (1984) as cited in Goyal (2022) defined stakeholder as *"those identifiable groups or individuals, who can affect or is affected by organisational performance in terms of its products, policies and work processes on which the organisations rely on for its survival."* In this sense, funding and support from interested stakeholders beyond the school setting is welcomed. Mallow (2022) exposed that the MOE has identified 351 dilapidated schools in Sarawak alone in which 107 schools have been categorised as unsafe. The issues on school infrastructure and facilities may hinder not only academic progress among pupils but also the performance of teachers. School performance is enhanced in schools with better learning facilities (Barrett, Treves, Shmis, and Ambasz, 2019). In practice, the Stakeholder Theory would embolden the business corporations to speed up the repair process through their funding as it is their responsibilities as beneficiaries towards communities and society at large which could be exercised through the principle of governance and principle of externalities (Freeman, 1984) with *"the current rules and policies deployed for managing the relationship between an organisation and its stakeholders that can be amended with the help of unanimous consent"* and in which *"the principle covers the people within the organisation and people from outside"* respectively.

A closer look at the two guiding curriculum principles in 21st century in Standards-Based English Language Curriculum (2018) that is currently being used, for instance, emphasises on preparing pupils for the real world as well as readying them to acquiring global competencies. Hence, braving this era of fast-paced digital advancement, CSR strategies are deemed imperative to bridge the gap between breaking the cocoon of working in the analog world to embracing and ushering in the new epoch of logarithmic, cybernated and automated era. Business corporation alongside teachers may equip pupils with necessary skills to ensure that they will not enter the work force with disadvantage. A report by the World Economic Forum (2022) on “Catalysing Education 4.0: Investing in the Future of Learning for a Human-Centric Recovery” has prioritised on *“an approach to reimagining education in a way that is inclusive, focuses on a broad range of skills to prepare learners for the Fourth Industrial Revolution, and leverages technological and pedagogical innovation to put learners at the centre of learning”* which echoes well with Wahid Omar (2017) whom pointed out the need to *“create an enabling environment for learners, academics and practitioners to break barriers, imagine, innovate, create, and collaborate; develop a 4.0-ready ecosystem fitting to institutional contexts”* as mentioned in Shahroom and Hussin (2018). Business corporations partaking in education is a realistic and indispensable intervention as it is utilitarian in nature amidst Education 4.0 and Industrial Revolution 4.0. The business corporation could help in re-aligning the curriculum to meet the demand of the industry by creating a purposive lesson for the pupils to prepare them to be effectual community of practice in the real world.

4.0 THE ROLE OF CSR IN EDUCATION

In Malaysia, as the country tiptoed and embarked on its journey into digitalisation era, since 2000, the private initiatives engagement with the MOE has been established particularly in creating and providing workforce with ICT expertise. Besides setting up computer laboratories throughout the nation, this smart partnership has thrived in other projects like Schoolnet, GSB Technology Learning in School, Samsung Digital Classroom School Adoption Programme, K-Perak E-Learning Cluster No.1 (KPEC), Cyberkids Camp, e-Learning Project for Life 2 Syarikat Apple, IBM Programme– Kidsmart Early Learning for pre-school, Education Project and dan Human Capital NCIA-KPM(Edu Citi-Hostel) and Value Add Microsoft for “Upholding Bahasa Malaysia and Strengthening the English Language” Programme (MOE, 2023). In return, the government could save the cost of system development, improved overall performance of government agencies, facilitate in data and resource sharing, enhance skills, knowledge and expertise, reduce disparities between more capable and less capable agencies in developing IT applications, coordinate government agencies in the development of IT and contribute to overall national development and economic recovery (MOE, 2023).

Based on an annual report for Malaysia by UNICEF (2023), MOE and technology partners Google, Microsoft and Apple relaunched the Digital Educational Learning Initiative Malaysia (DELIMa) 2.0 platform to promote the inclusion of marginalised children and reimagining education through virtual classroom which has been accessed over 19,000 times with 5,600 unique users by August 2022. According to the report, this project-based lessons could have enhanced the 21st century skills for both teachers and pupils which has also supported their growth mindset that will better acquainted them with global citizenship education. Besides, those children in institutions under the Malaysian Prison Department will not be left out. They will also benefit from the similar platform. With this groundbreaking initiative, UNICEF's work via DELIMa has been recognised as a Sustainable Development Goal 4 global best or innovative practice.

UNICEF Malaysia (n.d) also unveiled that in 2011, Khazanah Nasional in collaboration with the MOE had established 10 Trust Schools which would be managed more professionally to ensure quality education. In addition to the normal Government allocation, these schools received contributions from Khazanah Nasional. Other than that, in 2013, FELDA spent RM100 million a year on education, skills training programmes and scholarships for 5,000 new generation children from which 30% or 2,000 people are children outside of the FELDA scheme. Besides, government-linked companies and government-linked investment companies allocated about RM500 million for CSR in community development, scholarships, education, sports and environment. On top of that, in 2020, Yayasan Petronas invested RM2.5 million into the Program Duta Guru Kementerian Pendidikan Malaysia - Yayasan PETRONAS (PDG), a 9-year commitment to prepare teachers to become a catalyst for change in the classroom, where children are fortified to take on STEM subjects and realise their potential (Yayasan Petronas, 2020).

Another public-private-partnership that has been engaging actively with the education sector in Malaysia is Yayasan Amir. Yayasan Amir (2021) in its Annual Progress Report revealed that the foundation has been working with various other corporations like Khazanah Nasional, Yayasan Hasanah, Yayasan DayaDiri, Westports Malaysia, UEM Group Berhad, Petronas, Yayasan Pahang, Tenaga Nasional Berhad, *Majlis Agama Islam dan Adat Istiadat Melayu* Perlis and LeapEd Services Sdn. Bhd. to accelerate the development of a holistic educational experience for children in Government schools via the Trust Schools Programme (TSP). This is done by enhancing teachers' teaching competency and strengthening the role of school leaders as pedagogical masters, thus ensuring that they move along with the greater continuum of expanding growth mindset. Yayasan Amir commemorated its pledge to facilitate a total of 37 secondary schools and 57 primary schools throughout Malaysia since 2011 by signing the Public-Private Sector Operation & Management Agreement (Yayasan Amir, 2021).

Yayasan Amir (2021) takes pride in transforming the lives of 6,522 teachers and 159,229 students nationwide through their Trust School's *Tamat Tempoh Matang Intervensi Programme* with a clear emphasis on student development as well as quality teaching and learning. Pulsating on integrated school improvement, Yayasan Amir divulges the four strategic goals which include developing high quality leadership and management, improving the quality of learning and teaching, maximising student achievement and potential as well as strengthening the engagement of parents, community and other stakeholders. The strategic goals are manifested in three phases namely planning (Key Performance Target setting, roadmaps planning and annual tactical plan customisation), training and supporting (Application Reflection Challenge (ARC) technique for staffs, Continuous Professional Development Modules completion, scaffolded teaching and learning practices and baseline observations on school diagnostics) and monitoring phase through Performance Management System.

5.0 ENJOYING THE BOUNTIFUL HARVEST

The World Bank (2019) reported that the world is facing a learning crisis as many education systems across the developing world have little information on who is learning and who is not. Based on the report, pupils are unable to "*interpret information, form opinions, be creative, communicate well, collaborate, and be resilient.*" The report also disclosed that many education systems provide less support for teachers and this report perpetuated the notion that "*the learning crisis is a teaching crisis.*" Teaching pedagogies and methodologies need to evolve. Teachers call for support as the quality of an education system in embracing Education 4.0 will depend to some extent on the teacher's ability to exploit synergies with other parts of its classroom operations like business corporations. This is where CSR engagement comes in handy. The insights from the industry players themselves would be an immeasurable added value in widening pupils' perspective on education which will now, surpass their classroom setting as they see education in action.

The success stories from the impact study carried out by LeapEd (2018) involving 83 schools under the Trust School Programmes 1.0 (TSP1.0) by Yayasan Amir across 12 states in Malaysia, including Kelantan (5 schools), Terengganu (12 schools), Pahang (3 schools), Kuala Lumpur (6 schools), Negeri Sembilan (1 school), Johor (18 schools), Sarawak (15 schools), Sabah (5 schools), Selangor (14 schools) and Perak (4 schools), would create an optimistic mood and possibly become a game changer in Malaysia education system. The study revealed that 95% of secondary school teachers and 76% of primary school teachers moved up by at least 1 level up the scale, from 'starting to developing' or 'enhancing to extending'. This promising progression among the professional is central to unlocking pupils' holistic potential. The trickle effect would in turn benefit the communities and society at large.

Another key finding from the impact study revealed that 91% of primary & 88% of secondary pupils perceived the quality of teaching to be high. 66% of senior leadership in schools indicated they have progressed a minimum of 1 level. 49% of middle leadership indicated they have progressed a minimum of 1 level and 61% of teachers indicated they have progressed a minimum progress of 1 level. TSP1.0 succeeded in bridging the gap between parents and schools too. The impact study also stated that the level of interaction between parents and school has improved which consequently increased parental involvement in school activities. Parents are reported to have higher levels of satisfaction with their child's education as they have clarity around what it means for their child to be in Trust School. Because of the inspiring accomplishment of TSP1.0, TSP2.0 which has been aligned to meeting the global trends and national aspiration was launched in 2019 to further alleviate Malaysia education system to a greater height. TSP2.0 holds on to an inclusive, equitable supportive system by seeing school as introspective, instructional innovation, ensuring that learning space promotes 21st century learning and nurturing a culture of life-long learning.

In any partnership, the benefit should be reciprocated and mutual. Likewise, the business corporations do not lose out on their CSR engagement in education. CSR is also a free marketing as pointed out by Araújo, Pereira, and Santos (2023) in which it can boost the brand trustworthiness and in return, the customer's support, confidence and loyalty would increase. Above all, as illustrated in a report by UNICEF Malaysia (n.d), Malaysian government in their effort to increase CSR initiatives has provided them with tax incentives for child care centre facilities (S 34 (6) (i) of the Income Tax Act, 1967 allows for a single tax deduction), schools and learning centres for children with learning disabilities (PU (A) 247/2008 Income Tax (Exemption)(No.5) Order 2008 allows for tax exemption), library services (S 34 (6) (g) and S 44 (8) of the Income Tax Act, 1967), contribution to the community (S 34 (6) (h) of the Income Tax Act, 1967), student scholarships (S 34 (6) (l) of the Income Tax Act, 1967) and provisions for disabled persons (S 44 (9) of the Income Tax Act, 1967).

6.0 CONCLUSION

This concept paper has shed some lights on the importance of understanding the absence of practical, impactful and meaningful lesson that has taken away the joy of learning. This concept paper has shown that teachers need supports in their lesson preparation. It also reveals that pupils learn best if they know what awaits them on the street. This concept paper encapsulates endless possibilities of teaching and learning excitement shall the gatekeeper allow more room for business corporation to be actively assisting schools or perhaps involved in curriculum designing. This synergy may capture the possible misinterpretations in the execution of on-site learning which therefore hinders schools from achieving their intended goal. Thus, to ensure the pupils who will be the future workforce are relevant and competitive on the global stage, tailoring the curriculum to meet the demands of the real industry is second to none. The engagement between MOE and business corporation will serve as a developmental milestone in proper planning of the effective, flexible and comprehensive

curriculum. Working out on a feasible, realistic educational plan by synergising with the world of corporate should be the focal substance of discussion moving forward. Ultimately, this paper celebrates the readily established and potential partnerships between MOE and private sectors. Harnessing CSR in a complex pursuit of successfully taking up Education 4.0 is likely becoming the saving grace to meet the demand of the employers especially in responding to the needs of Industrial Revolution 4.0.

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Principal Distributed Leadership and Teacher Job Satisfaction in High-Performing Primary Schools in Johor

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Abstract

The principal's leadership is one of the issues that increasingly affects teacher job satisfaction. It not only has an impact on student achievement, but also affects the school's performance as a whole. The incompetence of the principal has had an impact on teachers in schools, especially high-performing schools. However, the issue of the impact of the principal's distributed leadership on teachers' job satisfaction has not yet been comprehensively identified. Therefore, this study was carried out to achieve three main objectives, namely first to identify the dominant dimension of distributed leadership of high-performing primary school principals, secondly to determine the level of job satisfaction of teachers and thirdly to determine whether there is a relationship between distributed leadership on teacher job satisfaction in high-performing primary schools in Johor. This study uses a quantitative approach. Questionnaire was used as a main source of data. The analysis was made by looking at the relationship between distributed leadership and teacher job satisfaction. This study has successfully identified the most dominant dimension of high-performing primary school principals which is cohesive leadership, second is supervision, third is participatory decision making and finally support. In addition, high-performing primary school principals in Johor practice distributed leadership at a high level. This study also found that teachers in high-performing primary schools in Johor are high in social relationships between colleagues and safe working conditions. This study also clarifies that distributed leadership is significantly related to teacher job satisfaction in high-performing primary schools in Johor. Therefore, the Malaysian Education Development Plan (PPPM) 2013 – 2025 through its fifth shift which is: 'Ensuring High Performance Leadership placed in Every School' should be seen seriously by the school administration to ensure teacher job satisfaction. It is very important to dignify the teaching profession and the government effort in shifting towards distributed leadership.

Keywords: Distributed leadership, job satisfaction, high performance schools in Johor.

Abstrak

Kepimpinan pengetua merupakan salah satu isu yang semakin menjejaskan kepuasan kerja guru. Ia bukan sahaja memberi impak kepada pencapaian pelajar, malah turut menjejaskan prestasi sekolah secara keseluruhannya. Ketidakecakapan pengetua telah memberi kesan kepada guru di sekolah terutamanya sekolah berprestasi tinggi. Bagaimanapun, isu kesan kepimpinan teragih pengetua terhadap kepuasan kerja guru masih belum dikenal pasti secara menyeluruh. Oleh itu, kajian ini dijalankan untuk mencapai tiga objektif utama iaitu pertama untuk mengenal pasti dimensi dominan taburan kepimpinan pengetua sekolah rendah berprestasi tinggi, kedua untuk menentukan tahap kepuasan kerja guru dan ketiga untuk menentukan sama ada wujud hubungan. Antara kepimpinan teragih terhadap kepuasan kerja guru di sekolah rendah berprestasi tinggi di Johor. Kajian ini menggunakan pendekatan kuantitatif. Soal selidik digunakan sebagai sumber data utama. Analisis dibuat dengan melihat hubungan antara kepimpinan teragih dengan kepuasan kerja guru. Kajian ini telah berjaya mengenal pasti dimensi pengetua sekolah rendah berprestasi tinggi yang paling dominan iaitu kepimpinan bersatu padu, kedua penyeliaan, ketiga membuat keputusan secara partisipatif dan akhir sekali sokongan. Selain itu, pengetua sekolah rendah berprestasi tinggi di Johor mengamalkan kepimpinan teragih pada tahap tinggi. Kajian ini juga mendapati guru di sekolah rendah berprestasi tinggi di Johor mempunyai hubungan sosial yang tinggi antara rakan sejawat dan keadaan kerja yang selamat. Kajian ini juga menjelaskan bahawa kepimpinan teragih mempunyai hubungan yang signifikan dengan kepuasan kerja guru di sekolah rendah berprestasi tinggi di Johor. Justeru, Pelan Pembangunan Pendidikan Malaysia (PPPM) 2013 – 2025 melalui anjakan kelimanya iaitu: 'Memastikan Kepimpinan

Berprestasi Tinggi ditempatkan di Setiap Sekolah' perlu dilihat secara serius oleh pihak pentadbiran sekolah bagi memastikan kepuasan kerja guru. Adalah amat penting untuk memartabatkan profesion perguruan dan usaha kerajaan dalam beralih ke arah kepimpinan teragih.

Kata kunci: Kepimpinan teragih, kepuasan kerja, sekolah berprestasi tinggi di Johor.

1.0 INTRODUCTION

The principal's leadership is one of the issues that increasingly affects teacher job satisfaction. It not only has an impact on student achievement, but also affects the school's performance as a whole (Azorín et al., 2019). Distributed Leadership is the distribution of power from the principal to other teachers (Berjaoui & Akkary, 2020). It will reduce the principal workload because he can no longer act as a hero and carry all the tasks on his shoulders (Goldstein, 2016). This is because each individual has their own expertise and is not versatile. The practice of distributed leadership is the principal's ability to assign tasks to teachers who are skilled and capable of carrying out the entrusted tasks (Manaze, 2019). In the distribution of the tasks, the principal needs to take care of the teachers' job satisfaction so that they are not stressed by the excessive workload (Samancioglu et al., 2020). This is because satisfied teachers will enjoy teaching (Torres, 2019). Then the students will benefit from the teacher. However, the incompetence of the principal has had an impact on teachers in schools, especially high-performing schools. In addition, the issue of the impact of the principal's distributed leadership on teachers' job satisfaction has not yet been comprehensively identified. Therefore, this study was carried out to achieve three main objectives as follows:

- i) Identifying the dominant dimensions of leadership distribution of high-performing primary school principals.
- ii) Determining the level of teacher job satisfaction in high-performing primary schools in Johor.
- iii) Determining whether there is a relationship between distributed leadership and teacher job satisfaction in high-performing primary schools in Johor.

2.0 LITERATURE REVIEW

Definition

In discussing distributed leadership, there are several researchers who have given a definition of distributed leadership according to the context of their study. Spillane (2006) says distributed leadership is not the same as shared leadership, democratic leadership and team leadership. Harris (2008) explained that distributed leadership is participative leadership without a monopoly of leadership power. Gronn (2002) states that distributed leadership is organizational members working together spontaneously and acting towards a common goal. Leithwood et al. (2007) argue that the concept of distributed leadership is a practice or initiative used by leaders to influence other members of the organization. Hulpia et al. (2012) distinguish it can be concluded that distributed leadership is the leader of the organization sharing power and cooperating with other members of the organization to act towards the same goal. Job satisfaction is an important factor that determines whether the employee will remain in the organization or move to another organization to achieve the desired job satisfaction (Stamschror, 2021). Job satisfaction is an instinct in those who want to make a contribution to the organization (Berjaoui & Akkary, 2020). It is also the employee's feelings about liking or not with all forms of work done (Petcu et al., 2021). If employees feel happy and satisfied with their current job, it will encourage increased productivity and reduce their likelihood of quitting (Shann, 1998). Job satisfaction is also closely related to work stress (Moodley, 2018). Employees with high levels of stress experience low levels of satisfaction (Lopes & Oliveira, 2020). This depends on the way the principal distributes tasks to other fellow teachers, which is the distributed leadership style of the principal. The systematic implementation of work will reduce the level of work pressure among teachers because the division of duties will ease their

workload and the principal's (Lee, 2019). Indirectly all parties will get maximum job satisfaction without experiencing severe work pressure (Johnson & Holdaway, 2016).

Theory

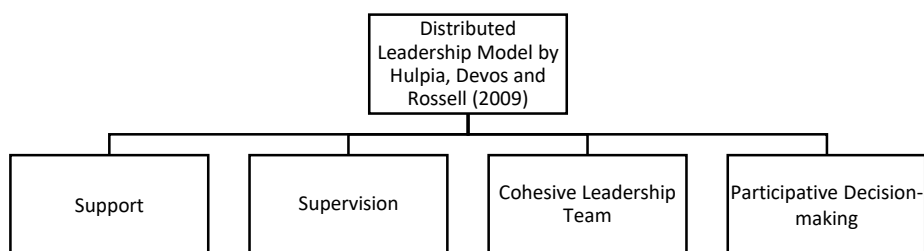


Figure 1 Elements of Distributed Leadership by Hulpia, Devos dan Rosseel et al.(2009)

There is a theory used in this study which was developed by Hulpia, Devos and Rosseel. Hulpia et al. (2009) developed a distributed leadership theory to strengthen the knowledge of leaders in shaping effective leadership practices in the organization. In 2009, Hulpia et al. developed and validated Distributed Leadership Inventory with three main dimensions which are (i) support; (ii) supervision and (iii) a cohesion leadership team. In 2012, Hulpia et al. added a fourth dimension which is participative decision-making. The four dimensions of this distribution leadership practice are used to review the distributed leadership in terms of organizational functions and to examine the actions of principal, assistant principals and teacher leaders who carry out tasks.

The supportive leadership function is characteristic of the transformational leadership model, in which the leader is responsible for fostering and setting a collective school vision and clear goals, motivating and helping teachers, and stimulating teachers' professional learning (Leithwood & Jantzi, 2007). The supervisory leadership function is characteristic of the instructional leadership model, where the leader is a key actor in controlling and monitoring teachers in schools (Tsu, 2019). Cohesive leadership team focus on how the members of the leadership team work together which reflects the openness of team members, as well as their mutual trust, communication, and cooperation (Jamil & Hamzah, 2019). Participative school decision making has claimed that distributed leadership should not be restricted to leaders at the top of the organization but among all teachers (Jamail & Don, 2017).

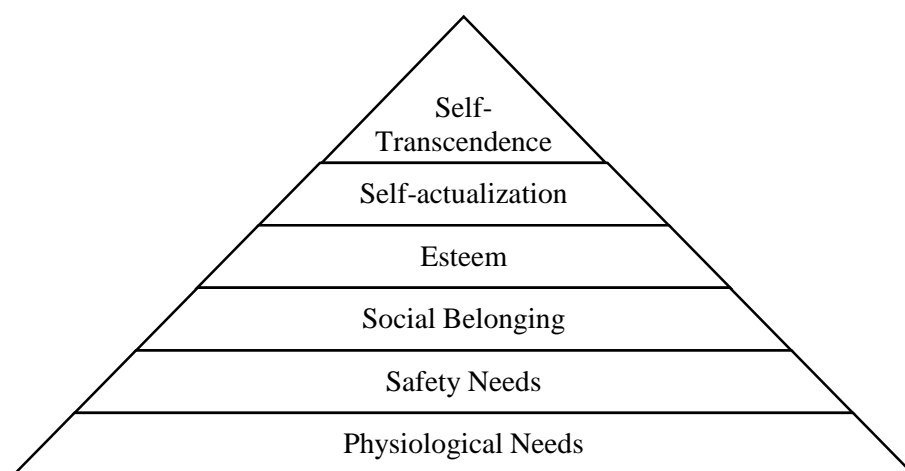


Figure 2 Hierarchy of Needs Theory (Maslow, 1954)

Maslow describes the needs of individuals belonging to several levels of human needs in the form of a pyramid. Physiological needs are the most basic needs of all workers which are food and shelter that can be obtained with the salary given by the employer (Fernan et al., 2017). Safety needs are physical health and free from threats (Masyhum, 2021). Social needs are love, belonging, acceptance and companionship (Patricia & Asoba, 2020). Self-esteem which means that they feel respected and valued (Zulfiqar & Shaker, 2019). Self-actualization is the manifestation of self-potential that can bring change to the world like the achievement of Bill Gates who created Microsoft Word (Bello dan Nasiru, 2021). Self-transcendence is a need that was newly explored by Maslow in 1970 based on his old version (Dohlman et al., 2019). It is a situation where the individual begins to understand the true meaning of life in a divine way.

However, distributed leadership is said to be a leadership practice that pleases the authorities but increases the teacher's workload (Samancioglu et al., 2020). This will affect the job satisfaction of teachers causing resignation or early retirement (García Torres, 2019). Student welfare is also affected.

3.0 DISCUSSION

This study is discussed according to the objectives of the study that have been set. That includes the dominant dimension of principal's distributed leadership, the level of teachers' job satisfaction and whether there is a relationship between distributed leadership and teachers' job satisfaction in high-performing primary schools in Johor.

Dominant Dimensions of Principal Distributed Leadership

This study has successfully identified the most dominant dimension of distributed leadership by high-performing primary school principals which is a cohesive leadership team, second is supervision, third is participatory decision making and finally support. In addition, high-performing primary school principals in Johor practice distributed leadership at a high level.

Level of Teacher Job Satisfaction

This study also found that teachers in high-performing primary schools in Johor are significant in social relationships between colleagues and safe working conditions. The collaborative culture contributed to a positive and supportive atmosphere, in which teachers felt empowered to explore innovative teaching methods and continuously improve their teaching skills. This research delved into the various factors that contributed to the success of these schools and shed the light to the strategies used by teachers and administrators to create an optimal work environment (Liu & Watson, 2020).

The Relationship between Distributed Leadership and Teacher Job Satisfaction in High-performing primary Schools in Johor

Therefore, distributed leadership is significantly related to teacher job satisfaction in high-performing primary schools in Johor. Furthermore, distributed leadership fostered a culture of trust and mutual respect among all stakeholders in these schools. Teachers felt more invested in the school's success because they had a say in shaping school initiatives and direction. This shared responsibility fostered a positive work environment in which teachers felt supported and motivated to excel in their roles, leading to higher levels of job satisfaction (Hulpia et al., 2009).

4.0 CONCLUSION

Therefore, the vision of the Malaysian Education Development Plan (PPPM) 2013 – 2025 through its fifth shift which is: 'Ensuring High Performance Leadership placed in Every School' should be

seen seriously by the school administration to ensure teacher job satisfaction (Ujil & Andin, 2018). It is very important in the dignity of the teaching profession and the shift towards distributed leadership (Chew, 2018). This study can be conducted elsewhere in Malaysia in the future.

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A Journey towards Sustainability: A Review of Teaching Strategies for Embedding the Sustainable Development Goals (SDGs) into Malaysian Curriculum

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Abstract

This paper aimed to review the literature on teaching strategies for embedding Sustainable Development Goals (SDGs) into the Malaysian curriculum. The selection of appropriate teaching strategies is crucial for effectively imparting knowledge about the SDGs to students. This helps them become active participants in the world and foster empathy and compassion within themselves. Learning about the SDGs allows students to develop a deeper understanding of global issues such as food insecurity and climate change, which are intricately connected with culture. To truly comprehend the SDGs, students must gain insight into the world around them. This study reviewed 10 mostly indexed journals from Scopus, and Web of Science related to teaching strategies for SDGs in the Malaysian curriculum. The majority of reviewed journals implicitly positioned SDGs as the central topic of discussion. Nevertheless, these articles were eligible for inclusion in the study as they focused on the three pillars of sustainability (environmental, social, and economic dimensions). The reviews show that teaching strategies for embedding the SDGs into the curriculum were implemented at both the school and university levels. The review highlights the need for researchers, the Ministry of Education, and teachers to achieve a more comprehensive understanding of teaching strategies for embedding the SDGs into the curriculum, particularly within the context of the Malaysian curriculum. To achieve this, it is crucial to adopt more systematic and empirically stringent methodologies and research frameworks.

Keywords: Teaching strategies, embedding, global issues, Sustainable Development Goals (SDG)

Abstrak

Kajian ini bertujuan untuk mengkaji literatur mengenai strategi pengajaran yang digunakan untuk menerapkan Matlamat Pembangunan Mampan (SDG) ke dalam sistem pendidikan di Malaysia. Memilih strategi pengajaran yang bersesuaian adalah penting dalam menyampaikan pengetahuan tentang Matlamat Pembangunan Mampan (SDG) kepada pelajar. Ini membantu mereka menjadi peserta aktif di dunia dan memupuk empati dan belas kasihan dalam diri mereka. Pembelajaran tentang SDG membolehkan pelajar membangunkan pemahaman yang lebih mendalam tentang isu global seperti ketidakamanan makanan dan perubahan iklim. Isu-isu ini berkait rapat dengan budaya dan untuk pelajar benar-benar memahami tentang SDG, mereka perlu belajar tentang dunia di sekeliling mereka. Kajian ini menemui dan menyemak 10 jurnal yang kebanyakannya diindeks daripada Scopus dan Web of Science yang berkaitan dengan strategi pengajaran untuk SDG dalam kurikulum Malaysia. Penemuan mendedahkan bahawa majoriti jurnal secara tersirat meletakkan Matlamat Pembangunan Mampan (SDG) sebagai topik utama perbincangan. Namun begitu, hanya journal yang memfokuskan kepada tiga tonggak kemampanan (dimensi alam sekitar, sosial dan ekonomi) sahaja yang dimasukkan ke dalam kajian ini. Semakan literatur menunjukkan bahawa strategi pengajaran yang digunakan untuk menerapkan Matlamat Pembangunan Mampan (SDG) ke dalam kurikulum berlaku di peringkat sekolah dan universiti. Untuk memberikan pemahaman yang lebih baik kepada penyelidik, Kementerian Pendidikan dan guru tentang strategi pengajaran bagi membenamkan Matlamat Pembangunan

Mampan (SDG) ke dalam kurikulum terutamanya dalam kurikulum di Malaysia, metodologi yang lebih sistematik secara empirik dan rangka kajian perlu digunakan.

Kata kunci: Strategi pengajaran, penerapan, isu global, Matlamat Pembangunan Mampan (SDG)

1.0 INTRODUCTION

The responsibility for imparting knowledge on sustainable development to the next generation lies with educators in educational institutions, including schools and universities (Agirreazkuenaga, 2019). They are regarded as catalysts for introducing the Sustainable Development Goals (SDGs) (Potter Nelson dan O'Neil, 2019). Hence, it is imperative for educators to enhance their comprehension and proficiency in teaching strategies that are apt for embedding elements of the SDGs into their teaching practices (Stevenson, Lasen et al. 2017). In order to effectively navigate the dynamic educational landscape and cultivate exceptional students, it is imperative for teachers to possess a robust repertoire of teaching strategies. This entails a comprehensive understanding of the appropriate teaching strategies to employ, ensuring that they are equipped to impart the requisite knowledge, understanding, values, skills, and aptitudes to their students.

The fourth goal of the SDGs pertains to education, with a specific emphasis on ensuring high-quality education that is inclusive and equitable. This goal also seeks to promote opportunities for lifelong learning for individuals of all backgrounds (Friedman, York et al., 2020; Gamage, Ekanayake et al., 2022). Education has been assigned a significant role and is considered crucial to attaining the overarching 2030 Agenda.

Education for Sustainable Development (ESD) has emerged as a response to global agreements, highlighting the crucial role that educational institutions play in imparting the essential knowledge, skills, attitudes, and values required for creating a sustainable future. According to the United Nations Educational and Organization (2014), ESD involves integrating significant sustainable development issues into the teaching and learning process. These issues encompass various topics, including climate change, disaster risk reduction, poverty alleviation, and sustainable consumption.

Implementing appropriate teaching strategies in the context of education for sustainable development can foster empathy and a sense of connection with sustainable endeavors. This can be achieved by acquiring knowledge and skills that lead to transformative attitudes and orientations. The purpose of implementing ESD is to facilitate the transition toward a more sustainable global society by fundamentally changing individuals' cognitive processes and behaviors. Conducting a systematic review assumes significance as it can provide valuable insights into the most commonly used and suitable teaching strategies for ESD. However, to date, there has been a limited amount of systematic review conducted on this subject matter. In an effort to bridge this knowledge gap, our study provides a comprehensive overview of the findings derived from a systematic literature review on teaching strategies and approaches aimed at implementing the SDGs into the Malaysian curriculum. Additionally, we identify potential directions for future research as well as propose recommendations for educational policies and interventions by the Ministry of Education.

2.0 LITERATURE REVIEW

Education for Sustainable Development (ESD), also referred to as Education for Sustainability (EFS), is a pivotal instrument in achieving all of the United Nations' Sustainable Development Goals. These goals demonstrate the imperative for individuals to possess the requisite knowledge and competencies to effectively address the complexities associated with fostering a more sustainable global environment. Howell (2021) asserts that the enhancement

of student engagement and learning achievement in the context of ESD necessitates the implementation of suitable teaching strategies. Teaching strategies for ESD are an intrinsic element of education. Therefore, the implementation of ESD necessitates comprehensive transformations that encompass the entirety of the educational institution, including the selection of appropriate pedagogical approaches (Sterling 2004, Leicht, Heiss, et al. 2018). Abeysekera and Dawson (2015) point out that relying solely on traditional teaching strategies is inadequate for imparting knowledge about the SDGs. This is due to the inherent limitations of traditional methods in effectively fostering the acquisition of values and skills necessary for understanding and engaging with the SDGs. The point that is made in this statement is supported by Ssosse, Wagner, et al. (2021), who argue that the successful attainment of ESD goals necessitates the renewal of teaching strategies. As a result, numerous studies have been undertaken pertaining to teaching strategies and approaches that are applicable to the field of ESD (Stevenson, Lasen et al. 2017, Buil-Fabrega, Martínez Casanovas et al. 2019, Carlos 2019, Evans 2019, García-Feijoo, Eizaguirre et al. 2020, Njura, Kubai et al. 2020, Weber, Lindenmeyer et al. 2021, Gamage, Ekanayake et al. 2022).

According to Howell (2021), there is a need to shift the current approach toward selecting appropriate, engaging, and efficient instructional teaching strategies for ESD (Table 2.1). This is because, according to UNESCO (2017), the implementation of interactive techniques and strategies aimed at promoting sustainable development can lead to improved student engagement, improve information retention, and consequently increase overall satisfaction with the learning process. In the year 2020, UNESCO specifically emphasized the utilization of project-based and student-centered interactive teaching methods in the implementation of ESD. Howell (2021) provides support for the statement that teaching strategies used in ESD ought to prioritize self-directed or individual learning. Additionally, Foster and Stagl (2018) highlight the significance of problem-solving, reflexivity, and collaboration as essential components of the teaching strategies approach in the context of ESD.

Table 1 The shift in teaching strategies required for ESD

From	To
Transmissive instruction	Constructivist, participatory, and transformative learning
Passive learning	Reflective and active learning
Teacher-centred approach	Learner-centred approach
Discipline based	Inter- and transdisciplinary based
Learning dominated by theory and accumulation of abstract knowledge	Praxis-oriented learning linking theory and experience/real-world knowledge
Few learning styles	Multiple learning styles
Individual learning	Collaborative learning
Emphasis on cognitive objectives	Cognitive, affective and skills-related objectives

Adapted from Sterling (2013: 37) and Bedi and Germein (2016: 128)

3.0 METHODOLOGY

To facilitate an in-depth analysis of the literature based on a reproducible and transparent review process, we utilized a systematic review methodology (Tranfield, Denyer et al., 2003; Pittaway and Cope, 2007). Our review was influenced by a configurative approach in which

we focused predominantly on discovering patterns in the data provided by the sample heterogeneity (Gough, Thomas, et al. 2012). This study reviews the literature regarding two criteria: a) A journal article pertinent to the curriculum implementation of sustainable development in Malaysia; b) Teaching strategies for embedding the Sustainable Development Goals (SDGs) into the Malaysian curriculum. The authors aimed to assess teaching strategies for embedding the SDGs into the Malaysian curriculum by reviewing journal articles published up to July 2023. Since the United Nations (UN) adopted the SDGs in 2015, the selection of articles has been restricted from 2015 to 2023. The search terms used to search for relevant journal articles from the database are shown in Table 3.1. The use of broad search terms was deliberate in order to search for as many published papers as possible. In this review, the authors selected journals employing qualitative, quantitative, and mixed research methodologies. The screening and filtration process resulted in the exclusion of the following papers: a) The full paper cannot be retrieved; b) the topic and context are irrelevant; c) conference proceedings, review papers, and book chapters; and d) duplicate articles. Therefore, the total number of journals was reduced to 10, and thematic analyses were conducted (see Table 2).

Table 2 The search string used in this study

Database	Search string
Scopus	("Integrating" OR "Integration" OR "Implement" OR "Embedding" AND "Teaching strategies" OR "Pedagogies" OR "Teaching method*") AND ("Real world issue" OR "Global issue*") AND ("Sustainable Development" OR "Sustainability" OR "Sustainable Development Goal" OR "SDG" OR "Agenda 2030" OR "Global agenda")
Web of Science	
Asean Citation Index	

4.0 DATA ANALYSIS

Table 3 presents the data findings from ten research articles that discuss the best teaching approaches for embedding the Sustainable Development Goals (SDGs) in education. The findings reveal various strategies and methods recommended by researchers for imparting knowledge about the SDGs to students.

Table 3 Data Findings

Reference	Educational level	Educational discipline	Method of integration	Content
Ling, Pang et al. (2019)	Secondary school education	Science Technology Engineering Mathematics (STEM)	Student-centered, action-oriented, transformative learning	-Focus on contextual problem solving (real-world issues, situated in the learners' own context). -Students demonstrate enhanced competence and a deeper connection to their surrounding community.
Kanapathy, Lee et al. (2021)	Tertiary education	Chemistry	Experiential learning, service learning, inquiry-based learning, problem-	-Forming critical competencies in students to understand real-world problems, predict the future, identify

			based learning, current and future society's problems and make decisions synergistically.
			learning by doing/learning through exploration, group discussion, collaborative learning, outcome-based teaching and learning
			-Using both approaches of teacher-centered (by providing training), and student-centered (teaching strategies techniques)
			-Teaching strategy that encourage students to think creatively and critically (problem-based learning)
Ab Wahid, Lee et al. (2020)	Tertiary education	Sustainability Management Course	Project-Based Learning
			-Helping student to develop skills such (critical thinking, problem-solving, communication, collaboration, and self-management)
			-Exposing experiences in real problem in their living area.
			-Students were engaged in a rigorous, extended process of asking questions, finding resources, applying their knowledge, and gathering information.
Yacob, Yunus et al. (2022)	No information	English as Second language (ESL)	Course and lectures
			-Integration of critical global literacies into the lesson
			-Articulated with real-world issues and students' global engagement.
Chinedu, Saleem et al. (2023)	Tertiary education	TVET teacher training program	Case studies, stimulus activities, place-based learning, problem-based learning, simulation, transformative, collaborative learning, pedagogy of work, enquiry-based learning, heutagogical approaches (lecture or exposition)
			-Technical and vocational teachers must be trained to become vocationally competent and ESD competent.
			-Reinforce the importance of teaching sustainability in courses by integrate sustainability themes into their research and practice.
			-Integrate sustainability into co-curricular activities to develop skills for sustainability.
			-Prepare TVET educators for ESD through professional training and staff development programmes (workshop, profesional development forums, seminars, or by making several in-service training mediums available).

Syarina et al. (2022)	No information	TVET teacher training program	Networking with other partners	- Provide teaches with green skills specifications (e.g technological skills and expertise, pedagogical elements, work experience and appropriate environmental knowledge).
Mohd and Mohammad (2021)	Secondary school education	Geography	Story-telling, lectures, sharing issues,	-The teacher's teaching practice will determine whether a learning objective is achieved in the classroom. -Focusing on how to deliver the content by sharing some issues or any kind of program that related to sharing sessions.
Mohd et al. (2022)	Elementary School, Primary School, Tertiary education	Youth participation	ICT approach, combine in-class activities and outside-the-classroom projects	-Focus on practices integrating technology and SDGs into teaching, learning and project management activities involving students
Florianna et al. (2020)	Tertiary education	No information	Social groups	Focus in this study is to aim the survey students' awareness, attitudes and actions in regards to sustainable development. This study also investigates the students' overall awareness of attitudes towards and likelihood of action on sustainability in higher education.
Sharifah et al. (2021)	Secondary school education	Malay Language, History and Islamic Education	Guideline, complex issues, awareness	-Aims to increase students' knowledge, skills, and behavior toward sustainability. -Teachers are using the guidebook by doing some activities or programs that related to sustainability.

Based on the table presented, each article highlights distinct approaches to integration that align with the specific aims of their respective studies. For instance, Ling Pang et al. (2019) emphasize student-centered, action-oriented, and transformative learning. Their study concentrates on problem-solving activities aimed at familiarizing students with global challenges. Kanapathy et al. (2021), who suggest various integration techniques like service learning, inquiry-based learning, problem-based learning, learning by doing or learning through exploration, group discussion, collaborative learning, and outcome-based teaching and learning, offer another viewpoint. Their article also highlights the necessity of students being well-informed about global issues, enabling them to anticipate future difficulties and take immediate preventative measures. Similarly, it is stated that teacher-centered learning needs to be improved with training, and student-centered learning will depend on the strategy that the teacher uses.

In the article written by Ab Wahid Lee et al. (2020), project-based learning is an approach that can be used by teachers to achieve the SDGs. This teaching method focuses on developing students' skills through engaging projects that involve critical thinking, collaboration, and project management. By using this method, students are also closer to solving problems in the real world, allowing them to apply their knowledge and skills in meaningful ways. In addition, Yacoob et al. (2022), that SDGs can be effectively achieved through courses and lectures given to students. This article involves the integration of world issues into the curriculum to raise the students awareness and understanding of global challenges. Furthermore, Chinedu, Saleem, et al. (2023) also stated the valuable strategy of using problem-based learning for achieving the SDGs. Alongside this, they emphasize the importance of additional activities such as case studies, stimulus activities, simulation, transformative, and collaborative, as well as employing good pedagogy with students to further reinforce the SDG approach and enhance students' involvement and learning outcomes.

According to the opinion expressed by Syarina et al. (2022), networking with other parties can be beneficial as it generates more ideas and enables sharing activities. Improving sustainability skills by either involving various schools or communities can also have a significant impact on improving sustainability skills and promoting the achievement of the SDGs. Furthermore, Mohd and Mohammad (2021) emphasize that teachers play a crucial role in accomplishing educational objectives by sharing information with their students. Telling stories, giving lectures, and discussing problems are a few of the highlighted activities. To broaden the students' perspectives, teachers may discuss SDG-related topics throughout class activities. According to Mohd et al. (2022), the ICT method, which is more technologically advanced, can offer students a variety of engaging activities when introducing them to the SDGs. Additionally, extracurricular and classroom activities can also boost students' excitement, particularly when working on project development. This is especially important when creating an engaging learning environment outside of the classroom, which serves as an important motivator for students to participate in the SDG-related program.

In a study conducted by Floriana et al. (2020), the focus was on conducting a survey to gauge student awareness, attitudes, and actions related to sustainable development. The investigation aimed to understand the level of awareness, including action and attitudes, towards sustainability in higher education. A social group was created in the study to see the activities carried out by students. Meanwhile, the article by Sharifah et al. (2021) explored several teaching subjects to observe skills, knowledge, and behavior toward sustainability. The article provided a guidebook for teachers to increase awareness as well as guidelines to effectively convey complex sustainability issues to students through various teaching subjects. In conclusion, each article presents a different strategy to bring the SDGs closer to students and communities at school.

5.0 FINDINGS/ RESULTS

Based on the findings, four themes can be identified to explain the teaching strategies used for embedding the Sustainable Development Goals (SDGs). These themes are awareness, ICT approach, Activities, and Interactive teaching and Learning. Each article contributes a different perspective on the teaching approaches and strategies that can be applied to embed the SDGs into the Malaysian curriculum. Referring to Figure 1: Teaching Strategies for Embedding the SDGs below:

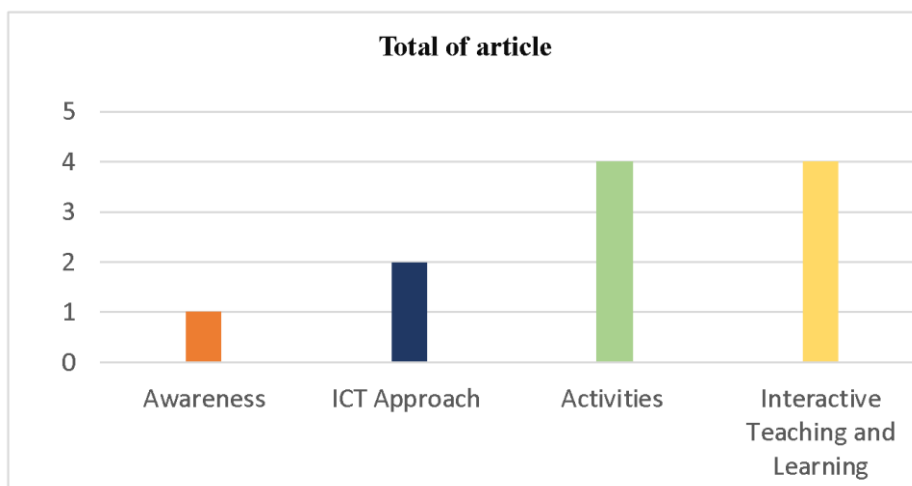


Figure 1 Teaching Strategy for Embedding the SDGs

Based on the findings, the highest theme is the implementation of activities to enhance students' understanding and engagement with sustainability in educational institutions. A total of four articles support the advantages of implementing activities as a means for teachers to instill attitudes and skills related to sustainability in students and the community. Next, there are two articles that support the second theme of the ICT approach and Interactive teaching and learning. The use of ICT in the teaching has a great effect to bring students closer to the program, facilitating easier access for teachers to provide guidance materials. Interactive teaching and learning provide attractiveness to students to be more open and interested in programs related to SDGs.

While one article focuses on raising awareness; in which this issue is also emphasized in other article. The cultivation of a high level of consciousness in society, appreciating the environment, and fostering knowledge and awareness of sustainability are key factors influencing how individuals perceive and think about the SDGs (Rahman, 2017).

Table 4 below shows a summary of the findings for each article along with the classified theme. Overall, each theme contributes uniquely to achieve the objectives of this study.

Table 4 Summary of article

Writer	Theme	Focusing	Data categories
Syarina et al. (2022)	Interactive Teaching and Learning Process	TVET	Enhancing teacher ability to teach students about sustainability
Mohd and Mohammad (2021)	Awareness	Geography teaching	Take a story-based approach when discussing issues related to sustainability, give special emphasis on sustainable living, and encourage ideals
	ICT approach		Integrating technology and SDGs into teaching, learning and project management activities involving students
Mohd et al. (2022)	& Interactive Teaching and Learning Process	Youth participation	& Teaching sustainable development using online platforms such as e-learning, integrated Information and Communication Technology (ICT), and electronic devices
Florianna et al. (2020)	ICT approach	Higher education	Awareness and changing the attitudes of future generations towards the importance of sustainability
Sharifah et al. (2021)	Interactive Teaching and Learning Process	School	Help teacher to deliver the content of 'global-curriculum'
Ling, Pang et al. (2019)	Activities	Science Technology Engineering Mathematics (STEM)	Giving problem solving activities that refers to the real issues and make them to go deeper connection with surrounding
Kanapathy, Lee et al. (2021)	Activities	Chemistry	Using both approaches of teacher-centered and student-centered.
Ab Wahid, Lee et al. (2020)	Activities	Sustainability Management Course	Helping students to develop skills such as critical thinking, problem-solving, communication, collaboration, and self-management by exposing experiences in real problems in their living area.
Yaccob, Yunus et al. (2022)	Interactive Teaching and Learning Process	English as Second language (ESL)	Students engage in global issues for them to know deeper things about the world

Chinedu, Saleem et al. (2023)	Activities	TVET	Workshops and seminars that are conducted to open up space for teachers to delve into the activities and programs that can be carried out
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6.0 DISCUSSION

Based on the findings from the reading materials, four primary themes emerged from the 10 articles on teaching methods for incorporating the SDGs. Through various studies, researchers have identified components that aid instructors in effectively carrying out instruction and bringing students closer to the SDGs. Based on the findings, these components have been used to establish themes that underline the significance of powerful teaching methods in bringing students closer to the importance of SDGs. The findings suggest that the use of powerful teaching methods can effectively engage students with the SDGs and foster a deeper understanding of their significance. When teachers apply these effective methods, they can share their successful approaches with other educators through various means. This is because, according to Nee et al. (2020), the sharing of good practices among teachers enhances their professionalism and promotes beneficial activities related to the SDGs. By sharing successful teaching methods, teachers can collectively contribute to the advancement of sustainability education and the achievement of the SDGs. This exchange of knowledge and practices can lead to a more cohesive and impactful approach to incorporating the SDGs into educational settings, ultimately benefiting both students and educators alike.

According to ESD, prioritizing pedagogy and strategy is essential to creating an atmosphere of sustainability in education. Rahman (2017) supports this idea by emphasizing that the development of attitudes, knowledge, and behaviors plays a crucial role in fostering commitment to managing the environmental issues that will be confronted. UNESCO (2017) also acknowledges the importance of promoting sustainability education among students and communities. Besides, several studies have also emphasized that education highlighting problem-solving learning serves as a pathway to promote sustainability that leads to achieving the Sustainable Development Goals (SDGs). (Ling, Pang et al., 2019; Kanapathy, Lee et al., 2021; Chinedu, Saleem et al., 2023; Ab Wahid, Lee et al., 2020).

7.0 CONCLUSION

Over the past few decades, there has been a growing recognition of the necessity for a holistic understanding of the phenomenon of sustainability. This recognition has led to the need for new educational perspectives, emphasizing the need to update the education system, including teaching strategies that effectively facilitate students' understanding and engagement with the SDGs. This review explores the evolution of research on teaching strategies for embedding the SDGs into education since 2015. Almost all the journals reviewed emphasized that the implementation of ESD requires learner-centered and interactive teaching strategies. The findings from this paper are anticipated to make a valuable contribution to the ongoing efforts to integrate the SDGs into educational practices among researchers and teachers, especially in Malaysia.

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Racial Tolerance among Malaysian Chinese Students in Malaysian University

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Abstract

Tolerance is an important aspect in dealing with society with differences and diversity. Tolerant spirit and attitude are critical when there are social and racial differences in an environment because the capacity to accept others will be put to the test when confronting various social elements. Instead of debating whether racism exists in Malaysia, it is time for everyone to go beyond the appearance of unity and outlaw racial discrimination. Therefore, racial tolerance which demonstrates a person's capacity to see beyond race is the focus of this research. The main objective of this research is to find out the development of racial tolerance of students in a university environment. An interview process with semi-structured interview protocol will be used to allow the students to voice out their opinion on racial tolerance. The data collected will be analyzed through manual analysis which require researcher to review, code, and interpret data. This research is expected to get result on identifying what sector in university influence the development of racial tolerance and explain the role of each sector. Besides, the data gathered should show the beliefs and justifications of students for tolerance judgements.

Keywords: Race, Racial Tolerance, University, Moral Development

Abstrak

Toleransi merupakan aspek penting dalam menangani masyarakat yang mempunyai perbezaan dan kepelbagaian. Semangat dan sikap bertolak ansur adalah kritikal apabila wujud perbezaan social dan kaum dalam sesuatu persekitaran kerana keupayaan untuk menerima orang lain akan diuji apabila berhadapan dengan pelbagai elemen sosial. Sudah tiba masanya untuk semua orang melangkaui penampilan perpaduan dan mengharamkan diskriminasi kaum daripada mambahaskan sama ada perkauman wujud di Malaysia. Oleh itu, toleransi kaum yang menunjukkan keupayaan seseorang untuk melihat melangkaui kaum adalah fokus kajian ini. Objektif utama penyelidikan ini adalah untuk mengetahui perkembangan toleransi kaum antara pelajar dalam persekitaran universiti. Proses temu bual secara separa berstruktur akan digunakan untuk membolehkan pelajar menyuarakan pendapat mereka tentang toleransi kaum. Data yang dikumpul akan dianalisis melalui analisis manual yang memerlukan pengkaji menyemak, mengekod dan mentafsir data. Penyelidikan ini diharap dapat mengenal pasti apakah sektor di universiti yang mempengaruhi perkembangan toleransi kaum dan menjelaskan peranan setiap sektor. Selain itu, data yang dikumpul harus menunjukkan kepercayaan dan justifikasi pelajar untuk penilaian toleransi.

Kata kunci: Kaum, Toleransi antara Kaum, Universiti, Pembangunan Moral

1.0 INTRODUCTION

Today, racial tolerance with its formation and development among different social groups, is becoming one of the most important social challenges. Studies have demonstrated that the expressions of tolerance keep on changing according to space and various contexts. Everyone finds themselves choosing who, over what and in which situation that they will demonstrate tolerance. It indicates that it will never be able to develop a universal knowledge of the structure of tolerance since it is multidimensional, multi-aspects, multi-dimensional, and vulnerable to certain situations (Nazri & Mansor, 2014). It is important to highlight, however, that tolerance is required not only for the existence of the problem in the country, but also for

whether the younger generation has sufficiently developed abilities in good cross-cultural and interethnic connections. (Rezida & Mirzatilla, 2016). The formation of racial tolerance in the student environment is one of the most urgent since it is the students who are the more progressive, organised, intellectually and creatively developed part of the youth. Thus the first objective for this research is to investigate the influence of Malaysian university students university experiences on the development of racial tolerance. Besides, it is vital to understand the development of racial tolerance because tolerance is frequently mentioned as something necessary for individuals and societies to develop. University students are assumed to create capacities for theoretical and meta-cognitive thought during their university period. Racial knowledge will be more complex during youth due to the increased cognitive thought ability (Diane, Jon, & Juan, 2016). This lead to second objective which is to investigate the Malaysian Chinese university students' moral development toward racial tolerance influenced by university experience. In today's world, tolerance as a moral and spiritual category represents the most urgent historical, socio-cultural, and educational needs, as well as the degree of satisfaction that depends on humanity's present and future (Valeryevna & Fedorovna, 2016). In these circumstances, it is very important to investigate the formation of students' tolerance in present settings.

2.0 LITERATURE REVIEW

Phenomena of Tolerance

There are a lot of description about the term "tolerance". Some describe tolerance as the inverse of discrimination, while some define tolerance as a moral characteristic that belongs in the moral sphere. According to Rivka (2000), tolerance is not simply the absence of prejudice but is a separate construct worth serious consideration. Adopting one definition over another has consequences for how tolerance is operationalized and the selection of research questions. There are three phenomena of tolerance being discussed in previous literature. The first and most common phenomena of tolerance is where tolerance dependent on prejudice. It involves conscious rejection of prejudicial attitudes and reactions. The existence of tolerance depends on the existence of prejudice. In other words, a person's negative stereotype is recognized, judged based on empirical knowledge or value system, and rejected (Julie, Rivka, & Ann, 2013). The most common approach that people used to define tolerance emphasizes forbearance. According to this approach, tolerance implies "forbearance" or the readiness "to put up with" with one dislike. Thus, it means that one first needs to experience disapproval or dislike to tolerate someone or something. Allowing the expression of objectionable ideas, or more specifically, extending social rights related to political participation and freedom of speech to groups one dislikes or disagrees with, is what it means to "put up with" in political terms (Mikael, Maureen, Andrea, & Filip, 2020). This conceptualization is based on the "objection criteria," which states that one cannot tolerate ideas that one approves. Moreover, Rivka (2000) found that instead of prejudice toward others, the right to freedom of speech emerged as the most significant barrier to tolerance. Although personal experiences and misunderstanding of the right to free speech appeared to support intolerance, tolerance was vigorously defended as well.

The second phenomena are where tolerance is distinct from prejudice. The United Nations Educational, Scientific and Cultural Organization (UNESCO) endorses this approach, which defines tolerance as respect, acceptance, and appreciation for the rich diversity of our world's cultures, forms of expression, and ways of being human. Tolerance is the ability to find peace in the midst of conflict (Mikael et al., 2020). Tolerance can also be defined as "a fair and objective attitude toward those whose practices, race, religion, nationality etc., differ from one's own" (Julie et al., 2013). This "freedom of bigotry" is manifested by the absence of prejudice when it comes to racial and ethnic differences. As a result, this approach defines tolerance as the absence of prejudice toward those "whose practices, race, religion,

nationality, or other characteristics differ from one's own." Unlike the previous approach, tolerance in this approach does not begin with the dislike of groups and instead focuses on the subjective reactions of an individual to diverse values, behaviors, and lifestyles. Thus, Allport gave two examples of tolerance, one where the subject dislikes what he tolerates and one where he likes what he tolerates. They can identify between those who accept only one "objectionable" group and those who tolerate multiple or all by analyzing a variety of groups. This definition focuses on the absence of prejudice and goes beyond simply enduring or refraining from interfering. This not only shows that dislike is not a requirement for tolerance, but also that it is optional. It is possible to tolerate things that we like if we think in this perspective. Tolerance may therefore be defined as the ability to bear something or to show enthusiasm for something. However, these prior researches do not assess attitudes related to the presence of diversity or analyze "orientation toward groups outside of one's own" since prejudice is included in the evaluation of tolerance. Thus, we argue that it is not consistent with what the definition means. They evaluate respondents' tendency to accept specific groups as friendly, which reflects how they feel about these groups rather than diversity in general. This does not differ when attitudes toward a variety of groups are evaluated. These indices can only tell us how prejudiced someone is. To put it another way, if someone is prejudiced against one, two, or many out-groups, he is always prejudiced against a subset of them.

While the third phenomena are where tolerance is understood as orientation toward difference with the meaning of complete acceptance of others while acknowledging differences between the "others" and oneself. It entails a conscious rejection of prejudiced beliefs and behaviour, as well as valuing others regardless of their race or creed. It is an idea that should be espoused in every multicultural society - to celebrate differences. Mikael, Maureen, Andrea, and Filip (2019) advance a new concept of tolerance and define it as a value orientation toward difference. Tolerance is only required when there is a difference or diversity, because it is only when we are confronted with diversity that our acceptance of others is truly put to the test (Rivka, 2000). However, previous approaches only measure a willingness to accept specific groups and do not analyze attitudes about the existence of diversity in general (Mikael et al., 2020). Walzers's (1997) understanding of tolerance is an attitude or state of mind. Forst (2013) identified four different perspectives on diversity tolerance, each of which may exist in society at the same time. The first and second are linked because they both define tolerance as a permissive relationship between groups. It is called acceptance of differences where both groups accept other groups' existence and do not interfere with each other or their practices. The only difference is that the first conception focuses on the group have unequal power and the majority is the one to tolerate the minority group, while the second conception focuses on a group that have roughly equal power. The third is respect for differences, in which individuals show respect for diversity by viewing disparate groups as morally and politically equal, even if their beliefs, practices, and lifestyles are fundamentally different. Fourth is the appreciation of difference, in which an individual regards others' beliefs, practices, or lifestyles as valuable and worthy of ethical esteem despite the fact that they differ from one's own. These different aspects of tolerance can be as points on a continuum or as hierarchical. This method focuses on attitudes toward diversity in general rather than specific social groups, behaviours, or values. Dunn et al. (2009) define tolerance as a "non-negative general orientation toward groups outside of one's own. Although many researchers adopted this conceptualization of tolerance, Rivka (2000) argued that this approach is not suitable to define tolerance because the absence of discrimination does not imply tolerance. Mikael's (2020) research, for example, shows that only an appreciation of difference has the potential to reduce prejudice, but the relationship between tolerance and other individual or societal outcomes is still unknown. Furthermore, studying this approach alone is not appropriate for studying tolerance among young children because they may not have noticed racial or cultural differences when making judgments. It's difficult to argue that the absence of discrimination demonstrates tolerance if the person didn't recognise the differences in the first place (Julie et al., 2013).

Racial Tolerance in Educational Context

Education has long been seen as one of the most significant platforms for the promotion of racial tolerance and national unity. There have been few conceptually rich studies proved that education institution would be the excellent platform to ensure the value of tolerance was observed in the plural society. Thirty-three studies were synthesized to explore racial tolerance in education context. Five overarching meta-themes emerged across studies focused on a range of factors lead to development and barrier to racial tolerance. First, institutions must focus on the kind of information that are most likely to foster tolerance since they have a significant role to play in this endeavor. Research found that structural diversity in an institution has a direct positive effect on students' interracial friendship regardless of students' racial backgrounds. Several studies developed this concept and suggested that administrators at institutions must start explicitly stating that "racist behaviors" will not be permitted and that offences will be dealt with harshly if they are sincerely worried about the existence of minorities among their student bodies (Farrell & Jones, 1988). One of the biggest problems that institutions confront today is cultivating a sensitive faculty and encouraging civility and tolerance among students (Hurtado, 1994). When institutions are poorly managed and structured, the people are divided, which might have severe effects on the entire country. In this instance, microaggression is an element of the unrest that will keep separating the young people who will eventually rule the nation (Noormaizatul Akmar, Noraini, Nurul Husna, & Radzuwan, 2020). An environment where people are discriminated against or singled out due to their skin colour or ethnicity can lead to a variety of issues, including poor academic performance, low self-esteem, and even school dropouts.

Second, research show that educators were sensitive to cultural differences and believed that professional development for new teachers would contribute to the development of more tolerant students. Teachers may promote tolerance and acceptance by teaching nonviolent conflict resolution explicitly, which is based on respect for the other person's needs, fears, wants, and worries, which are recognized as being as genuine as your own. One issue should be concerned is that teachers' inaction in confronting racist views contributed to the institutional and systemic persistence of the intolerance issue. Each story's involvement of faculty members significantly increased its influence on the audience and gave the stereotype-using behaviour of the students some legitimacy.

Third, the main goal of education in multiethnic cultures is to foster strong interethnic relationships amongst pupils from different ethnic origins. Numerous ethnic groups are further separated, as seen by the friendship patterns of schoolchildren, which are predominantly biased in favor of the in-group (Ganaprakasam, 2018). This is a serious issue should be concerned because it has also been discovered that intergroup friendships and interaction are associated to the acquisition of more tolerant viewpoints, such as multiculturalism. Cross-ethnic friendships during childhood and adolescence may result in the development of crucial perspective-taking and empathic skills that are transformed into a more open and understanding view in the long run because contact effects do not only concern attitudes and behaviors towards the target outgroup but frequently generalize to attitudes towards other groups (even non-contacted) in different contexts (Titzmann & Jugert, 2019). Fourth, most research suggest that instruction practices are the best way to instill tolerance values. Effective teaching such as cooperative learning and active learning is the sort of education that fosters multicultural awareness, racial toleration, and maximal learning (Egginton, 1980).

Tolerance is also promoted via curricular models like citizenship education and religion education.

Further research revealed that teaching history in schools is viewed as the key building block for realizing racial tolerance as well as for maintaining the harmony and racial integration of multi-racial society (Ahmada, Rahim, Seman, & Salleh, 2010). Fifth, educational setting where education is a right which must be made available to all on equal terms. School should be funded adequately, fairly, and integrated racially and socioeconomically (J. Hall, 2013). The provision of more scholarships and the creation of an academic environment that encourages free speech were among the recommendations made by young people for improving the educational system. This is because comfortable with the surrounding environment could influence their level of racial tolerance and this was reflected in their willingness to interact and collaborate with students from different ethnic communities.

3.0 METHODOLOGY

This research implements qualitative research method which focuses on discovering and understanding participants' experiences, perspectives, and thoughts. This paradigm was selected based on the natural and factual phenomenon that showed the students' racial tolerance pattern should be investigated, with particular to explore their idea of racial tolerance through university experiences and moral development to racial tolerance. Qualitative research method is used in this study because the research about racial tolerance is lacking and most of the research done is according to overseas context where the data and theory is not suitable to be used in Malaysia context. University racial composition was required to reflect the racial structure of the larger society. The role of public universities in redressing divisive ethnic disparities through capacity building is then entrusted to them. University serves as an agent of social mobilization and a tool in creating "forced interaction" among races. It causes the public university to have a more balanced population of multiple races than a private university. Thus, university students from a public university in peninsular Malaysia are taken as the research population. This research uses purposive sampling to select a sample for the primary data collection. The sample selected will be Malaysian Chinese university students from public university in Malaysia. In order to answer the objectives of the research, ten participants will be selected to undergo a semi-structured interview for this research until the data is saturated.

Qualitative instrument is being used in this research. This research will focus on only one qualitative instrument, which is the interview method. The interview may comprise a few key questions to define the areas to be explored and allow the interviewer or interviewee to dig an idea or response in more detail (Margaret & Bradley, 2009). As a result, open questions were used in this study to enable respondents to share their opinions in a more open dialogue. This research are more to asking the participants' lived experiences on sensitive issue with respect to racial tolerance. This study should be conducted in an informal, conversational way so that the student participants feels as at ease as feasible. The main goal is to get participants to create their own thoughts and replies by sharing their personal experiences. The researcher will then try to understand their development to racial tolerance through university experiences through the answer and elaboration provided. Primary data is collected through interviewing. In this research, the researcher writes down ideas while collecting or analysing data through the use of memo writing which help in sketching out the whole process. This research uses manual analysis to analyse data which require researcher to review, code, and interpret data. Data analysis can be structured to develop open categories, selecting one open and then subcategories for further explanation. The act of discovering and categorising themes within the data that match to the research questions is known as coding. While themes are recurring

patterns or concepts that occur across the data. The fundamental goal of a qualitative analysis is to come up with themes that will help to answer the research questions. The next step is to convey the findings after coming up with themes. Because the presentation of results can affect their trustworthiness, each theme should be presented with its own meaning and support from the data.

4.0 EXPECTED RESULTS

This research is expected to produce a model which show the racial tolerance among Malaysian Chinese university students as shown in the figure below.

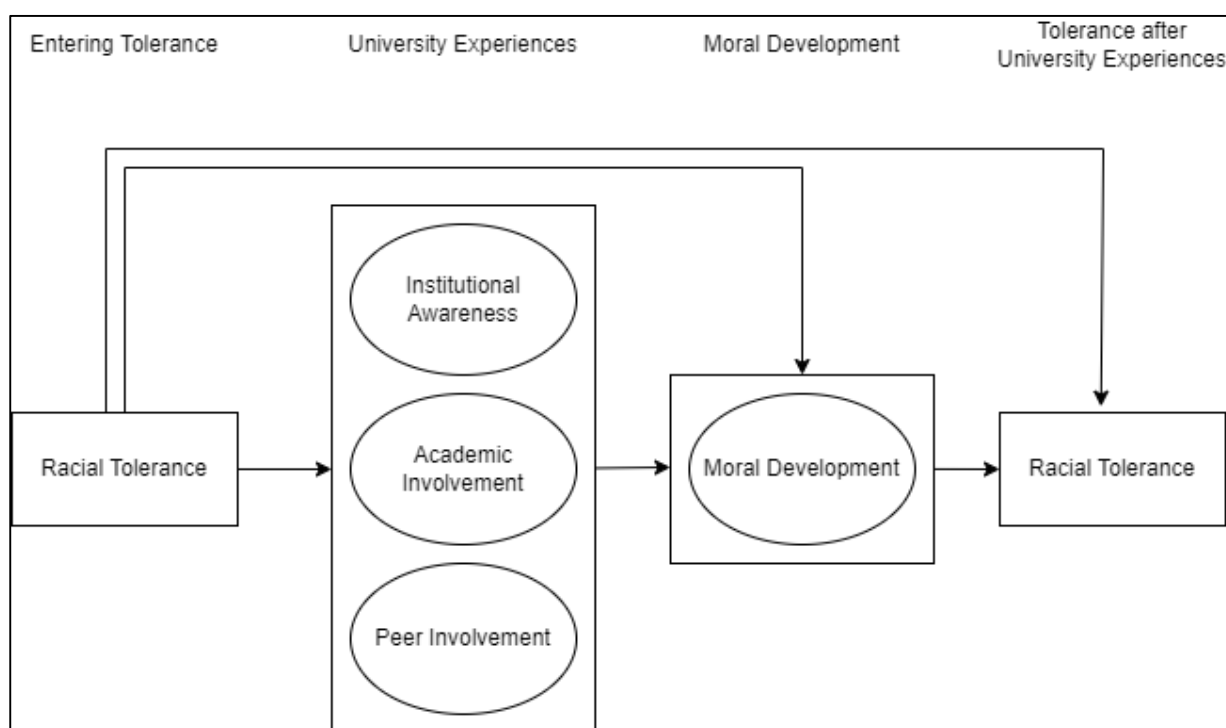


Figure 1 Expected result

The first objective is to investigate influence of Malaysian Chinese University students' university experiences on the development of racial tolerance. Thus the result should answer what sector in university influence the development of racial tolerance and explain the role of each sector. Besides, the racial tolerance issue that involve in each sector, and also students' concern on each sector should be answered too. While the second objective is to investigate the Malaysian Chinese university students moral development toward racial tolerance influenced by university experience. Thus the data gathered should show the beliefs and justifications of students for tolerance judgements.

5.0 CONCLUSION

Racial tolerance is a dynamic process which is much dependent on the socialization involving individuals and their surroundings. The presence of different groups at educational institutional is supposed to develop a sense of tolerance during the interaction process. Besides, racial tolerance is correlated with high level of reasoning and moral understanding of an individual. Students enter university with a composite self- comprised of moral development and life

experiences. Thus, students' eagerness to embrace the university experience and engage meaningfully in university life leads to enhanced moral developments, which has an influence on tolerance levels.

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The Chinese Children's Sense of National Identity

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Abstract

This study examined the development of national identity in Chinese children. It explored the developmental characteristics of children's national cognition (maps, national flag, and Chinese people) and children's attitudes toward the Chinese group and measured the relationship between national emotions and children's age, gender, and place of school. This study also explored the correlation between children's evaluations of being Chinese and children's willingness to be Chinese. The study found: 1) "Gender" was the most highly valued identity. However, children's self-identity changed with age, and the identity of the country of residence was increasingly valued by children. 2) There was a significant difference between age and children's cognition of the nation, however, there was no significant difference between gender, school and children's cognition of the nation. 3) The important sources in the development of children's national identity are family (parents, grandparents, and siblings), school and peers. It shows that interpersonal communication is an important way of acquiring national knowledge for Hainan children. 4) There was a significant correlation between children's evaluation of Chinese people and preference for being Chinese.

Keywords: National Identity, Chinese Children, Self-Identity, National Identity Cognition, National Identity Affection

Abstrak

Kajian ini mengkaji perkembangan identiti nasional dalam kalangan kanak-kanak Cina. Ia meneroka ciri-ciri perkembangan kognisi kebangsaan kanak-kanak (peta, bendera kebangsaan, dan orang Cina) dan sikap kanak-kanak terhadap kumpulan Cina dan mengukur hubungan antara emosi kebangsaan dan umur, jantina, dan tempat sekolah kanak-kanak. Kajian ini juga meneroka perkaitan antara penilaian kanak-kanak sebagai orang Cina dan kesediaan kanak-kanak untuk menjadi Cina. Kajian mendapati: 1) "Jantina" adalah identiti yang paling dihargai. Namun, identiti diri kanak-kanak berubah mengikut usia, dan identiti negara tempat tinggal semakin dihargai oleh kanak-kanak. 2) Terdapat perbezaan yang signifikan antara umur dan kognisi kanak-kanak tentang negara, namun, tidak terdapat perbezaan yang signifikan antara jantina, sekolah dan kognisi kanak-kanak tentang negara. 3) Sumber penting dalam pembangunan jati diri kebangsaan kanak-kanak ialah keluarga (ibu bapa, datuk nenek, dan adik-beradik), sekolah dan rakan sebaya. Ia menunjukkan bahawa komunikasi interpersonal adalah cara penting untuk memperoleh pengetahuan kebangsaan untuk kanak-kanak Hainan. 4) Terdapat korelasi yang signifikan antara penilaian kanak-kanak terhadap orang Cina dan keutamaan untuk menjadi orang Cina.

Kata kunci: Identiti Kebangsaan, Kanak-kanak China, Identiti Diri, Kognisi Identiti Kebangsaan, Kasih Sayang Identiti Kebangsaan

1.0 Introduction

The increasing number of talented Chinese university students leaving China to work, live and settle in other countries has further raised the concern among scholars that Chinese youth may not be so attached to China. According to Du (2019), in 2019, only 2.7% of young people in Hong Kong identify as "Chinese". On the contrary, the identity of "Hongkongers" is as high as 75%. In recent years, Hong Kong people's identity as Hongkongers has been growing (Veg, 2017; Carroll, 2022). Li (2002) found that 90% of Chinese youth would like to be an American

permanent resident. Thus, the issue of Chinese national identity has become a concern for scholars. This study focuses on an initial exploratory investigation of the development of national identity among 9-13 year olds in China. The objectives of the study are as follows: 1) to explore the developmental characteristics of children's national cognition (maps, national flag, Chinese people) and children's attitudes toward the Chinese group. 2) measured the relationship between national emotions and children's age, gender, and places of school. 3) to explore the correlation between children's evaluations of being Chinese and children's willingness to be Chinese.

2.0 Literature Review

One of the focuses of this study remained the exploration of the developmental characteristics of children's national cognition (maps, national flag, Chinese people) and children's attitudes toward the Chinese group. Characteristic symbols of the country (map, flag, national anthem, historical figures, and costumes) carry the cultural identity of the country, which are historical traditions, customs, national spirit, and collective memories shared by members of a country, thus allowing nationals to form a sense of belonging to the country. Barrett (2000) identifies important characteristic symbols that are distinctive to the country (including the name of the country, representative buildings, the national flag, traditional festivals, customs, traditional food, historical time and historical figures as the cognitive aspects of national identity. He argues that an examination of children's sense of national identity needs to begin with an examination of how children acquire knowledge of national iconicity. Children begin to acquire knowledge of their country at the age of 5 (Barrett, 2005), such as recognizing nationality and identifying the flag (Weinstein, 1957), but at the age of 5-6 years old children are only able to recognize nationally iconic objects and are not able to integrate the symbolism with the physical object, but at the age of 8 children begin to grasp the symbolism of the national flag. Barrett (2005) also found that in mid-childhood and early adolescence begin to acquire more geographic knowledge about their country. During childhood, children's national identity is based on their national cognitions (Weinstein, 1957; Stillwell & Spencer, 1973). However, Bouchier, Barrett & Lyons (2002) did not find a correlation between children's knowledge of the country and children's national affect. There are also different perspectives on the development of children's national cognition, with Piaget's theory of cognitive development suggesting that the development of children's national cognition and conceptualization of nations depends on the different stages of children's cognitive development (Piaget and Weil, 1951; Kohlberg, 1975, 1976; Hussak & Cimpian, 2019). However, some scholars have also found that children's awareness of the flag, nationality, national symbols and the symbolic meanings assigned to them are related to the cultural context of the society in which they live (DeJesus, Hwang, Dautel & Kinzler, 2018) and are influenced by formal education, mass communication (Barrett, 2005).

The samples of a large number of studies on children's national cognition come mainly from Europe and the United States, but scholars have found that the development of children's national cognition has a relationship with the society and culture in which the children live (Barrett, 2005), so the exploration of the formation of children's concepts of national symbols and symbols in the context of children living in the Chinese culture is an important supplement to the study of children's national identity. Meanwhile, research on children's perceptions of national symbols (national flag, national anthem, and historical figures) has focused on the 1950s to 1990s. With the development of the times, especially the development of formal education mode, online media, video games and instant videos, whether children's cognition of national symbols undergoes some changes or not, which is something that needs to be studied in the new context.

This study also measured the relationship between national emotions and children's age, gender, and place of school. This study also explores the correlation between children's evaluations of being Chinese and children's willingness to be Chinese. Barrett (2000) argues that the affections of national identity are the feelings, emotions, and evaluations that make up national identity.

National identity is an important element in highlighting national affection. National identity, gender, age, occupation and other identities also present different levels of importance at different stages. Barrett (2000) and Song (2007) found that in childhood, children place significantly more importance on national identity as they grow older. Social identity theory (SIT) predicts that group members are biased towards the in-group. Zuo, Chen & Zhou (2003) agree that children between the ages of 5-12 have positive impressions of Chinese people, but positive evaluations began to decline with age. Bennett, Lyons, Sani & Barrett (1998) find that children at the age of 5-6 years would have a preferential evaluation; Barrett (2000, 2002) find that British Children's evaluations of Britishness at ages 5-11 declined with age. Some studies have also found that children's positive evaluations of their country appear around the age of 9 (Karagezov, 2001) (cited in Barrett, 2005) or 10 (Rutland, 1999). However, it has also been found that children may not positively evaluate their own nation if the nation they belong to is in a negative evaluation (Tajfel, Jahoda, Nemeth, Rim & Johnson, 1972). Reizábal, Valencia & Barrett (2004) argues that Basque children's attitudes toward external groups do not show age-related changes. It can be seen that children's evaluations of nationals do not fully confirm the social identity theory's prediction of in-group favoritism. From the above findings, it can be observed that research findings on the relationship between children's age and national identity feelings are still scattered and there is a need to explore the age characteristics of children's national identity development in different cultural contexts.

Barrett (1996) argued that boys' geographic knowledge is richer and more accurate than girls'. Phinney (1990) finds that girls identify more positively with their nation than boys. However, more scholars have found no significant gender differences in national knowledge and national feelings (Chen, 2004; Song, 2007; Qin, Gao & Zuo, 2009; Zuo, Chen & Zhou, 2003; Idris, Hassan, Ya'acob, Gill & Awal, 2012). The relationship between gender and national identity presents different conclusions, but among them it can also be found that the conclusions of studies before the 1990s showed that gender is related to national identity, but after the 21st century, more studies show that gender is not related to national identity, and that boys and girls do not show significant differences in national perceptions and national emotions.

Some studies have found that place of living has an effect on children's national identity (Barrett & Short, 1992; Barrett, 2000, 2001). Riazanova, Sergienko, Grenkova-Dikevitch, Gorodetschnaia, & Barrett (2001) argue that children living in Moscow identify more strongly with their country. Barrett (2001) measure that children living in London recognize English identity more. Wu & Shi (2019) also argue that urban children have a stronger sense of national identity than their rural counterparts. The above findings show that there is a capital or city influence on national identity. However, some scholars have also found that students living in the countryside have a higher sense of national identity than those living in the city (Zhen, 2012), or that there is no correlation between children's national identity and where they live (Du, 2014).

Children and adolescents have a strong sense of national identity and show a high sense of national attachment (Che, 2009; Chen, 2004; Qin & Zuo, 2007). However, the sense of national attachment among adolescents aged 13-16 continued to decline with age (Liu, 2012). These results suggest that in early childhood, love of the motherland is an instinct for children, an emotion from the blood. National attachment is an intrinsic relationship between an individual and a group. As they grow older, middle school students' thinking develops more maturely and their cognitive level increases. They acquire richer information about their own and other

countries, their views become more diverse, and their national identity begins to diverge. By the age of 20, after college graduation, national identity begins to rise. Middle and late adolescence, especially the college years, is a critical period for the development of national identity (Phinney, 1996; Qin, Gao, & Zuo, 2009). However, Chen (2004) find that in terms of national attachment sentiments, positive sentiments were highest among children at age 11, began to decline among adolescents at age 14, and remained unchanged between the ages of 14 and 20. Chen (2004) argued that the period before the age of 14 is the critical time for children and adolescents to develop a positive affective appraisal of the country, and that this affective appraisal remains unchanged after the age of 14. This finding is inconsistent with Phinney (1996) and Qin, Gao & Zuo (2009).

In conclusion, there is a need to continue to study the age characteristics of national identity affective development in children and adolescents. Meanwhile, the samples of the above studies are mostly from Europe and America. Only a few papers have empirically studied the national identity development of Chinese children and adolescents. The samples of these studies mainly focus on middle school and college students aged 11-20, while fewer papers have conducted empirical research on the national identity development of Chinese children and adolescents.

Despite the development of children's national identity (Barrett, Del Valle, Lyons, Vila, Monreal, & Perera, 1999; Barrett, 2000; Reizábal, Valencia & Barrett, 2004; Axia, Bremner, Deluca & Andreasen, 1998; Koh, 2010; Waldron, & Pike, 2006) have also been studied in different regions around the world. Scholars have studied the characteristics of children's national identity development in terms of age (Jahoda 1962; Barrett, 1996), gender (Barrett, 1996), and so on.

But, research on children's national identity has mainly focused on Europe and the Americas. Moscovici (1984) believed that social representations of the world may be different in different regions. China's history and culture are quite different from other countries, and there are also differences in political systems. We need to study the development and characteristics of Chinese children's national identity, and find a national identity education model (e.g. the arrangement of national knowledge in teaching materials, the sense of national identity embedded in the implicit and explicit curriculum, the evaluation of the national identity education, etc.) suitable for Chinese students' development. To study the factors influencing and the developmental mechanisms of Chinese students' development of national identity can rich the theory and applying research in social psychology.

This article focuses attention on Chinese children's national identity development. Scholars have argued that children's cognitions and affections about their nation influence their national attitudes and values in adulthood. This study has the following research objectives: a. To determine the relationship between the perception of national symbols (maps, flags, and Chinese ethnic characteristics) and children's age, gender, and place of school, b. To determine the relationship between national affection and children's age, gender, and place of school, c. To measure the sources of children's national knowledge, and d. To measure the correlation between children's evaluations of being Chinese and children's willingness to be Chinese.

3.0 Method

Participants

The participating students were 425 Chinese children aged 9-13 years old. Twenty-five students were excluded from the sample because they did not complete the questionnaire, so the final number of eligible questionnaires was 400. The gender distribution was more or less even, with 46% males and 54% females. These students were children attending public elementary schools in grades four through six in several areas of Haikou City, Chengmai County, Danzhou

County, and Lingao County in Hainan Province. The schools in Haikou City were urban schools, and the schools in Danzhou County, Chengmai County and Lingao County were town-level elementary school, and the sample included children from a variety of socio-economic backgrounds.

Materials and procedure

The researcher referred to the questionnaires of related scholars and developed the National Identity Questionnaire for Primary School Children (9 - 13 years old) in Hainan Province as the instrument of this study. The questionnaire is divided into five parts. The first part is personal information. The second part is personal categorization attributes. The third part is the way of children's national knowledge acquisition. The fourth part is the National Identity Questionnaire, which includes two dimensions: the national cognitive dimension and the national affective dimension. The national cognitive dimension included national symbols cognition (national name, map), Chinese physical characteristics cognition. The questionnaire on national cognition was presented in a multiple-choice format, and the main descriptive statistics were done in the analysis. The national affective dimension included recognition of national symbols, importance of national identity, national pride and national attachment. The items used to measure children's national affection were mainly adapted from Song (2007) National Identity for Children of Taiwan, China. The national identity questionnaire used a five-point scale to indicate the extent to which they agreed or disagreed with the statements in the question items. The fifth section was the evaluation of Chinese people, which was measured using a personality trait popularity rating measure. The words about Chinese personality traits were based on Song's (2007) adjectives for evaluating measures of Taiwanese Chinese. There cannot be too many adjectives used for measurement, and a total of 13 adjectives were used in this study, such as "cunning," "arrogant," "kind," "peace-loving" and other words. Six negative adjectives and seven positive adjectives were used in the vocabulary to assess the degree of popularity of Chinese traits on a five-point scale ranging from children's perceptions of "almost no one" to "almost everyone's" perceptions of the Chinese character. The Cronbach Alpha coefficient for the National Identity Affective Scale in this study was 0.767. The Cronbach Alpha coefficient for the Chinese Image Evaluation Scale was 0.855.

4.0 Data analysis and results

Children's Self-Identity Categorization

Children between the ages of 9 and 13 are basically able to determine their gender identity, residence identity, citizenship identity and age identity.

Table1 Importance of Children's Identity Rating Scale

Self-categorization attributes	Grade	M	M
Gender	Grade 4 (8-9years)	2.05	2.14
	Grade 5 (10-11years)	2.21	
	Grade 6 (12-13years)	2.15	
The country of residence	Grade 4 (8-9years)	2.40	2.38

age	Grade 5 (10-11years)	2.40	
	Grade 6 (12-13years)	2.32	
	Grade 4 (8-9years)	2.55	2.58
	Grade 5 (10-11years)	2.50	
	Grade 6 (12-13years)	2.71	
	The place of residence	Grade 4 (8-9years)	2.99
Grade 5 (10-11years)		2.89	
Grade 6 (12-13years)		2.82	

In Table 1, the lower the overall average value, the higher the importance of this identity, with gender having the lowest average value of 2.14, followed by country of residence at 2.38, then age at 2.58, and finally place of residence at 2.90. However, cross tabular chi-square test found $P=0.839>0.05$ indicating that there is no significant difference between boys and girls in terms of identity perception. Therefore, the analysis of the above table shows that:

1) In Hainan Province, regardless of the age of the students, all of them consider "gender" as their most important identity, which is the same as the results of the studies conducted by Song (2007) and Barrett & Whennell (1998).

2) The study also found that children's self-identity changed with age, especially in their self-categorization of "country of residence". The importance of the "Chinese" identity was significantly higher for children in the sixth grade than for other identities. This is consistent with findings in other countries (Barrett, Wilson & Lyons, 1999; Barrett & Whennell, 1998). This result is cross-national in nature.

3) It also supports Turner's self-categorization hypothesis (Turner, Hogg, Oakes, Reicher & Wetherell, 1987).

About Chinese identity

Children's national identity is manifested in their identification as "Chinese", and as they grow older, their identification as "Chinese" gradually takes precedence over other identities, such as gender, age and place of residence. In order to further understand children's acceptance of living in China, being Chinese and their fondness for Chinese identity, this study designed a contextual multiple-choice question, "If I had a choice, I would like to be a () person", and according to the statistics, the results are shown in the table below.

Table2 Statistical description of Chinese identity attribution

Statistical description of Chinese identity attribution			
Items	N	%	Ranking
American	1	0.3	4
Chinese	386	96.5	1
Korean	6	1.5	2
Japanese	5	1.3	3
British	1	0.3	4

People from other countries	1	0.3	4
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The study found that 96.5% of the children indicated that they would like to be "Chinese", indicating that children in Hainan Province recognize life in China. However, Che (2019) found that although children in Shanghai valued their Chinese identity, only 69.6% chose to become Chinese, 13.1% chose to become American, and 7.7% chose to become Japanese. Compared with the present study, children's willingness to become Chinese is relatively low. What are the reasons for this? Hainan is not an economically developed city in China. Children have fewer opportunities to go abroad and do not know much about other countries, so most of them choose to become Chinese. Shanghai, on the other hand, is an economically developed area in China, and a large number of children have the opportunity to travel abroad, study abroad for a short time or for a long time. Their knowledge and understanding of other countries is richer and their willingness to go abroad is stronger. The more information children acquire about foreign national groups, the more children develop increasingly differentiated conceptualizations of nationality (Barrett, M., & Short, J., 1992). Lambert & Klineberg (1967) found that children's conceptual understanding of foreigners goes beyond the acquisition of factual knowledge and information, but also included strong feelings and evaluations (as cited in Barrett, M., & Short, J., 1992). These observations may explain the large number of children in Shanghai who are willing to hold another nationality. Therefore, further research is needed to determine whether the economic status of the place of residence and children's knowledge of other countries have an influence on children's national identity.

The Channels of children's national knowledge

In the questionnaire, the researcher asked the children to fill in five items out of 14 options that he considered to be the most important sources of knowledge about the country. The higher the percentage of people who filled in the questionnaire, the more often the item was selected and the higher the level of importance of the item.

The main channels through which children acquire national knowledge are family (59.1%), school (19.9%) and peers (19.6%). Channels such as the computer network and television news are not important factors influencing the formation of national knowledge. Although the use of computers has begun to spread and television has become a necessary appliance in every home, they have not become an important channel for children in Hainan to acquire national knowledge, and the reasons for this need to be further studied. School education (19.9%), although ranking in the top three, is far below the influence of family education (59.1%) on children.

The Cognition of National Identity

National Knowledge

84.5% of the children correctly chose the name of the country as the People's Republic of China. 15.5% of the children were not sure of the correct name of the country. More than 90% of the elementary school children were able to correctly select the map of the country. However, there were still 10% of the students who could not correctly identify the map of the country. Children in grades 4 to 6 are in the age group of 9-13 years old and this study shows that most of the children are able to perceive the basic country knowledge correctly in the middle childhood stage.

Perception of Chinese Characteristics

The group of questions on national symbols and physical characteristics were multiple choice questions, not Likert-type scales, so descriptive statistics were done.

The physical characteristics of "Chinese" in the minds of 9-13 year olds were: yellow race (71.8%) (percentages indicate the number of people who reported this compared to the total number of subjects, hereafter), black hair (96.5%), and black eyes (87%). With regard to Chinese skin color, 74.1% of Chinese urban children (Zuo, Chen & Zhou, 2003), 80.6% of children (Chen, Zuo, & Zhou, 2004) and 72.8% of children (Song, 2007) can correctly identify the characteristics of Chinese skin color. The present study is similar to the findings of the above studies, indicating that approximately more than 70% of children at the elementary school level are aware of their skin color.

Chinese hair color is the most accessible Chinese physical characteristic to children. Numerous studies have shown that more than 95% of children can correctly identify Chinese hair characteristics (Chen, Zuo & Zhou, 2004; Zuo, Chen & Zhou, 2005; Song, 2007).

For eye color discrimination results, this study found that 87% of the children could correctly identify it. Song (2007) concluded 82.1% children could identify the eye color in Taiwan, China. Zuo, Chen, & Zhou (2005) found that 71.3% of urban children could correctly recognize the eye color of Chinese people. Chen, Zuo, & Zhou (2004) found that 74% of urban children could correctly perceive Chinese eye color. The findings of this study are slightly higher than other studies. However, there were still close to 20% of children who could not determine the eye color of people in their own country, probably because eye color is not as easy to observe as hair color. Overall, the children between the ages of 9-13 years already have the knowledge of eye color of the people of their own country.

Regarding the highly recognizable physical features such as Chinese ethnic color, hair color and eye color, more than 80% of the students could correctly perceive them. The children in this study were 9-13 years old and could make clear judgments about the physical appearance of their own country's population, which is similar to the results of studies in other countries (Barrett & Short, 1992). However, it is worth noting that 28.2% of the primary school students still selected the wrong ethnic color for Chinese people, indicating that the problem of identifying ethnic skin color is not a simple task for primary school students, and the need for presenting this kind of teaching materials in the curriculum needs to be further explored and discussed.

The Affection of National Identity

In the emotional scale of national identity, the overall mean is 3.92, which is greater than 3, indicating that children's overall affective attitudes are positive. In terms of different dimensions, the mean of national pride was $M=4.51$, the mean of importance of Chinese identity was $M=4.05$, and the mean of national attachment was $M=4.07$. This study shows that children aged 9-13 years old have a significant preference for their own national group. It also partially confirms the findings of Che (2019) on children in Shanghai that children have a strong sense of pride and identity towards their own country.

However, in the survey of country attachment, the results of Hainan's survey showed a large gap with those of Shanghai, an economically developed region. In this study, when children were asked if they had the opportunity to settle in a foreign country, 11.6% of the students chose "willing" or "very willing," and 76% of the children chose "unwilling" and "very unwilling".

Che (2019) found that if given the opportunity to live abroad, 44.5% of Shanghai children would like to live in a developed country outside of China, while 55.5% chose to live in China. Whether or not to migrate is an important aspect of the national attachment survey. Whether regional economic differences influence differences in children's child attachment feelings requires research on the national identity of children across economic regions. At present, with the development of the economy in China, the gap between economically developed regions and economically underdeveloped regions and backward regions is getting bigger. Children's feelings of attachment and loyalty to the nation in different economically developed regions is a subject well worth studying.

Relationship between Age and Children's National Knowledge

This study found a significant difference between age and children's national knowledge acquisition.

Table 3 percentage homogeneity test of national cognitive dimensions in different grades

items	grades			X ²	
	4 grade	5 grade	6 grade		
Country name	N	131	152	117	33.284
	%	32.75%	38%	29.25%	
Country map	N	131	152	117	23.787
	%	32.75%	38%	29.25%	
Chinese eye colors	N	131	152	117	23.542
	%	32.75%	38%	29.25%	

**P<0.01

There was a significant difference ($p < 0.01$) in the cognition of country names, country maps, and Chinese eye colors among children in different grades. The chi-square test was next performed and revealed that the cognitive levels of fourth grade children were lower than those of fifth and sixth grade children in the cognition of country names, country maps, and Chinese eye colors. Probably because fifth and sixth grade children are older and have elevated cognitive levels, which is consistent with the predictions of Piaget's theory of children's cognitive development. However, the cognitive level of fifth-grade children was higher than the cognitive level of sixth-grade children, which may be explained by the fact that the fifth-grade Morality and Law textbook was set with more knowledge about the People's Republic of China and the Chinese ethnicity. Possibly, the curriculum content supports the higher scores obtained by the fifth-grade students. This may support Social Representation Theory (SRT), where members' cultural and historical backgrounds influence members' community perceptions. Children in the sixth grade face competitive examinations for promotion to junior high school, and Morality and the Law is not an examination subject. Whether the subject knowledge of Morality and the Law is negatively affected by competitive examinations deserves further study.

The Relationship between Age and Children's National Affections

There was no significant relationship between age and children's national sentiments. Children of different grades have a strong sense of national attachment, identity belonging and pride, showing no age differences. In this study, the proportion of children who answered "Strongly Agree" and "Agree" to the item "When I see the national flag and hear the national anthem, I

will stand in awe" reached 96.1%, showing that children in Hainan Province have a strong sense of pride in the national flag and the national anthem. This shows that children in Hainan Province have a very strong sense of pride in the national flag and national anthem. However, analyzing the data from other scholars' studies together, it can be found that the use of national symbols to stimulate children's national emotions is not a completely positive relationship.

Zheng (2012) found that 79.9% of middle school students chose to feel "immensely proud and honored" when the national anthem of the People's Republic of China was played, and 14.7% students feel "indescribable", while 5.4% feel "very calm inside".

Comparing the two data, it is found that national symbols such as the national flag and the national anthem can stimulate elementary school students' sense of national pride. However, symbols were less likely to inspire national pride in middle school students than in elementary school students, and Barrett & Lyons (2001) found that national pride is strongest in childhood and decreases in young adulthood. The age-specific development of national pride is characterized by cognitive changes in children. Yu (1984) found that an increase in the number of school assemblies attended by secondary school students was detrimental to the development of their national identity emotions, thus resulting in secondary school students having a lower sense of pride in the national flag and national anthem than elementary school students (as cited in Song, 2007). Analyzing this study in conjunction with Zheng (2012) also confirms the views of the above scholars.

Correlation between Children's Evaluation of Chinese and Willingness to be Chinese

This study found that there were no significant differences in age, gender, school, and children's evaluation of Chinese people. There was no significant difference in children's evaluation of Chinese from the fourth grade to the sixth grade, $F(400) = 0.392$, $p = 0.676$, and all children's evaluation of Chinese was very positive ($M > 3.99$). However, there are age differences in the degree of children's evaluation. Children's evaluation of Chinese people first increases, reaching the highest level in the fifth grade, but then drops significantly, reaching the lowest level in the sixth grade (12- 13 years old). The trend of children's evaluation of Chinese people after the age of 13 needs further research. Age, gender, and school were also not significantly different from children's liking to be Chinese. There is no significant difference among children of different grades in becoming Chinese, $F(400) = 0.773$, $p = 0.462$. Most of the children like to be Chinese, and the trend is rising from the fourth grade to the fifth grade, but after the fifth grade, it starts to drop significantly.

From the fourth grade to the sixth grade, there is a significant correlation between children's evaluation of Chinese and liking to be Chinese ($r = 0.279$, $p < 0.001$), so it can be found that older children (9 to 13 years old) can Evaluation of Chinese people and liking to be Chinese are considered together.

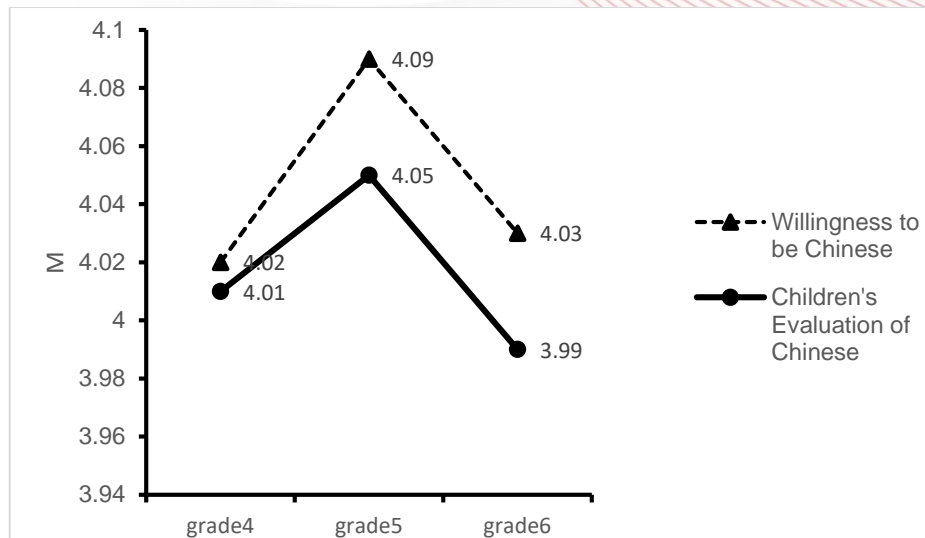


Figure 1 children's evaluations of being Chinese and willingness to be Chinese

5.0 Conclusion

The findings validate the theory of political socialization and the theory of social psychology

Verification of political socialization theory

The results of this study show that the five important factors influencing children's political socialization in Hainan Province are parents (59.1%), siblings (31.2%), grandparents (21.7%), school teachers (19.9%), and friends and classmates (19.6%).

During childhood, interpersonal interactions are an important way to influence children's sense of national identity and the development of national knowledge, especially the important adults that children come in contact with: parents and teachers. From the results, family has the greatest influence on children's national knowledge, including parents, siblings and grandparents occupying the top three positions, which verifies the viewpoint of political socialization theory that family has the greatest influence on children.

Child development psychologists suggest that "the child's world is two worlds". One is the world in which parents and children interact with each other, and the other is the world in which children interact with their peers. As children grow older, good interactions with peers in the upper grades (9-13 years old) are important milestones in children's development, and peer interactions are beneficial to children's self-development and moral development, and are an important factor in the development of children's social competence. The study of children's national knowledge formation in Hainan also verified the important influence of friends and classmates (19.6%) on children's national knowledge formation.

In terms of schooling, this study found that the fourth most important political factor influencing the formation of children's national identity was teachers (19.9%). Song (2007) found that 67.7% of children in Taiwan, China, perceived teachers as the second most influential factor in influencing their national knowledge, after family education. The findings from the two regions suggest that schooling in Hainan Province has an influence on children's political socialization process, but it is much weaker than the influence of family education. Such findings reveal the need for further research on the effectiveness of schooling on children's patriotism education in Hainan region.

Ehman (1980), Langton, K., Jennings, M.K. (1968) and Lowe, R. (1999) believed that in the process of children's political development, schools play a major role, which is specifically manifested in promoting children's mastery of political knowledge. However, this study shows that the influence of schooling on the formation of children's national identity is apparently weak. Liu (2008) and Zuo, Chen & Zhou (2003) also found that schooling had a weak influence on Chinese students' national identity. Also Barrett, M., & Short, J.'s (1992) study of British children's perceptions of European countries found that teachers were not the source of children's knowledge of foreign countries, and that the school curriculum needed to be researched. Nearly half of the schools researched in this study were patriotic education base schools, but the function of school education was imbalanced in the formation of children's national identity, and school education, which assumes an important nurturing function, did not effectively promote the formation of children's national identity. So in which part of the systematic, diversified and functional school education institutions have problems that affect the performance of the school's function of educating people for the country, for example, how do the educational philosophy, the purpose of education, the appropriateness of the implementation of education and the purpose of education, the educational resources, the development of curricula, the curriculum, and the implementation of curricula affect the formation of children's sense of national identity. This is worthy of further study to find out the reasons for the imbalance in school education before we can make the right suggestions and paths.

To summarize, at the elementary school level, we found that family education has an important influence on children's national knowledge and national identity formation from grade 4 to 6 in Hainan Province, followed by peer influence, and finally by school education, but the influence of school education on children's national identity formation is relatively weak.

Verification of the in-group preference hypothesis

Social identity theory assumes that people identify with a particular group, giving the group a higher rating. When people form an in-group preference, the more people identify with the in-group as well. National identity belongs to social identity, so there is a positive correlation between national identity and in-group preference. Children from different schools, genders and ages rated Chinese people positively. The children showed an extremely strong liking for Chinese people, which verified the hypothesis of in-group preference of social identity theory.

Verification of self-categorization theory

The results of the children's self-categorization attributes in this study show that age is an important reason for the self-categorization attributes of children in grades four to six in different districts and cities and counties in Hainan. As age increases, the importance of "gender" for personal identity begins to decrease, and the importance of "country of residence" and "place of residence" for personal identity gradually increases. Turner (1985) argues that people choose to categorize themselves in different ways and using different criteria over time, and that the labeling of categorization depends entirely on which social identity criteria are most salient at the time. Thus, categorization criteria change with different social contexts.

Age is significantly correlated with children's national perceptions

This study supports that most of the children are able to perceive the basic knowledge of the country correctly from the age of 9 years.

In terms of age and children's attitudes toward the Chinese, the overall results of this study confirm Rutland's (1998) finding that children begin to show an in-group preference at age 10.

In-group preferences begin to be exhibited by children in grades 4 through 5 (ages 8-10) in the Hainan area.

However, children's evaluations of being Chinese rise gradually from grades 4 to 5, reaching a maximum in grade 5 but a minimum in grade 6. In terms of willingness to become Chinese, children in all three grades were willing to become Chinese, with an upward trend from fourth to fifth grade, but a significant decline after fifth grade. A correlation analysis between children's evaluations of Chinese people and their willingness to become Chinese found a significant correlation. The more positive the evaluation of Chinese people, the more willing children were to become Chinese. As the level of positivity decreased, so did the willingness to become Chinese, suggesting that older children (ages 9 to 13) were able to combine their evaluations of the Chinese people with their willingness to become Chinese. Further research is needed on the attitudes of children and adolescents towards Chinese people and their willingness to become Chinese after the age of 13.

6.0 Recommendations for follow-up studies

Research content

Literature exploration found that the age of nine is a critical period for children's political development, so the research population of this study mainly gathered children from the fourth grade to the sixth grade of elementary school. This study found that age is one of the main factors influencing the development of children's national identity, and Phinney (1996) found that around the age of 20 is a critical period for the formation of national identity. Therefore, subsequent studies can extend the selection of research subjects to include first through third grades of elementary school, junior high school, high school, and college students, which means that research needs to be done on the national identity of children and adolescents between the ages of 6 and 22.

This study was conducted in four cities and counties in Hainan Province, and the students were mainly from public schools and did not include private schools, especially international schools, or children from ethnic minority areas. Therefore, the inference of this study is only limited to the scope of this study. A follow-up study that extends the population to the entire region of Hainan Province and to private schools would provide a clearer understanding of children's national identity in elementary school in Hainan Province.

Research Methodology

This study used a questionnaire method, mainly because the questionnaire involves reading and comprehension questions, so only children in grades four through six were studied. If the follow-up study needs to understand the development of national identity of pre-school children in the whole stage of elementary school, it is recommended to use interview method and drawing method to make up for the shortcomings of the questionnaire survey method, taking into account the difficulty of reading the questionnaire for younger children.

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The Influence of Situational English Teaching Method on High School Students' English Speaking Learning Efficiency

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Abstract

The objective of this study was to explore the influence of the Situational English Teaching Method on senior high school students' English speaking. The study was conducted using the questionnaires at Ying Hua Senior High School in Tianjin, China. A total of 60 senior high school students participated in this study actively. The students answered the questionnaires after attending the English classes where the Situational English Teaching Method was being implemented. The data were analyzed using SPSS version 27 to measure the level of effectiveness in learning English Speaking. Descriptive statistics showed that the situational English teaching method had a positive impact on English language learning. Based on the findings of the study, the excellent pedagogical recommendations were made in order to develop better teaching plans and arrangements for English speaking classes so that senior high school students can speak English more confidently.

Keywords: Situational Teaching Method, Speaking, High School students

Abstrak

Objektif kajian ini adalah untuk meneroka pengaruh Kaedah Pengajaran Bahasa Inggeris Situasi terhadap pertuturan Bahasa Inggeris pelajar sekolah menengah atas. Kajian ini dijalankan menggunakan soal selidik di Sekolah Menengah Atas Ying Hua di Tianjin, China. Seramai 60 orang pelajar sekolah menengah atas telah menyertai kajian ini secara aktif. Pelajar menjawab soal selidik selepas menghadiri kelas Bahasa Inggeris di mana Kaedah Pengajaran Bahasa Inggeris Situasi sedang dilaksanakan. Data dianalisis menggunakan SPSS versi 27 untuk mengukur tahap keberkesanan pembelajaran Bahasa Inggeris Bertutur. Statistik deskriptif menunjukkan kaedah pengajaran bahasa Inggeris situasional memberi impak positif kepada pembelajaran bahasa Inggeris. Berdasarkan dapatan kajian, cadangan pedagogi yang sangat baik telah dibuat untuk membangunkan rancangan pengajaran dan penyusunan yang lebih baik untuk kelas berbahasa Inggeris supaya pelajar sekolah menengah tinggi boleh berbahasa Inggeris dengan lebih yakin.

1.0 INTRODUCTION

The objective of the study is to explore and evaluate the the influence of SETM on senior high school students' English speaking learning efficiency. This chapter review the comprehensive review of the study, including background of the problem, problem statement, research questions, research hypotheses, the significance of the study, scope and limitation, and operational definition. The content of the new curriculum is increasingly linked to social life, and the practical and oral communication function of English as a language subject facilitates teachers to create contexts for students to actively participate in the classroom. In English language teaching, teachers also generally recognize the need to develop students' practical skills in using English by stimulating their enthusiasm and motivation for learning (Zhang, 2000). In this context, contextual teaching has become an essential pedagogy in the English classroom, contributing to the improvement of students' ability to use spoken English and to the quality of English teachers' teaching in secondary schools. A survey on the use of contextual teaching in secondary school English teaching will help to better understand the current situation of the implementation of this teaching method, to understand the use of contextual teaching in high school English classrooms, and to examine the effectiveness and efficiency of contextual teaching (Zhang, 2022).

To sum up, learning spoken English is not only an important means of acquiring knowledge, but also of gaining experience, and it is an important means of developing critical and developmental thinking. Otherwise, oral English learning will be extremely isolated and unable to achieve communicative functions. Therefore, students' oral English learning should meet the general requirements: learning in meaningful, authentic, and situational contexts. In fact, a good English learning environment contributes greatly to most non-native English learners. In order to continuously improve the spoken English of high school students, secondary school English teachers should improve the efficiency of English activities in the classroom and master the latest English teaching methods (Zeng,2005). Therefore, there is an urgent need to further investigate the contextual approach to teaching English as a foreign language, namely Situational Teaching Method.

2.0 LITERATURE REVIEW

2.1 The Theoretical Foundation

2.1.1 The Situational Cognitive Learning Theory

This section aims to provide a theoretical basis for the application of STM oral English classroom training in English language teaching in vocational colleges.

According to Ran(2018), based on the theory of contextual cognitive learning, teachers should follow four major principles when creating English teaching contexts. First, contextual cognitive learning theory means that the upgrading and development of knowledge and competence occur in the process of using knowledge continuously in real life, so teachers should explore new contextual resources from the reality of English classroom teaching as much as possible to stimulate students' enthusiasm and encourage their participation. Second, contextual cognitive theory believes that knowledge is a product of the interaction between personality and context, and denies that the teaching process is a one-way transfer of knowledge. Therefore, while creating English teaching contexts, teachers need to interact with classroom communities of practice to provide harmonious contexts and rely on teacher-student relationships. Thirdly, contexts are diverse and students' learning shows obvious individual differences, so teachers should start from multiple perspectives and levels.

The situation created is vivid and concrete, with a certain emotional color. It will cause, through students' emotional experience, students to understand the material, and promote the overall harmonious development of students' mental functions, so one of the theoretical foundations of the contextual teaching method is psychological. From the perspective of psychology, contextual cognitive learning is the theoretical foundation of the contextual approach to teaching and learning. Contextual cognitive learning was born in the late 1980s and is a learning theory that was developed and improved at the beginning of this century." Contextual Cognition and the Culture of Learning, by Brown, Collins. Dugoud in 1989, is considered a representative of the theory of contextual cognitive dispositions. Transferring knowledge to real everyday life and pointing to knowledge that can be understood during application has become an important research theory. Once people are able to understand the content of the knowledge, they can quickly apply it in practice. This type of learning must be effective in some cases because it develops students' problem-solving skills.

Everyone knows that a relaxed and positive classroom atmosphere is the key to getting the best out of teaching and learning. Instead, the contextual approach brings a healthy and positive emotional experience into the English classroom, through which learning becomes a joyful activity where students feel relaxed, happy and find everything new. More importantly, students can translate classroom knowledge into solutions to real-life problems.

2.2.2 The Language Acquisition Theory

Language acquisition is the learning and development of a person's language. Language acquisition theory is a combination of Chomsky's language acquisition apparatus and Krashen's second acquisition hypothesis (1982). On the one hand, Chomsky argues that there is an inherited language acquisition device (LAD) in the human brain and therefore they have the ability to acquire language naturally. On the other hand, Brown-Krashin's language acquisition (1981) includes the acquisition-learning hypothesis, the natural order hypothesis, the monitoring hypothesis, the input hypothesis, and the affective filter hypothesis, all of which are interconnected and complementary.

We know that learners acquire foreign language competence in two ways, one is acquisition and the other is learning. Acquisition is a natural way, and when a child learns a native language, the learning process is almost imperceptible. The learner naturally acquires the ability to use the language in meaningful communication, language comprehension and language use, while learning refers to the process of consciously learning the rules of the language.

Krashen's input hypothesis (1981) can tell us how language is learned, he argues that as long as it receives enough language input, which is comprehensible and practical, then people can acquire language. Krashen (1982) also argues that students' original language level is i and they are exposed to a large amount of $i+1$ containing i . When we give students language input, their language level will increase from i to $i+1$. Krashen argues that the ideal input should have the following characteristics.

- a. Comprehensibility. Understanding the linguistic information encoded is necessary for language acquisition, while incomprehensible input is merely a distraction
- b. Interesting and relevant. In order to make language input conducive to language acquisition, we must process its meaning and make the input language material more interesting and relevant to language acquisition so that learners will acquire language unconsciously.
- c. Non-grammatical procedural arrangement. "The key to language acquisition is a sufficient amount of comprehensible language input. If the goal is acquisition, rather than learning, then grammatical instructional procedural arrangements are not only unnecessary, but also undesirable."
- d. Sufficient input. To acquire a new language structure, it is not enough just to do these exercises. There should also be many effective hands-on language activities.

Krashen's theory of foreign language teaching provides some insights into foreign language teaching in schools. According to his input hypothesis, students' existing language level is the new language in which the teacher imparts knowledge that is not only innumerable but also comprehensible. When language learners are exposed to this material, they are automatically motivated to learn with the help of their existing language level and context, and they are able to understand what it contains. (Zhu & Zhang, 1996) "Input that is comprehended simply because of the help of context. (Ellis, 1985)." Krashen's theory of second language acquisition (1982) sheds light on foreign language teaching and teachers should adopt all means to improve the comprehensibility of language input, such as teachers can use visual aids (e.g. objects, pictures, movies, etc.). teaching (He, 2002).

Contextual design methods for supporting instruction can improve the comprehensibility of language input; according to Krashen's affective filtering hypothesis (1981), teachers should set reasonable contexts to make language input interesting and create a meaningful and relaxed

learning atmosphere; only then can students have strong motivation and confidence as well as a low anxiety state, and language input can be absorbed more effectively by the brain.

2.2.3 Constructive Learning Theory

Constructivism holds that it is not enough for teachers to talk and instruct before the classroom in order for students to acquire knowledge. Instead, learners are builders and creators of meaning and knowledge, and they acquire knowledge by introducing critical models into hands-on teaching and learning activities. (Gao, 2008). Constructivist learning theory emphasizes that "learning is not taught to learners by teachers, but is acquired by learners with external help (e.g., teachers, peers, etc.) in certain situations, with the necessary learning materials, and through the construction of meaning. Context, cooperation, dialogue, and meaning construction are the four elements of a constructivist learning environment. (Kong, 2005). The learning process is not a passive recipient, but rather the learner completes depends on prior knowledge and personal experience.

Therefore, in second language teaching classrooms, teachers should create meaningful contexts for students extensively in the teaching process; choose the most appropriate authentic situations to help students relate new introductory language materials to their own lives and experiences with mechanical response situations. (Huang, 2002) " Constructivist learning theory lays emphasis on the learner's initiative, originality and structure in the learning process and advocates a change from contextualized teaching that is divorced from reality."

2.3 Research on Situational Teaching Method at home

Ancient Chinese culture has always attached importance to the educational role of context. More than 2,300 years ago, Mozi, a great thinker and educator during the Spring and Autumn and Warring States period, put forward the idea that "human nature is like silk; if it is dyed in pale, it is pale; if it is dyed in yellow, it is yellow". The story of Meng Zi's mother who moved three times and broke her weave to teach her son in *The Legend of the Martyrs* (2002) has long been told.

Situational teaching became a systematic teaching method in China in the late 1970s and early 1980s. Inspired by the contextual teaching of foreign languages, Li Jilin, a language teacher of the highest rank, began to use contextual teaching in the language classroom of the elementary school affiliated with Nantong Teachers' College in 1979, starting the contemporary research on contextual teaching in China. Li's contextual teaching method absorbed the essence of the ancient Chinese idea of "context", combined with the theory of the division of labor between the two hemispheres of the brain, and summarized it while practicing in language teaching and published the first book on contextual teaching research in China, "Experiments and Research on Contextual Teaching", in 1986, which opened a new chapter of contextual teaching research in China. In her book, she provided a large number of teaching examples that mobilize students' emotions in situations, explained the basic principles of contextual teaching, explained the operation system of contextual teaching, outlined the four characteristics of contextual teaching and meticulously summarized the considerations for teachers to create situations in the classroom, i.e. the four fourths principles and five elements of contextual teaching. Li's research on contextual teaching has been conducted for more than thirty years, and his research on contextual teaching has also gone through the progression from "contextual teaching", "contextual education" to "contextual curriculum". The research on contextual teaching has also gone through the progression from "contextual teaching" to "contextual education" to "contextual curriculum", which is fruitful and productive.

In the early years, contextual teaching was mainly applied to the reform of language subjects in China. In the early 1990s, contextual teaching was promoted and began to expand from single subjects to multiple subjects and to other subjects. On the other hand, contextual teaching has also moved beyond the scope of basic education to secondary and higher education classrooms. Nowadays, contextual teaching can be found in medical nursing, mathematics, history, politics, chemistry, music, art and integrated practical activity classes.

In recent years, there has been a lot of research on contextual teaching in China, and I have collected nearly 100 articles from core journals, including 11 master's theses. After analyzing and organizing, I found that these articles mainly study contextual teaching from two perspectives: macroscopic and microscopic. Macroscopic research refers to the discussion of the function or theory of contextual teaching in school education in the general environment. Take Zhang Shuxian's (2002) "Contextual Teaching under the New Curriculum" as an example, the author proposes that three characteristics of the new "human-centered" curriculum determine the need for contextual teaching. First, the new curriculum needs to use contextual teaching to stimulate students' emotional experience and help them internalize the spirit of patriotism and collectivism as a code of behavior. Secondly, the subject content of the new curriculum is more and more closely connected with social production and life, and classroom teaching, as the main means of school teaching activities, also needs to use contextual teaching to realize the living of teaching. Lastly, the new curriculum mentions that the emphasis on practice not only includes teachers' teaching practice, but also advocates students' participation in teaching activities as the main body. Teachers are required to create contexts in classroom teaching, and by exerting positive influence on students, they must not only participate in classroom practices, but also spontaneously participate in social practices. Liao Lanqing (2005), in his "Contextual Teaching in a New Concept", suggests that teachers should stimulate students' enthusiasm in classroom teaching by guiding, reinforcing and practicing: when teaching the content of the text, they should create virtual situations at the right time and let students become the protagonists in the situations so as to deepen their understanding of the text. For example, in Wang Xiaomei's (2002) "Analysis of Psychological Factors Affecting Contextual Teaching", she analyzed the influence of psychological factors on contextual teaching from three perspectives: teachers, students and non-verbal behaviors, taking into account her own classroom teaching practice. First, whether the teacher's leadership style is authoritative or democratic, the teacher's personality index and her teaching style all affect the effectiveness of using contextual teaching. Second, students' motivation to participate in the classroom and adolescents' herding behavior can have positive or negative effects on contextual teaching and learning. Finally, nonverbal behaviors such as eye contact between students and teachers and teachers' demeanor in response to students' feedback also have a significant impact on contextual instruction. Therefore, teachers should pay attention to improvising in the classroom party teaching, and turn unfavorable psychological factors into powerful motivation to promote contextual teaching.

The so-called microscopic research mainly refers to the discussion of the application strategies and principles of contextual teaching in the teaching of various disciplines, among which the study of the use of contextual teaching in the language classroom is the most common. For example, Wu Naihou proposed in "The Means and Ways of Implementing Contextual Teaching" that contextual education in language classrooms should: "depict the context with humorous language, reproduce the context with images, experience the context with lively and vivid performances, and render the context with meaningful music.". In this paper, we will focus on analyzing the research about the use of contextual teaching in the English subject.

From the perspective of the research content of English subject, the current research on contextual teaching method in high school English classroom in China can be mainly divided into three categories. The first category mainly lies in proposing strategies, principles and methods for creating teaching contexts. For example, Wang Lu (2004), a member of the

International Association of Teachers of English and a special English teacher, put forward the basic strategies for implementing contextual teaching in English in conjunction with the rich content of high school English teaching in "Exploring and thinking about contextual teaching in the English classroom". They include; creating a teaching context. Inducing students to boldly participate in English communicative activities in the classroom; creating teaching contexts to train students' creative thinking by stimulating their inspiration and imagination: constructing open English teaching contexts and carrying out task-based teaching activities to develop students' English language skills. The second category is mainly the discussion of contextual teaching method from the perspective of theoretical foundation, for example, Mi Junkui (1990) in "Theoretical Discussions on Contextual Teaching Method" has sorted out the research and development of contextual teaching from ancient times to the present, from foreign countries to China and pointed out that "the contextual teaching method is based on the laws of human mental activities revealed by modern psychology, which not only provides the possibility of greatly improving the quality of teaching, but also is the basis for the development of personalized teaching. It not only provides the possibility of greatly improving the quality of teaching, but also is a necessary path for the harmonious development of personality to become a reality." The third category focuses on how to use contextual teaching in the English classroom to improve students' knowledge of language or language skills. The third category mainly suggests how to use contextual teaching in the English classroom to enhance students' mastery of language knowledge or language skills. For example, Qiu Wanli's (2003) "Creating Contexts to Promote the Mastery of Active Vocabulary" proposes five principles for teaching vocabulary in a contextual way in response to the current situation of "emphasis on parts of speech, not on vocabulary: emphasis on spelling, not on word meaning: emphasis on mechanical memorization, not on regular teaching" in high school English vocabulary teaching. In "Exploring the Contextualization Training of High School English Grammar Teaching", Lai (2008) seeks the possibility of contextualizing grammar teaching in high school English classrooms from the new curriculum standards of English for general high schools and the views of linguists at home and abroad, and provides seven feasible strategies and cases for peer teachers, such as using the movie Schindler's List to assist the learning of the usage of virtual conditional sentences.

From the above summary, we can see that although there are quite a lot of articles studying contextual teaching, there are relatively few in-depth studies on the use of contextual teaching method in English classroom teaching in Chinese senior schools. Among the 35 master's theses collected by the author, only three studied the use of contextual teaching in language teaching, three focused on how to use context in junior high school English classrooms to develop students' English communicative skills, and only the remaining five studied the use of contextual teaching in high school English classrooms. Among them, Liu Guilian (2005) of Guangxi University's "Research on the Application of Contextual Teaching in High School English--My Teaching Record" outlines four typical teaching contexts from junior high school to high school English teaching and reflects on the teaching using her own teaching practice for many years. Wang Chun (2008) from Soochow University uses a comparison of experimental and control classes to illustrate the effect of contextual teaching in high school English classrooms. Li Jilin (2000) stated "The Application of Situational Teaching Method in High School English Grammar" is an English paper that uses pre-tests and post-tests to verify that contextual grammar teaching can increase students' interest in learning English and the integration of contextual teaching and grammar teaching. Liu Xiaomin (2008), East China Normal University, proposed six principles and six means for creating English teaching situations from the theoretical basis of English teaching situations.

To sum up, I believe that the lack of in-depth research on the use of contextual teaching in Chinese secondary school English classrooms is mainly influenced by the following factors: First, the national context of China is quite different from the environment where contextual

teaching was born, and contextual teaching was first applied to the study of native language teaching in China, so it has to be developed over a period of time in order to be better used in Chinese English teaching. Secondly, after the new curriculum reform, the task of teaching English as a foreign language has been changed. Secondly, after the new curriculum reform, task-based teaching method and other newly emerged teaching methods are highly respected, which also reduces the scholars' enthusiasm for contextual teaching research. As a result, "a plateau phenomenon has emerged in contextual teaching research (Kong Fancheng, 2005)." This study will examine the use of contextual teaching in high school English classrooms through a combination of questionnaires and interviews with teachers and students in Xinhua senior School in Tianjin.

2.3 Research on Situational Teaching Method at abroad

The contextual approach to teaching and learning has been extensively studied abroad. This approach was initially known as the oral approach. The most famous figures are Harold Palmer and A.S. Hornby. (Yoshioka, K.I., 1970) Motivated by the development of a more scientific approach to language teaching, the principles and processes of selecting and organizing the content of language instruction have been systematically studied. We mention two main aspects: lexical control and grammatical control. Palmer (1964) considers vocabulary to be one of the most important components of language learning and, in addition, reading should be based on a large accumulation of vocabulary. In terms of grammar, Palmer considers it as the basic sentence pattern of spoken language. They believe that new sentence patterns and vocabulary should be presented before the text and the presentation should be accompanied by specific situations.

That is, the new vocabulary presentation should take place in the corresponding situation before the text appears. According to this view, many applied linguists divide grammatical rules into sentence patterns, which help to understand the rules of English sentence patterns. The approach that includes the principles of selection, organization and presentation of language instruction was developed by Palmer and Hornby and other British applied linguists, although they had different views on the specific processes used in classroom instruction. Due to certain deficiencies in the definition of the contextual approach to teaching and learning, a new approach to language teaching was proposed to provide a basis for further research. The oral method has been applied and widely used since the 1950s. The characteristics summarized by Richards and Rogers (1986) are as follows.

- (1) Spoken language preceded written form.
- (2) The target language is used in classroom instruction.
- (3) New language points and grammar items are taught and practiced in specific contexts.
- (4) Vocabulary selection should follow the rules of basic and useful vocabulary.
- (5) Grammar should be taught from simple forms to complex forms.
- (6) Reading and writing can be introduced after "vocabulary" and grammar are built up.

In 1950, Hornby published a series of articles on language teaching in which the contextual approach was mainly used, and then the contextual or situation approach replaced the name of oral grammar. This method was widely used and applied rapidly.

In the 1960s, Pitman's colleague Gloria Tate developed it further and wrote a series of textbooks. A.S. Hornby wrote a reference book based on the application of the contextual approach to teaching the principles of the contextual approach to teaching spoken English to cabin crew called "English Patterns L.G. Alexander compiled a book based on the contextual approach to teaching English called "New Concept English", which is still in use today. In this book,

detailed teaching steps as well as classroom activities are given. The main teaching steps are as follows: presenting the situation, learning the language, listening, speaking, repeating the exercises, and consolidating the grammatical structures.

According to the American educator Dewey (1938), education is a continuous reformation of the learner's own experience. Experience is the origin, and practice is followed by knowledge. He advocated that education should take place in real social situations. In order to gain experience, a number of situations are needed. He argued that this knowledge should not be acquired through textbooks or teacher presentations, but through activities in specific situations. Teaching procedures should be categorized in several steps such as situations, problems, observations, solutions and applications. He promoted the importance of situations and greatly advanced this approach.

Halliday (1964) argues that it is not enough to memorize vocabulary and sentence structure to acquire a language, because we may encounter unexpected and different problems in our communication with others. "We learn how to behave in specific situations, not by learning the rules of what to say" (Halliday 1964). He states that an effective way to improve students' speaking is to let them practice in real-life situations and help them use new language structures in real-life situations.

Li Haixia (2019) studied contextual teaching methods in oral English classes and concluded that oral English teachers can help students solve problems in a variety of teaching situations, just like a magician puts students in practical situations designed to help students gain more confidence in practicing the ability to express ideas and communicate with others in oral English.

2.4 Conclusion

The purpose of this chapter is to shed light on researchers' perceptions on the Situational English teaching method and the effectiveness of the practice of the Situational English teaching method. Furthermore, it can be concluded that this chapter is literature review towards the Situational English Teaching method at home and abroad and the concentrating on four elements of teaching element, interaction and participation, technology, accessibility and feasibility, and the second language acquisition theory in the process of practice, with regard to Practice of Situational Teaching Method in Oral English Teaching in Chinese senior Schools. (Lai, 2008)

3.0 METHODOLOGY

3.1 Sample Population and Sample Technique

The experimental subjects of this experiment were the students in Senior 3 Class 2 of Ying Hua Senior High School. The experiment class was selected according to the significant differences in the pre-test, with almost the same level of English proficiency, and most of them had difficulties in speaking English. From November to May, the situational English Teaching Method is used in the experiment class. Throughout the experiment, the students were not told in advance that they were participating in an experiment, so we could determine the validity of the experiment.

3.2 Research Instrument

The following instruments were used in this experiment: tests and questionnaires. They are important instruments to demonstrate the dramatic changes in students' attitudes towards spoken English and the improvement of their speaking skills after the adoption of the situational English Teaching Method.

3.3 Questionnaire Items Design

The original questionnaire was taken from Zhang and Li's 2018 study on the effectiveness of situational English teaching methods in junior high school, and the questions in the questionnaire were developed based on the research questions to answer the learning effectiveness of English language learning. The questionnaire included physical participation, the matching degree, immersion perception, learning outcomes. The design of the items in each structure is shown in Table 1.

Table 1 Questionnaire items design

Construct	Content	Question item
1	Gender	1
2	Age	1
3	Physical participation	5
4	The Matching degree	6
5	Immersion perception	8
6	Learning outcomes	6
Total		25

3.4 Likert five-point Scale Design

This scale was developed by the Likert Institute. The Likert scale, which has a mental reading similar to "lick" and "lick", is a psychological response scale often used in questionnaires and is the most widely used scale in survey research. When answering items on such a questionnaire, they clearly indicate their agreement with the statement. (Qi, 2006) The scale consists of a set of statements, each with the words "strongly agree", "agree", "neutral", "disagree" The total score for each respondent's attitude is his total score for each response, and the total score explains the strength of his attitude or his different status on the scale.

Respondents can therefore answer the question items on these five levels and the researcher can obtain their total score for each response and analyse it.

Table 2 The Likert five-point scales design in questionnaire

Symbol	Meaning
1	Strongly Disagree
2	Disagree
3	Not Sure
4	Agree
5	Strongly Agree

3.5 Conclusion

In summary, this chapter discusses the methodology used in this study. The authors begin this chapter with a brief explanation of the research framework and the complexity of the data. The population for this study was students from the Senior class 2 in Ying Hua Senior High School in Tianjin. The instruments used in this study were an online questionnaire distributed to respondents, a pre-test and a post-test. SPSS 27 analysis was used in this study; therefore, the results of the analysis will be presented in the next chapter.

4.0 DATA ANALYSIS

4.1 Independent Sample T-test

Table 4.8 T-test Analysis Results

Variables	Samples	Minimum	Maximum	Mean	Standard	t ·	p ·
Pre-test scores	60	60.000	83.000	68.767	5.515	96.578	0.000**
Post-test scores	60	75.000	98.000	84.733	6.070	108.132	0.000**

* p<0.05 ** p<0.01

The aim of this study was to compare the differences in participants' scores between the pre-test and post-test. Data were collected from two samples: Pre-test scores (pre-test scores) and Post-test scores (post-test scores). The volume of each sample was 60. In the pre-test scores sample, participants' scores ranged from 60.000 to 83.000, with a mean score of 68.767 and a standard deviation of 5.515. In the post-test score sample, participants' scores ranged from 75.000 to 98.000, with a mean score of 84.733 and a standard deviation of 6.070.

We used a t-test to compare the differences between the pre-test and post-test scores. Based on the calculated results, we found a t-value of 96.578 with a p-value of less than 0.001 (significance level < 0.001), indicating a significant difference between the pre-test and post-test scores. This result provides strong evidence to support our research hypothesis.

5.0 FINDINGS/ RESULTS

By interpret the descriptive data from the questionnaires, when the English class with SETM, students can have better learning effectiveness and class activity participation. In the meantime, when the English class with SETM, students can have an excellent performance and taken on moderate learning satisfaction.

6.0 DISCUSSION

Situational English teaching can help students adapt to different cultures and environments. Situational English teaching can be designed to reflect a variety of situations encountered while traveling or living abroad, such as taking public transportation or interacting with locals. By immersing students in these environments, they can develop language skills and cultural awareness that will prepare them for real-life interactions in a foreign country. Moreover, regardless of the context, the Situated English teaching encourages active student participation and the practical application of language skills. Students have the opportunity to practice speaking, listening, and even writing in a relevant and meaningful way. This method helps to improve their fluency, self-confidence, and overall language proficiency. Ultimately, the specific teaching techniques and materials used in Situational English may vary

depending on the educational institution, the program, and the proficiency level of the student. However, the basic principles of creating realistic situations remain the same from one situation to another. By incorporating these familiar scenarios, students can better relate to the content and learn how to communicate effectively in their own contexts.

7.0 CONCLUSION

To sum up, the research has revealed the impact on the Situational English Teaching method application effectiveness in the speaking courses in senior high school. The Situational English Method has a highly positive to the spoken English for High School Students at Tianjin Ying Hua High School. As a result, English teachers need to design English speaking lessons that take into account student engagement, immersion, lesson fit and outcomes in the context of the Situated English Teaching Approach in order to make the approach more effective and efficient and thus improve students' English speaking skills.

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