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About the Journal

The International Journal on E-Learning Practices (IJELP) (ISSN 2289-4926 / eISSN 2600-7886) is an international peer-reviewed journal. It is also the latest flagship journal of Universiti Malaysia Sabah (UMS). IJELP is the 12th journal of UMS since its establishment on 24 November 1994. IJELP is published once a year. IJELP is published in English and it is open to all local and international authors.

Aims and Scope

IJELP is an online open access journal aimed at disseminating and sharing of e-learning practices to worldwide audience. IJELP accepts manuscripts in the area and sub-area of e-learning such as teaching and learning with technology, mobile learning, e-learning technology and innovation, multimedia-based learning, Computer-Assisted Language Learning (CALL), best practices in e-learning using social networking, PLE, management, assessment, administration and leadership. The journal is currently indexed by MyJournal and plans to be submitted for indexing in MyCite and SCOPUS (Elsevier) after the publication of ten issues.

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EDITORIAL PREFACE

Welcome to Volume 7, 2024, of the International Journal of e-Learning Practices (IJELP). Published by Universiti Malaysia Sabah (UMS), Malaysia, IJELP is an open-access journal dedicated to advancing knowledge in e-learning and educational technology. Our mission is to provide a platform for sharing innovative practices in e-learning, including technology-enhanced learning, blended and mobile learning, Computer-Assisted Language Learning (CALL), digital storytelling, and the role of artificial intelligence in education.

For this volume, most of the articles were contributed by the final-year students from the Faculty of Education and Sports Science at UMS, showcasing their research on various aspects of e-learning and ICT in education. Topics include AI-generated personalized reading texts for ESL learners, digital storytelling, social media's impact on language learning, and the use of Instagram-based e-portfolios. Several articles explore blended learning approaches and online tools like video streaming, weblogs, and mobile applications to enhance language skills. Additionally, we feature studies on gamification, Quizlet, and podcasts to support vocabulary acquisition and communicative competence.

Our contributors address critical issues such as ICT usage in TESL education, the integration of video streaming to enhance listening skills, and the potential of web-based language learning platforms. Articles also explore emerging tools like ChatGPT in supporting writing skills and understanding cognitive styles on student acceptance of AI-based learning technologies.

We are grateful to our dedicated reviewers and editors for their invaluable contributions in maintaining the quality of this publication. While this volume primarily features work from UMS students, we warmly invite submissions from external researchers and practitioners for future volumes. We encourage readers to share IJELP with colleagues, students, and fellow researchers, and we hope this volume offers fresh insights and inspiration in the field of e-learning.

Sincerely,
Volume 7, 2024
Editor-in-Chief
Dr. Noraini Said

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ENHANCING ESL LEARNERS READING COMPREHENSION AND MOTIVATION VIA AI-GENERATED PERSONALISED READING TEXTS

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ABSTRACT

This study identifies the effect of AI-generated personalised reading texts on ESL learners' reading comprehension and motivation at the secondary school level in Sabah, Malaysia. Drawing on the research of Jendia and Ismail (2023), the current study extends the exploration of AI's potential in tailoring reading materials to cater to individual learner needs. Conducted with 20 students from SMK Desa Kencana, Lahad Datu, the study employed a mixed-methods approach that incorporates both quantitative (pre-assessment and post-assessment scores) and qualitative (open-ended questions) data. The findings reveal significant improvements in reading comprehension, specifically among low and intermediate-proficiency groups. Advanced learners, however, failed to show maximal gains from the intervention which suggests the need for materials challenging materials yet suitable for higher proficiency levels. The intervention's effectiveness is due to the personalised and engaging nature of the AI-generated texts, which enhanced learners' motivation and engagement. Qualitative feedback obtained from the students also indicates the relevance of the personalised materials in the classroom. Despite the positive outcomes, limitations such as small sample size, external factors, and convenience sampling that may affect the generalizability of data are recognized. The study concludes with practical and theoretical implications, recommending integrating AI-based personalised materials in ESL education to support differentiated instruction and meet diverse learning needs. Future research should consider more extensive yet diverse samples and control for external variables to validate and broaden these findings.

Keyword(s): *AI-generated reading texts, ChatGPT, personalised learning, reading comprehension, reading motivation*

INTRODUCTION

Reading comprehension is never just a read-and-understand process. It entangles the interaction process with the written text to construct meaning (Snow, 2002, as cited in Butterfuss et al., 2020). Nevertheless, a study conducted in the United States revealed a concerning trend where students face challenges in reading comprehension, contributing to a decline in academic performance (Spencer & Wagner, 2018). This trend highlights the need for effective strategies to enhance reading comprehension, particularly among ESL learners. Addressing the challenge, this

current study proposes using AI-generated personalised reading texts to boost reading comprehension and motivation among ESL learners.

Reading, a seemingly ordinary aspect of our daily lives, is profoundly significant in self-discovery and cognitive development (Kaya, 2015). This happens as metacognitive and cognitive efforts are put in when readers try to break down the information conferred within the text to create meaning (Kaya, 2015). While the ability to read is a fundamental skill, mere reading proficiency does not guarantee a deep understanding of the text's underlying meaning; in this connection, reading comprehension should be put further concern by English teachers to ensure that all ESL learners are given opportunities to master this skill in reading.

While it can be arduous for teachers to teach reading comprehension in the classroom, students must feel motivated to learn. Only then will they be interested in engaging during the reading activity. There are two types of motivation: intrinsic motivation and extrinsic motivation. Intrinsic motivation can be maximized in the classroom by knowing the learner's interest. Previous research found that when learners' reading motivation is low, their reading competency may decline, which also causes them to fail to interact with the text effectively (Guthrie et al., 2007, as cited in Ullah & Fatema, 2013). For ESL learners, Darmayanti (2021) observes that low results often reflect a lack of interest in the reading material, indicating a need for targeted interventions.

In today's modern world, teachers need to shift the traditional classroom into a modern one by adapting technology in education. At the same time, numerous studies have discussed the implications of AI in education. However, a discernible research gap persists, particularly concerning the utilization of AI to augment reading comprehension among ESL learners within the context of Sabah, Malaysia. ChatGPT was chosen as the primary platform for generating AI-personalized reading text for ESL learners in the present study. By discerning the efficacy of the software in reading, this study offers advanced teaching strategies and methodologies whereby researchers can adopt and adapt from these findings in their research. Since the learner's motivation drives reading, this study offers valuable insights into how personalized reading text may enhance the learner's motivation. Moreover, examining which proficiency level benefited the most and the least during the intervention can help future researchers devise targeted interventions for students struggling with reading comprehension.

In essence, this research is poised to raise awareness about alternative methodologies and strategies educators can employ to enrich reading comprehension skills among ESL learners. Since this study has not been explored yet, the findings will provide a foundation for educators as they can consider incorporating AI-generated personalized reading texts in their instructional repertoire. Hopefully, this study will guide educators in optimizing the use of technology to enhance ESL learner's reading comprehension in Sabah, Malaysia.

Therefore, this present study tries to identify in what way does ESL learners' reading comprehension and motivation are enhanced via AI-generated personalised reading texts. The three research questions constructed are as below:

1. What are the effects of using AI-generated personalised reading texts in enhancing ESL learners' reading comprehension?
2. How does the use of AI-generated personalised reading texts enhance ESL learners' reading motivation?
3. Which proficiency level group shows significant reading comprehension improvement after using AI-generated personalised reading texts?

LITERATURE REVIEW

Self-determination Theory (SDT)

According to Joulide et al. (2020), self-determination theory posits that motivation can have positive effects, especially in the learning context (Joulide et al., 2020). The motivation type related to this theory is intrinsic motivation, where an individual may engage in something out of interest (Winberg et al., 2022). An example taken from a broader context in education explains that a person who is intrinsically driven may love doing a math equation because it is gratifying; thus, intrinsically motivated to find a solution to it as they feel a sense of pleasure when accomplishing the question (Kum, 2022). Indeed, reading comprehension requires ESL learner's intrinsic motivation, especially when reading academic text. Therefore, autonomy, competence and relatedness are the three psychological needs (Deci & Ryan, 2017, as cited in Guay, 2022) that must be fulfilled when enhancing intrinsic motivation in the classroom.

First, by definition, autonomy is explained as the freedom to make choices (Guay, 2022). In this connection, teachers should provide procedural autonomy support in the classroom (Núñez & León, 2015), especially when deciding the reading text employed in the reading activity. Incorporating learners in making choices for the lesson will give them a sense of being an initiator through their participation, making them more interested in learning (Guay, 2022).

Second, according to White (1959 as cited in Guay, 2022), competence need is one's passion to interact efficiently with one's surroundings. In the same way, this claim is supported by Ariani (2019), who stated that individuals will achieve maximum outcomes if they communicate with their environment effectively. Thus, catering to students' competence needs in the classroom through implementing personalised text can enhance ESL learners' motivation throughout the reading comprehension activity.

Third, the sense of relatedness should be supported by providing contextualisation in the personalised reading text. Relatedness, described as the feeling of relating with and receiving recognition from others (Ariani, 2019), is crucial in maintaining motivation in the lesson. Implementing personalisation of text can support cultural relevance in the classroom as it will help ESL learners become more connected to the material, thus leading them to become more motivated to engage with it. By employing students' cultural relevance in the personalised text, the relatedness needed in SDT can be supported as it can promote learners' intrinsic motivation in reading comprehension.

To sum up, by acknowledging the psychological needs of autonomy, competence and relatedness, educators can provide a supportive learning environment that cultivates ESL learners' interest, relation and proficiency.

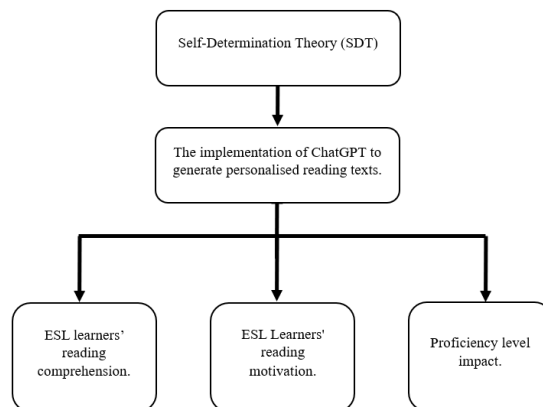


Figure 1: The theoretical framework of this study employed the Self-Determination Theory (SDT).

ChatGPT to Generate Personalised Reading Texts

Artificial Intelligence “AI refers to systems that display intelligent behaviour by analysing their environment and taking action – with some degree of autonomy – to achieve specific goals” (p 1, Boucher, 2020). AI has greatly supported teaching as it can transform the classroom environment into personalised learning (Bojorquez & Vega, 2023). The fundamental reason for implementing ChatGPT to generate personalised reading text is that it can produce text in a particular style and topic as requested by the user (Frye, 2022). Cultural differences depicted in the English language textbook may lead to learners struggling to understand the content because they are not familiar with the context due to cultural differences (Jendia & Ismail, 2023). So, there is a need to find other reading material relevant to learners’ local context. Despite authentic materials within Malaysia’s local contexts, such as newspapers and essays, that can be adapted to improve learners’ reading skills, some ESL learners may struggle to understand the text (Jendia & Ismail, 2023). This happens as the reading text is not meant to be used academically but for real-world use. For instance, the vocabulary used may not be suitable for students with low proficiency level learners as it may be too hard for them to comprehend, thus making them uninterested in reading the text. Ultimately, ChatGPT is an engaging platform that aids in personalising reading materials as it considers learners’ sense of connection in learning.

ESL Learners’ Reading Comprehension

Reading comprehension enhancement among ESL learners is paramount as it can affect their language proficiency and academic success. Jendia and Ismail (2023) stated in their research that many pupils struggle to meet the CEFR framework expectations within the Malaysian education curriculum because they possess limited reading comprehension skills. While this may be true because English is not the mother tongue for ESL learners, it is very likely for them to struggle in mastering reading comprehension skills. Based on the previous research, personalised reading approaches, including those facilitated by personalised reading texts, can help address the diverse learning needs of ESL learners (Kim & Choi, 2021). ESL learners usually encounter trouble understanding academic passages due to a lack of familiarity with the vocabulary, complicated sentence structures, and cultural unrelatedness (Cheng, 2019). These challenges can be overcome by integrating AI-generated reading texts tailored to learners’ needs, such as interest, proficiency levels and cultural backgrounds, thus improving their comprehension ability in the classroom. Besides, the personalisation of texts can aid in scaffolding learners’ comprehension skills, and the teacher can increase the complexity of texts when their proficiency is improving (Chapelle et al., 2020).

ESL Learners’ Reading Motivation

Providing learners with appropriate reading material for their interest and level will enhance their reading motivation because the materials are engaging and interesting (Brown, 2014), as cited in (Jendia & Ismail, 2023). Complex texts beyond ESL learners’ competency level may cause them to lose interest in reading and make them unmotivated to read. As a result, students who are uninterested in doing the reading activity will avoid engaging in the activity (Alhamdu, 2016). It is best to employ simple reading materials that are familiar to them as they have vocabulary deficiencies, so teachers must provide comprehensible inputs close to their schemata (Jendia & Ismail, 2023). AI-generated personalised reading texts offer an auspicious avenue for enhancing ESL learners’ reading motivation through relevant and engaging reading materials that align with their interests and preferences (Guthrie et al., 2020). Essentially, providing opportunities to connect ESL learners with culturally relevant reading materials that relate to their living

experiences and identity will enhance their sense of inclusion and motivation to interact with the text (Wong et al., 2020).

METHODS AND SAMPLING

Methodology

This research is intended to explore the enhancement of reading comprehension by implementing AI-generated personalised reading text among ESL learners in Sabah. Hence, a mixed-methods approach is employed in this study with twenty students from SMK Desa Kencana, Lahad Datu divided into three levels of proficiency based on their pre-assessment scores which are low, intermediate and advanced level.

Sampling

Initially, random sampling was utilised to answer the research question of identifying the effects of AI-generated personalised reading text on ESL learners' reading comprehension. This method is chosen to ensure that a broader population of ESL learners in Sabah, Malaysia, is represented in this study. Not only that, but random sampling can also help to minimise selection bias that may occur if the characteristic of the population is being overrepresented or underrepresented in the sample. Since one of the research questions aims to classify which proficiency level group shows significant improvement in reading comprehension after the intervention, systematic biases in the data can be avoided, thus making the inference more valid and reliable.

However, due to practical constraints such as students' absence during pre-assessment and post-assessment, the final sample managed to get only 20 participants present during both assessments. Through the adjustment, the sampling method shifted from random sampling to convenience sampling because the selection was mainly based on students' availability to participate in the study. Besides, most of the students who did not participate in this study also had inconsistent school attendance, which could have affected the result of the intervention. Thus, the 20 students selected in the study were chosen due to their active participation in the classroom and continuous involvement during the intervention.

Moreover, convenience sampling is also applicable in attaining qualitative data for the research question of acknowledging how AI-generated personalised reading texts enhance ESL learners' reading motivation. Since the research duration is limited, having participants with quick and easy access can improve accessibility during the data collection process. Five students were elected to participate in the open-ended questions through demographic factor filtration, including gender and proficiency level. In addition, this method is used to achieve data saturation to ensure the richness of data collected from all the participants.

Pre-Assessment and Post-Assessment

A pre-assessment and post-assessment test were employed to assess the effects of AI-generated personalised reading texts on ESL learners' reading comprehension. A standardised reading comprehension test was done regardless of learners' proficiency level to sort out their baseline in reading comprehension (Smith, 2018). The assessment materials include a reading passage and comprehension questions that follow the SPM format for Part 3, Reading Comprehension. While the pre-assessment established the baseline scores, the post-assessment scores measured the change after the intervention.

Open-ended Questions

Apart from that, five open-ended questions were asked to explore the effects of AI-generated personalised reading texts on ESL learners' reading motivation. The questions focus on the learner's level of engagement, interest and motivation after implementing AI-generated personalised reading texts while aligning with the theoretical framework (Ryan & Deci, 2021). In addition, these questions focused on factors such as learners' connections with the materials and intrinsic motivation.

Statistical Data Analysis

A statistical data analysis was conducted to analyse the effects of AI-generated personalised reading texts on distinct proficiency-level groups. Using SPSS to analyze quantitative data, inferential statistics and paired sample t-tests or mixed analysis of variance (ANOVA), were utilised to determine significant differences in reading comprehension improvement within the proficiency level groups (Field, 2016). This way, the statistical analysis helps identify the trends and patterns related to improving reading comprehension among ESL learners via AI-generated personalised reading text.

FINDINGS & DISCUSSION

Previous research by Jendia and Ismail (2023) discovered the possibilities of personalising reading materials for primary school pupils using ChatGPT. The past study focused on reading materials that are personalised and culturally relevant to learners using AI technology. This motivates and engages the learners more effectively than traditional texts. Building upon the insights from the previous study, the current study aims to identify the effects of using AI-generated personalised reading text on ESL learners' reading comprehension and motivation at the secondary school level in Sabah. Notably, it also intended to determine which level of proficiency, such as low, intermediate or advanced, showed significant enhancement after the intervention.

Quantitative and Qualitative Data Collection

The study was conducted in SMK Desa Kencana, Lahad Datu, with 20 students from 4 Perniagaan. The participants were chosen based on their consistent attendance because it can enhance their active participation in the classroom during the intervention. Then, they were divided based on their pre-assessment score to determine their current level of proficiency during the study, such as low (1-3), intermediate (4-6) or advanced (7-8). The pre-assessment score provided a baseline of each participant's reading comprehension level, whereas the post-assessment score identified the changes after the intervention was implemented during the study. Additionally, qualitative data were obtained to support the quantitative measure taken through open-ended questionnaires. Questions aimed to determine the student's view on their reading motivation, engagement and overall experience with the AI-generated reading texts. Thus, a more profound comprehension of students' subjective experiences complemented the quantitative findings using pre-assessment and post-assessment scores.

Furthermore, the study analysed the data collected using statistical and thematic methods. A paired sample t-test and mixed ANOVA were used to analyse quantitative data to observe the significant difference in participants' reading comprehension scores before and after implementing AI-generated personalised reading text in English lessons. Conversely, qualitative data were studied through thematic analysis to identify the recurring themes akin to students' motivation and engagement during the intervention. Integrating both analytical approaches contributes to a comprehensive comprehension of the data while providing insights into the

measurable effects on reading comprehension and subjective review from the participants. Hence, the duality of the approaches helps to ensure that the findings were multifaceted and robust as they address both statistical implications and the qualitative nuances of the intervention's influence.

The study's findings concede a few significant outcomes on the effects of AI-generated personalised reading texts on ESL learners' reading comprehension and motivation. The study also tried to identify which level of proficiency benefits the most from implementing the intervention in the classroom.

Enhancement of Reading Comprehension

Based on the quantitative analysis using the paired sample t-test, the intervention led to a statistically significant improvement in reading comprehension scores. To explain, the initial average score in the pre-assessment increased from 5.35 to 6.35 post-assessment, resulting in a -1.000 ($p = 0.008$) mean difference. This statistically significant increase emphasises the effectiveness of personalised reading materials in enhancing reading comprehension among ESL learners in Sabah. The personalised texts likely provide related and relevant content to the students, facilitating better understanding and retention of the material. Inevitably, these findings are consistent with the previous research done by Jendia and Ismail (2023), suggesting that tailored educational resources can address individual learning needs better than generic materials.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test	5.35	20	1.531	.342
	Post-test	6.35	20	1.040	.233

Figure 2: Paired Samples Statistic for pre-assessment and post-assessment.

Enhancement of Reading Motivation

The thematic analysis of the open-ended questions responses underlines some key factors that led to the enhancement in students reading motivation. Some students described the AI-generated texts as relatable yet engaging, and their interest and enjoyment in reading increased. Besides, the comprehensibility of the text while tailoring it to learners' proficiency level allowed them to read with confidence and easier, encouraging their motivation to read. Positive classroom experiences also played a compelling role in maintaining students' active engagement as they can discuss and share the personalised content provided. Overall, AI-generated personalised reading texts demonstrate motivational benefits among learners as they reported increased confidence, engagement and motivation in reading English texts.

Proficiency Level Improvements

The analysis achieved by using mixed ANOVA revealed a significant improvement across all proficiency levels. It was found that the low proficiency group had the most notable gain upon implementing the intervention. This may suggest that tailored educational interventions can effectively bridge the learning gaps across learners, specifically learners who struggle with standard texts.

STUDENTS CODE	PROFICIENCY LEVEL
S01	Low (1-3)
S02	Low (1-3)
S03	Intermediate (4-6)
S04	Intermediate (4-6)
S05	Intermediate (4-6)
S06	Intermediate (4-6)
S07	Advanced (7-8)
S08	Advanced (7-8)
S09	Advanced (7-8)
S10	Advanced (7-8)
S11	Intermediate (4-6)
S12	Low (1-3)
S13	Advanced (7-8)
S14	Intermediate (4-6)
S15	Low (1-3)
S16	Intermediate (4-6)
S17	Intermediate (4-6)
S18	Intermediate (4-6)
S19	Advanced (7-8)
S20	Intermediate (4-6)

Table 1: Learners' level of proficiency.

Within-Subjects Factors	
Measure: MEASURE_1	
	Dependent Variable
Intervention	
1	Pre_Score
2	Post_Score

Figure 3: Within-subject factors.

Between-Subjects Factors			
		Value Label	N
Proficiency level	1.00	Low (1-3)	4
	2.00	Intermediate (4-6)	10
	3.00	Advanced (7-8)	6

Figure 4: Between-subject factors.

Firstly, for low proficiency level N=4, the mean difference between pre-assessment and post-assessment scores was -3.500, which is highly significant considering that $p < .001$. From the mean, it shows that the reading comprehension of students with low proficiency levels was enhanced extensively. So, the customised texts help them grasp the concept quickly, leading them to establish their reading comprehension skills effectively and gradually over time.

Secondly, the mean difference for intermediate proficiency level was -0.700 for both assessments with N=10 while the significance level of $p = .010$. Despite having a smaller effect size than the low proficiency level, significant improvement was still in students' reading comprehension. Similarly, as the low proficiency level group, personalised materials provide pertinent support to facilitate better learning outcomes among intermediate learners.

There was no significant improvement in reading comprehension for advanced proficiency level where N=6. The p-value of .600, with a mean difference of 0.167 between pre-assessment and post-assessments, indicates that the intervention was less effective for the group. However, it is also possible to consider that they face less trouble in understanding the text, thus preventing them from being affected by the intervention. Thus, advanced learners may find that tailored materials were not challenging and led to negligible gains.

Pairwise Comparisons

Measure: MEASURE_1

Proficiency level	(I) Intervention	(J) Intervention	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
Low (1-3)	1	2	-3.500 [*]	.382	<.001	-4.306	-2.694
	2	1	3.500 [*]	.382	<.001	2.694	4.306
Intermediate (4-6)	1	2	-.700 [*]	.242	.010	-1.210	-.190
	2	1	.700 [*]	.242	.010	.190	1.210
Advanced (7-8)	1	2	.167	.312	.600	-.492	.825
	2	1	-.167	.312	.600	-.825	.492

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Figure 5: Pairwise Comparisons for proficiency levels.

Limitations

Several limitations were noted in the current study despite the positive findings, which include the sample size, external factors and convenience sampling. The small sample size and lack of control over external factors such as students' home environment may introduce variability and bias in the results. In addition, the shift from random to convenience sampling due to practical constraints may limit the study's validity and representativeness. Addressing these limitations in future studies will be crucial as it can validate and expand upon the positive outcomes observed in this research. This will ensure that the benefits of personalised reading interventions are reliable and can be extended to a broader population of ESL learners.

CONCLUSION

The study's findings underscore the effectiveness of personalised reading materials in enhancing ESL learners' reading comprehension, particularly for those at lower and intermediate proficiency levels. This highlights the potential of AI-generated texts to address individual learning needs and gaps in comprehension. The broader implications of this research suggest that personalised learning tools powered by AI could be pivotal in designing targeted educational interventions that cater to diverse learner profiles. By incorporating such technologies, educators can create more engaging and relevant reading experiences that align with students' varying proficiency levels and motivations, ultimately contributing to improved educational outcomes in ESL contexts.

Considering the findings and limitations of this study, several recommendations for future research can be suggested to address the identified gaps, including sample size and control for external factors. To ensure the generalizability of the findings, it is recommended that future studies should involve enormous and more diverse samples. Expanding the sample size to include participants from various demographic backgrounds, educational settings, and proficiency levels would provide a more robust analysis. Moreover, it is also advised that future research should aim to control for external factors such as home environment and background knowledge. For example, controlling for socioeconomic status, parental involvement, and additional learning resources would help researchers to attribute changes more effectively in reading comprehension and motivation to the intervention. Thus, addressing these recommendations in future research can advance the field of ESL education significantly. It can provide comprehensive and generalisable insights into using AI-generated personalised reading texts in education. Hopefully, this study will be highly beneficial to ESL education, significantly helping learners who struggle to comprehend the text provided in the classroom.

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DIGITAL STORYTELLING IN MALAYSIA: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

Digital storytelling (DST), which utilizes digital media to craft narratives, has garnered significant attention as a promising educational tool. Despite the growing interest in its use, there is lack of systematic examination of how DST can be utilized as a pedagogical strategy in Malaysia education context. To address this gap, this systematic review undertakes a comprehensive analysis of current studies on the topic. Using the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines, 14 relevant articles were reviewed, drawn from three major electronic databases: Scopus, ProQuest (Education Collection), and Google Scholar. The study aims to provide a deeper understanding of the potential of DST in Malaysia education by examining current trends, implementation strategies and challenges associated with its integration. The analysis indicates growing interest in DST as a pedagogical tool across different level of education throughout the years. DST has been applied in various ways, from student-created digital stories to ready-made digital narratives. However, challenges such as limited time, inadequate digital skills, insufficient infrastructure, and a lack of content knowledge in digital video production have restricted its full potential. This review underscores the importance of addressing these barriers to facilitate broader and more effective implementation of DST in Malaysia education.

Keyword(s): *Digital Storytelling, Malaysia Education, Systematic Literature Review, Digital Learning*

INTRODUCTION

In today's digital age, the integration of technology in education has significantly transformed teaching and learning processes across the globe, offering numerous benefits for both educators and learners (Adickalam & Yunus, 2022). The advancement of technology has prompted educators to explore and implement innovative pedagogical strategies to enhance learning. One such emerging and impactful approach is Digital Storytelling (DST), which represents a modern adaptation of the traditional practice of oral storytelling (Smeda et al., 2010). DST integrates storytelling with digital tools, providing educators with a dynamic method to cultivate 21st-century skills among students (Dalim et al., 2019; Robin, 2008). This approach has been incorporated

into a wide range of subjects across all educational levels for its various benefits in cognitive, affective and social aspects (Nasir et al., 2024).

Despite the growing interest in DST, there is lack of systematic examination of how DST can be utilized as a pedagogical strategy in Malaysia education context. The existing studies focus on the role of DST in learning within specific context of study. To address the gap, a comprehensive systematic review on the use of DST in Malaysian education is conducted in this studies. Gaining such an overview is paramount to inform educators on the current trends, implementation strategies and challenges, thereby maximizing the educational benefits in learning. By exploring the experiences of both educators and students, it will provide critical insights into the practical application of DST in educational settings. The findings will contribute to the existing body of knowledge on technology-enhanced learning and lay the groundwork for future research and practical applications in this field.

This study seeks to offer a comprehensive review of the implementation of DST in the Malaysian education system. To achieve this, the following research questions have been formulated.

1. What are the current trends in the use of DST within the Malaysian education context?
2. How is DST being implemented across various educational levels in Malaysia?
3. What are associated challenges with the implementation of DST in the Malaysian education system?

LITERATURE REVIEW

Digital Storytelling

Digital Storytelling (DST) is a modern educational tool that merges traditional storytelling with various forms of digital media, including images, audio, video, and interactive elements to convey a specific message or theme. It is a combination of the art of telling stories and multimedia elements such as text, pictures, recorded audio narration, music and video to portray a story with a particular theme (Digital Storytelling Association, 2021; Robin, 2016). DST has emerged as a powerful and versatile communication tool across diverse sectors such as in education, business, and community centers. In education, DST allows learners to create narratives using digital tools, enabling a deeper connection with the subject matter through personal expression and creativity (Robin, 2008). The use of technology not only enhances the presentation of stories but also transforms the learning experience, making it more dynamic and accessible.

The application of DST in educational settings offers numerous benefits, significantly in enhancing the learning experience. Incorporating DST promotes interactive learning by encouraging students' collaboration and interaction (Rajendran & Md Yunus, 2021; Setyawati, 2024). Research has demonstrated that DST is able to improve students' communication skills, allowing them to express complex ideas in more relatable and accessible ways (Elyani et al., 2022; Precintha Rubini A/P P. James et al., 2019; Ramalingam et al., 2022). In addition, DST bridges the gap between theoretical knowledge and real-world application by integrating students' experiences to make abstract concepts more concrete (Elenein, 2019). Sahril et al. (2023) highlight that DST not only aids students in better understanding the material but also boosts their confidence in classroom interactions, fostering a more enjoyable learning environment. Finally, DST engages students by increasing their motivation, curiosity, and confidence in speaking English (Aljaraideh, 2019; Nair & Md Yunus, 2022). Overall, the integration of DST in

education not only enhances students' understanding and engagement but also fosters essential skills, making it a valuable tool for modern, interactive, and effective learning environments.

Digital Learning in Malaysia

Malaysia, like many other countries, is embracing digital learning as a key component of its educational reforms. The Malaysian government has launched various initiatives to integrate technology into classrooms, including the Malaysian Education Blueprint 2013-2025, which emphasizes the need to enhance digital literacy among students and educators (Ministry of Education, 2023). Digital tools are increasingly used to promote active learning, improve accessibility, and support personalized learning pathways through the Digital Educational Learning Initiative Malaysia (DELIMa) platform. Aligning with initiatives under the '*7 Teras KPM*', the Education Digital Policy was launched in November 2023, by Minister YB Fadhlina Sidek, with the aim of cultivating digitally literate generations as well as to encourage educators to integrate technology continuously into their teaching (The Star, 2023). These concerted efforts aim to establish a robust digital education ecosystem throughout Malaysia in which utilizing technology in the classroom present an auspicious approach.

Previous studies revealed that challenges in integrating technology into education in Malaysia still persist. Key barriers to ICT integration include insufficient system support, teachers' reluctance to incorporate technology into lessons, teachers' lack of training in using available computers and software, limited time to prepare lessons due to administrative duties, insufficient time to master new technologies and the varying ability of parents to support technology use in learning, all of which complicate the effective integration of ICT in Malaysian classrooms (Had & Rashid, 2019; Ng & Yunus, 2021; Undi & Hashim, 2021). These challenges highlight the need for more robust support systems, infrastructure improvements, and comprehensive training programs to ensure the effective integration of technology in Malaysia's education system.

METHODS AND SAMPLING

This study adopted a comparative approach, specifically descriptive comparison, to analyze the selected literatures related to DST in the Malaysian education system. This review will critically examine the trends including research methodologies and the implementation processes as well as uncover the challenges encountered in the implementation of DST in Malaysia education context. A systematic literature review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 checklist. This framework, comprising 27 criteria, promotes transparency and accuracy in the reporting process to facilitate evidence based decision making (Page et al., 2021). The articles were drawn from the three databases: Scopus, ProQuest (Education Collection), and Google Scholar. A four-phase process guided the literature analysis: identification, screening, eligibility, and inclusion.

Phase I: Identification Phase

The initial stage of the systematic review involved identifying relevant literature. Primary databases utilized for this study included Scopus, ProQuest (Education Collection), and Google Scholar. To ensure reproducibility and replicability, specific keywords were employed in database searches, as outlined in Table 1. These keywords were carefully selected to ensure that the literature retrieved is relevant to the application of DST within the Malaysian education context. Following the keyword search, the total number of retrieved articles was filtered based on publication year (2019-July 2024), document type (article format), and language (English). This

filtering process was crucial to ensure that the selected articles were aligned with the research questions and reflected the most recent findings, thereby maintaining the relevance and preventing outdated information.

Table 1. Total number of articles found based on the keywords search

Database	Keywords	Total	Filter by year, type and language	Total
Scopus	(TITLE-ABS-KEY ("digital storytelling") AND ALL ("Malaysia"))	95	37	140
ProQuest (Education Collection)	noft(Digital Storytelling) AND Malaysia	30	13	
Google Scholar	"Digital storytelling" in "Malaysia education"	126	90	

Phase 2: Screening Phase

After identifying suitable papers in the selected databases, duplicate entries and unretrievable articles were removed. The remaining articles were then thoroughly re-evaluated to ensure they met the specific requirements of the study.

Phase 3: Eligibility Phase

In the third phase, the collected papers were assessed for eligibility, ensuring they met the inclusion criteria specified in Table 2. This step was crucial to ensure that the data synthesized in this study were both high in quality and reliable.

Table 2. Inclusion and Exclusion criteria

Inclusion	Exclusion
<ul style="list-style-type: none"> Studies were conducted in Malaysia. Participants were from education background. Provided empirical proof which supports the implementation of digital storytelling in the Malaysia education context. The purpose, method, participants, and findings expressed clearly, and intelligibly in the research. 	<ul style="list-style-type: none"> Research was not conducted in Malaysia. Participants were not from education background. Articles were not related to the implementation of digital storytelling in the Malaysia education context. The articles were review articles, book chapter, book reviews, conference papers or conceptual paper.

Phase 4: Exclusion Phase

In this phase, certain articles were excluded from the systematic literature review. The criteria for exclusion are detailed in Table 2. This exclusion process was essential for upholding the quality and reliability of the collected data. A total of 14 articles were identified that provided insights into the implementation of DST within the Malaysian education context as outlines in Table 3.

Table 3. Overview of the selected studies

Author	Study Context	Participants	Method
(Wan Mohd Nasir et al., 2024)	Science	Secondary	Quan
(Ramalingam & Jiar, 2023)	Tamil Language	Primary	Quan
(Said, 2023)	English Language	Primary	Qual
(Nair & Md Yunus, 2022)	English Language	Primary	Quan
(Ramalingam et al., 2022)	Tamil Language	Primary	Mix

(Zain et al. 2022)	Digital Illustration Concept course	Tertiary	Quan
(Mokhtar & Othman, 2022)	Corporate Storytelling course	Tertiary	Quan
(Khalid & El-Maliki, 2020)	Resource and Information Technology	Tertiary	Qual
(Pandian et al., 2020)	Digital Media Literacy	Secondary	Mix
(Har et al., 2019b)	English Language	Primary	Qual
(Har et al., 2019a)	English Language	Primary	Qual
(Rosli, 2019)	English Language	Secondary	Qual
(Dalim et al., 2019)	21st century skills	Tertiary	Quan
(Rong & Noor, 2019)	English Language	Secondary	Quan

Note on abbreviations: Quan = Quantitative, Qual = Qualitative, Mix = Mixed-Methods,

Figure 1 provides a comprehensive visual overview of the four-phase process used in this systematic literature review, aligning with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 checklist. This visual representation enhances comprehension of the step-by-step methodology, from the initial identification to the final inclusion of relevant studies.

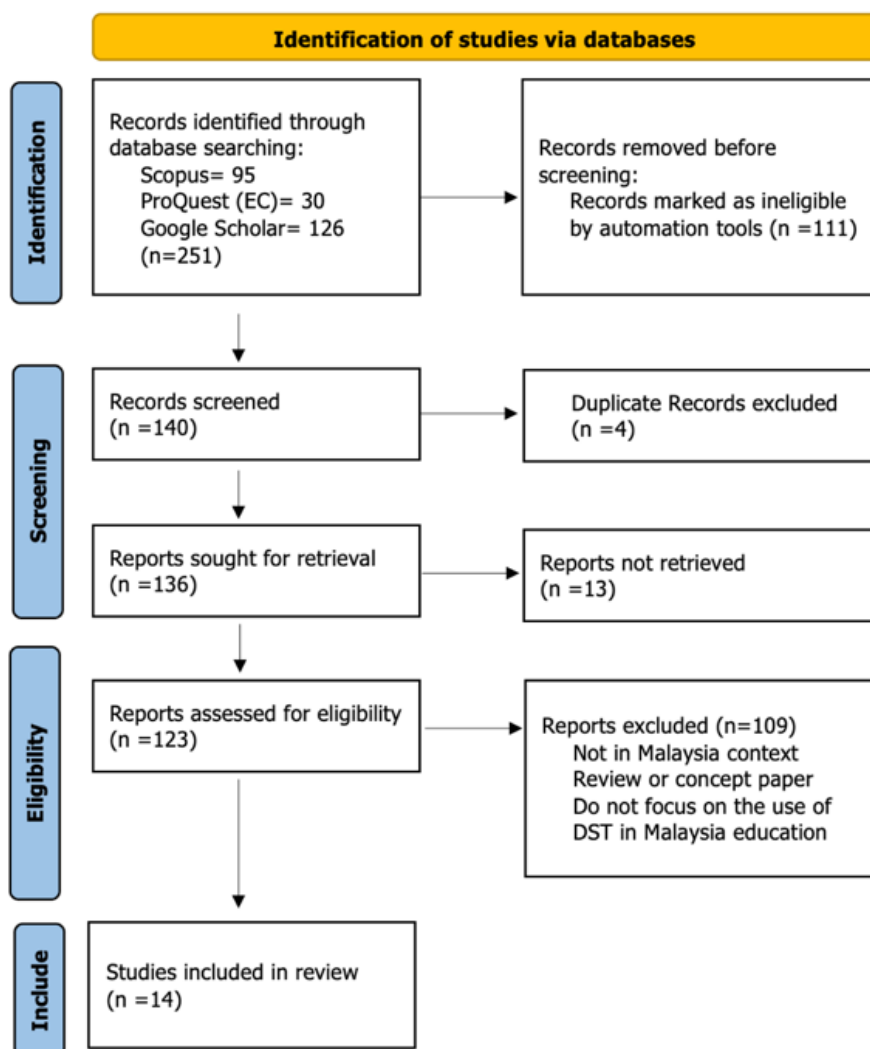


Figure 1. Overview of the four-phase process using PRISMA

FINDINGS & DISCUSSION

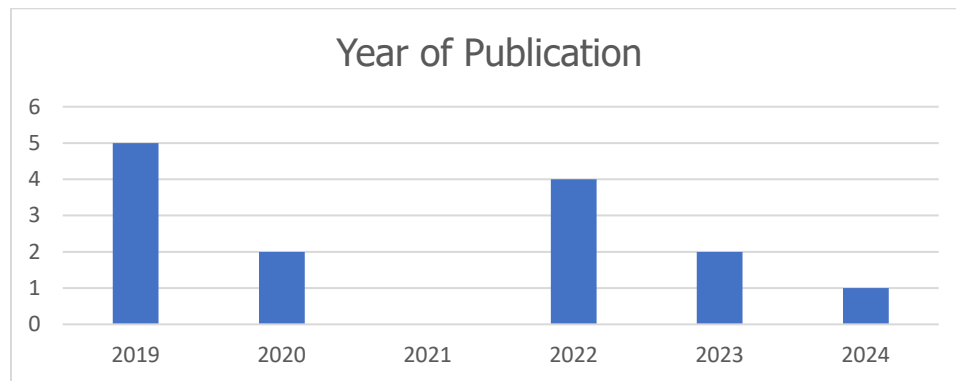
This review contributes to the field by offering a comprehensive picture of how DST is being implemented in Malaysia and how DST can be leveraged to support learning in Malaysia. The finding of the study will be discussed based on research questions.

RQ1: What are the current trends in the use of DST within the Malaysian education context?

This research questions will look into the years of publication, the database of article, study context, participants, and research method employed in the studies.

1. Year of Publication

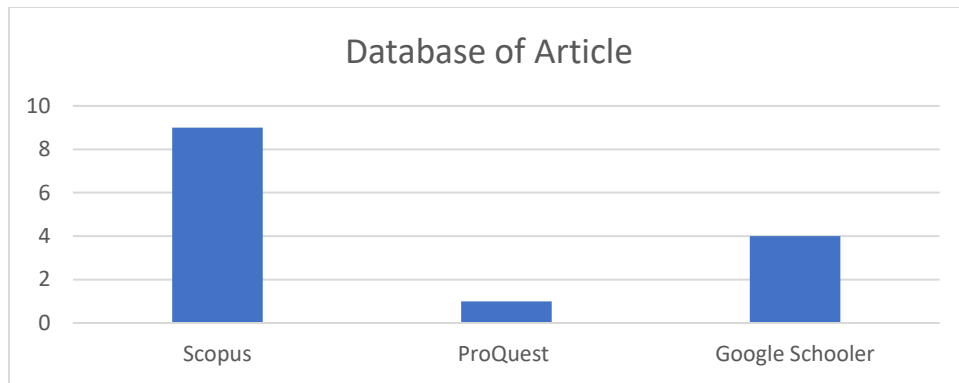
A total of 14 publications were identified over the six-year period, highlighting fluctuating research activity. The data revealed a surge of interest in DST within the Malaysian education context in 2019, followed by a notable decline in 2020 and 2021, possibly influenced by disruptions caused by the COVID-19 pandemic. A surge number of publication found in 2022 reflecting strong periods of interest in DST, likely driven by increasing recognition of the benefits of digital tools in education and by the need to innovate during and after the COVID-19 pandemic. Though the number of outputs in 2023 is lower than the previous year, it shows that there are still interests on DST studies in the Malaysian education context. In 2024, the search is confined to articles up to July, which may restrict the scope of articles available for the entire year.



Bar Chart 1. Year of Publication

2. Database of Article

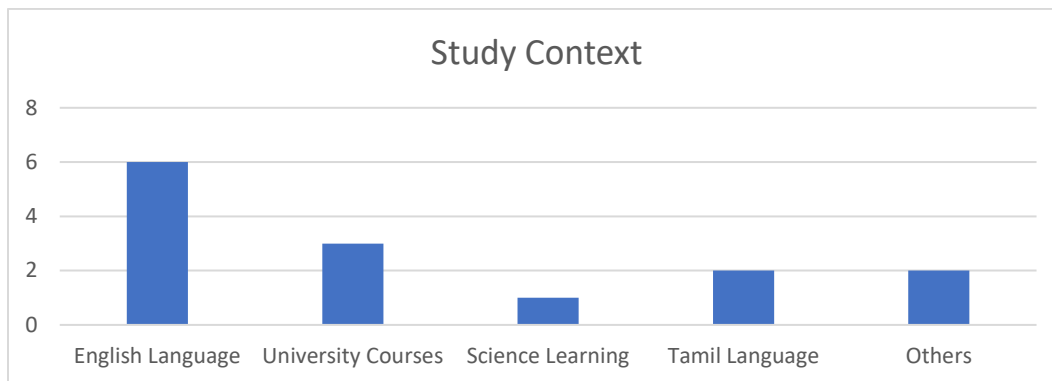
The bar chart illustrates the distribution of the articles across three databases. Scopus database has the highest number of articles, followed by Google scholar, and finally ProQuest (Education Collection). The dominance of Scopus in this systematic review implies that the research is largely of high quality, as Scopus-indexed journals are known for their rigorous peer-review processes and academic standards. The inclusion of articles from Google Scholar and ProQuest adds a broader perspective, offering unique insights particularly on study which are not in Scopus.



Bar Chart 2. Database of Article

3. Study Context

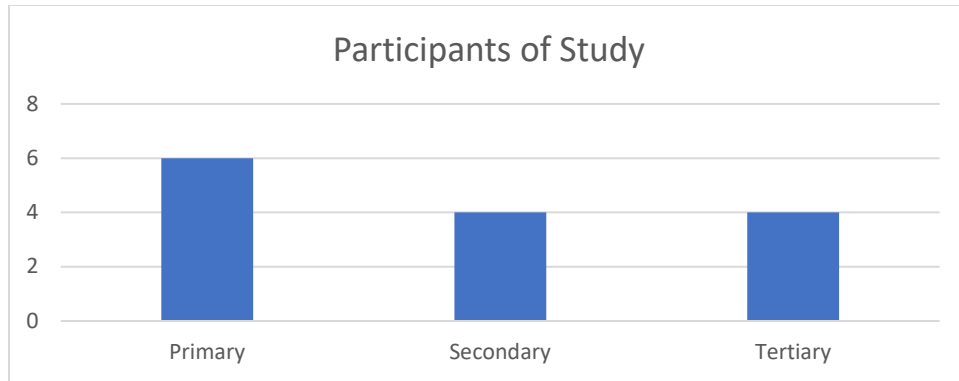
The use of DST in Malaysia education context appears to be distributed across various academic fields as shown in the Bar Chart 3. The highest usage of DST is in the English Language, suggesting that DST is commonly used in English classroom, specifically for enhancing speaking skill (Nair & Md Yunus, 2022), writing skill (Rong & Noor, 2019), vocabulary (Har et al., 2019a) and learning motivation (Said, 2023). Three studies in university courses indicates moderate use, potentially as part of innovative teaching methods or to present complex concepts (Khalid & El-Maliki, 2020; Zain et al., 2022). With 2 instances, DST was employed in Tamil language to improve learners' speaking skill and motivation (Ramalingam et al., 2022; Ramalingam & Jiar, 2023). Finally, DST was also implemented to improve scientific skills (Wan Mohd Nasir et al., 2024) as well as enhance understanding on digital media literacy (Pandian et al., 2020) and 21st century learning (Dalim et al., 2019). This implies that while not widely dominant in certain areas, it is being explored in a range of other disciplines. Overall, DST in Malaysia education seems to have its strongest application in language-related fields, especially English and Tamil.



Bar Chart 3. Study Context

4. Participants of Study

DST is widely applied across all levels of education in Malaysia, with a particular emphasis on primary school learners. DST is most heavily utilized at the Primary level indicating its prominence in engaging younger learners. The use of DST at the Secondary and Tertiary level shows a moderate presence, suggesting its support to the development of digital literacy skills that are increasingly important in the modern workforce. In sums, this suggests that it is seen as an effective tool for engaging younger learners, while its consistent application at the secondary and tertiary levels highlights its adaptability and potential for fostering critical thinking, creativity, and digital literacy as students advance through their education.



Bar Chart 4. Participants of Study

5. Research Methods

The quantitative research method is the most frequently used in studies related to DST suggesting that researchers prefer to rely on measurable data, statistical analysis, and objective evaluation to assess the impact of digital storytelling. Quantitative methods had utilized survey (Dalim et al., 2019; Mokhtar & Othman, 2022; Zain et al., 2022) and quasi-experimental designs (Nair & Md Yunus, 2022; Ramalingam & Jiar, 2023; Wan Mohd Nasir et al., 2024) to gather the data. The use of qualitative research methods indicates that researchers also explore the subjective, experiential, and contextual aspects of DST in Malaysia education. All the studies had employed a case study design (Har et al., 2019a, 2019b; Khalid & El-Maliki, 2020; Rosli, 2019; Said, 2023) to gain insights into how students and teachers perceive the value of digital storytelling. The use of mixed-method approach implies that only a small proportion of studies (Pandian et al., 2020; Ramalingam et al., 2022) combine both quantitative and qualitative methodologies. Mixed methods can provide a comprehensive understanding of digital storytelling by integrating the statistical rigor of quantitative analysis with the detailed insights from qualitative research. The preference for quantitative methods suggests that researchers are focused on determining the measurable impact of digital storytelling, possibly driven by the need for empirical evidence to support educational policy decisions or curriculum changes. While this provides valuable evidence on its effectiveness, there is room for more qualitative and mixed-method studies that explore the deeper, contextualized experiences of both educators and learners. Expanding the use of these methodologies could lead to a more holistic understanding of how digital storytelling functions across various educational levels in Malaysia.



Bar Chart 5. Research Method

RQ2: How is DST being implemented across various educational levels in Malaysia?

1. Duration of the study

Studies with specified durations tend to range between 4 and 14 weeks. The shortest duration (4 weeks) was a pilot study (Ramalingam et al., 2022) while the longest duration (14 weeks) was conducted in one of the university courses (Mokhtar & Othman, 2022). The 8 to 10 weeks studies' duration are more commonly used in DST research in Malaysia. This duration is likely sufficient to observe more concrete learning outcomes, such as in enhancing speaking skill (Nair & Md Yunus, 2022; Ramalingam & Jiar, 2023) and vocabulary (Har et al., 2019a). Some of the studies focus on gathering perceptions (Dalim et al., 2019; Zain et al., 2022) which suggests a strong interest in understanding participants' subjective experiences with DST. Gathering participants' perceptions from different level of educations is crucial to ensure that DST remains responsive to the needs and preferences of learners and educators.

2. Implementation process of the study

DST activities in Malaysian education were implemented for multiple purposes. The studies demonstrate various approaches to incorporating DST, from active participation in video creation to the use of pre-developed digital content for skill improvement.

A substantial portion of the studies aims to investigate the effectiveness of DST as an intervention in learning by directly involving participants in the story creation process. Studies by Wan Mohd Nasir et al. (2024) and Said (2023) centre on the video creation process, which required the participants to actively involved in the process of planning and creating video-making. Another study by Nair & Md Yunus (2022) utilized Toontastic 3D, a digital story application. The research participants would discuss in groups via a break-up room (Google Meet) and create 6 digital stories individually. Studies by Khalid & El-Maliki (2020) and Pandian et al. (2020) further emphasize the development of technical skills by having participants use various video editor software such as Powtoon, Pixtoon, and Plotagon to create their stories.

In contrast to the active creation of digital stories, some studies use ready-made or self-developed digital stories for participants to engage with. Studies like those by Ramalingam & Jiar (2023) used the KaniMani Storytelling Mobile Application to improve speaking skills by listening to pre-developed stories. Similarly, Har et al. (2019) used a tablet-based application featuring pre-developed digital stories to help participants improve their vocabulary. Some of the studies were carried out to find the perceptions of the participants on the effectiveness of DST as part of teaching and learning activities for 21st century learning (Dalim et al., 2019) and to enhance understanding on selected topics in the Digital Illustration course (Zain et al., 2022).

The implementation of DST in Malaysian education is diverse and multi-purpose, aiming to improve language acquisition, communication skills, digital literacy, and creative thinking. While the majority of studies emphasize its role as an intervention in active learning, where participants are directly involved in the creation process, some studies focus on the passive use of digital stories. The combination of active and passive approaches ensures that DST remains a flexible and versatile tool in education, adaptable to different learning goals and contexts.

RQ3: What are associated challenges with the implementation of DST in the Malaysian education system?

The implementation of DST in Malaysian education faces several significant challenges, including time constraints, insufficient digital skills, limited technical infrastructure, and inadequate content knowledge related to digital video production.

One of the most significant challenges is time constraint. The short intervention within the formal school syllabus restricted the depth and richness of the storytelling process (Wan Mohd Nasir et al., 2024). Participants often lack sufficient time for discussions, brainstorming, and in-depth content development, leading to simpler or less creative story content. Many educators perceive DST as time-consuming and unsuitable for their students due to the complexity of managing both content and technical aspects (Said, 2023). Given that DST relies heavily on detailed narratives and multimedia integration, yet often limited by a packed school curriculum.

A recurring challenge is the lack of digital skills among teachers. Some teachers and students prefer traditional methods, such as using a dictionary, over DST due to limited technological proficiency (Har et al., 2019a). Teachers without sufficient technical expertise in video editing software and multimedia tools struggle to guide students effectively through the storytelling process (Dalim et al., 2019; Rong & Noor, 2019). This lack of technological fluency creates a significant barrier to the successful integration of DST, which requires both narrative and technical skills to be effective.

Insufficient technological infrastructure is another significant barrier. Many schools lack the necessary tools, such as projectors, laptops, tablets, and video editing software, which are crucial for implementing DST (Har et al., 2019b; Said, 2023). In addition, internet connectivity issues disrupt the smooth execution of digital storytelling activities, particularly when they rely on online platforms or applications (Ramalingam et al., 2022). This lack of resources forces schools to rely on limited or outdated technology, preventing from fully realizing the potential of DST.

Some participants were not knowledgeable in the content of the digital video which caused them to do extensive research on the topic before creating the video (Khalid & El-Maliki, 2020). Participants also struggled with evaluating the relevance and usefulness of information for their digital stories, as well as expressing their ideas through different modes of visual communication (Pandian et al., 2020).

In conclusion, the successful implementation of digital storytelling (DST) in Malaysian education is hindered by a range of significant challenges, including time constraints, inadequate digital skills, limited technological infrastructure, and insufficient content knowledge related to digital video production. Overcoming these barriers is crucial to unlocking the full potential of DST as a dynamic and transformative educational approach in Malaysia education.

CONCLUSION

This study set out to examine three key aspects of DST in the Malaysian education context: its trends, implementation, and challenges associated. The analysis of DST trends in Malaysia reveals a growing interest in using DST as a pedagogical tool across various educational levels. The implementation of DST in Malaysia's education system varies widely in terms of approach and purpose. In many cases, DST is used as an intervention tool, where students are actively engaged in creating digital stories while in other instances, educators utilize pre-developed digital stories to enhance learning. Despite its potential, the implementation of DST in Malaysia faces several significant challenges such as time constraints, insufficient digital skills, limited technical infrastructure, and inadequate content knowledge related to digital video production.

In conclusion, while DST shows immense promise as a pedagogical tool in Malaysia, its full potential remains constrained by significant challenges. Addressing these barriers, ranging from time limitations and insufficient digital skills to technical infrastructure and content knowledge, will be critical in unlocking the transformative power of DST in education. By overcoming these hurdles, Malaysia can harness DST to foster deeper learning, creativity, and engagement across its educational landscape.

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THE PERCEPTIONS OF SMK PEREMPUAN LIKAS STUDENTS ON THE IMPACT OF SOCIAL MEDIA ON LANGUAGE LEARNING

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ABSTRACT

The study investigates the perceptions of SMK Perempuan Likas students on the impact of social media on their language learning and the challenges they encounter when using social media as a tool for language learning. This study employed a mixed-methods approach, where 100 Form 4 students were involved in completing the questionnaires and a total of 5 students participated in focus group discussion. The quantitative data were analysed using SPSS to provide descriptive statistics, while the qualitative data were subjected to thematic analysis. Quantitative results indicated majority of students (56%) have a positive perception of the impact of social media on their English language skills, with another 42% acknowledging some beneficial effects, and only 1% reporting a negative impact. Students reported the most enhanced skills through social media as speaking (25%) and reading (20%), followed by pronunciation and communication (15% each), listening and spelling (9% each), and writing (7%). Qualitative findings reveal several challenges, including difficulties understanding abbreviations, pronunciation, and complex phrases. Participants also highlighted negative aspects of social media such as distractions, exposure to inappropriate content, and the potential for bullying. The findings suggest that educators should develop strategies to leverage social media's benefits and mitigate its challenges. Policymakers are encouraged to implement digital literacy programs to help students navigate social media effectively. This balanced approach aims to maximise the positive impacts of social media on language learning while minimising its challenges. The study contributes to the growing body of literature on digital learning tools and provides practical recommendations for educators and policymakers.

Keyword(s): *ESL learning, social media, perceptions, English language skills.*

INTRODUCTION

Digital tools and platforms are constantly incorporated in today's educational environment to enhance and sometimes replace traditional teaching methods. Yarychev and Mentsiev (2020) acknowledge the advancement of modern educational practices and the changing role of communication and other data advances. Thus, students are not entirely reliant on traditional textbooks; rather, they can readily integrate Innovation and Communication Technology (ICT) tools into their academic pursuits, ushering in a new era of learning.

During the global pandemic, the emergence of technology in education became evident. The education sector are being revamped completely especially after the sudden closure of educational institution around the world, including in Malaysia. This leads to the technological learning environments, with teachers and students having to adapt to the sudden changes in order to enable remote learning. A significant effect on educational systems around the world can be seen as educators and students having to adjust with the demands of the new norms. This was supported by Kamarudin et al. (2023) in their research that the Movement Control Order (MCO) required immediate closure of all facilities. As a result, the educational system must respond quickly to emerging trends. Teachers and students are unprepared for these rapid changes, so teaching and learning must be done in new and different ways. These sudden changes led to surprising benefits, especially for students and teachers' technology skills.

Furthermore, the expansion of social media as a language-learning tool has taken place in the learning dynamics. Students nowadays are equipped with modern learning experiences that are integrated mainly with social media platforms such as Facebook, TikTok, Twitter, YouTube, and more. This means that these platforms not only open up to communicating and information sharing, but also provide an effective way to learn the language. With the existence of social media's diverse structure, it leads to providing the students with numerous opportunities to interact with the language, resulting in a new environment that goes beyond traditional classroom boundaries that create a space for them to gain more confidence and motivation. This statement is supported by Haque (2023), where the researcher stated the use of social media in language learning has been shown to boost students' confidence and motivation. Therefore, this study is aiming to address two research questions.

- i. How do students at SMK Perempuan Likas perceive the impact of social media on their language skills?
- ii. What challenges do these students encounter when using social media for language learning?

LITERATURE REVIEW

Students' Perception of Social Media's Impact on Language Skills

Platforms such as Facebook, Instagram, and language learning apps offer various opportunities for practice, including real-time communication, exposure to diverse linguistic inputs, and interactive exercises. These features help students engage with the language in a meaningful way, facilitating a more dynamic and practical learning experience compared to traditional methods. Their language learning process is enhanced by the opportunity to communicate with native speakers, take part in conversations, and access a wide range of multimedia resources.

Studies by Al Jahromi (2020), Md Yunus et al. (2019), Sathiyaseelan (2021), and Safitri et al. (2022) consistently demonstrate that students' perceptions of social media's impact on language skills—particularly when learning English—are positive. Students' positive perceptions are evident in the numerous studies, acknowledging the improvement of several language skills, including writing, vocabulary, communication, reading, speaking, listening, and grammar. Social media is valued by them because it provides access to information and ideas, enhances writing abilities, boosts motivation and engagement, and promotes group learning. Students also see social media as a tool that helps them feel less anxious and more confident about learning the English language. These findings highlight the perceived educational benefit of social media, supporting the idea that it might help improve language skills.

Challenges of Social Media in Language Learning

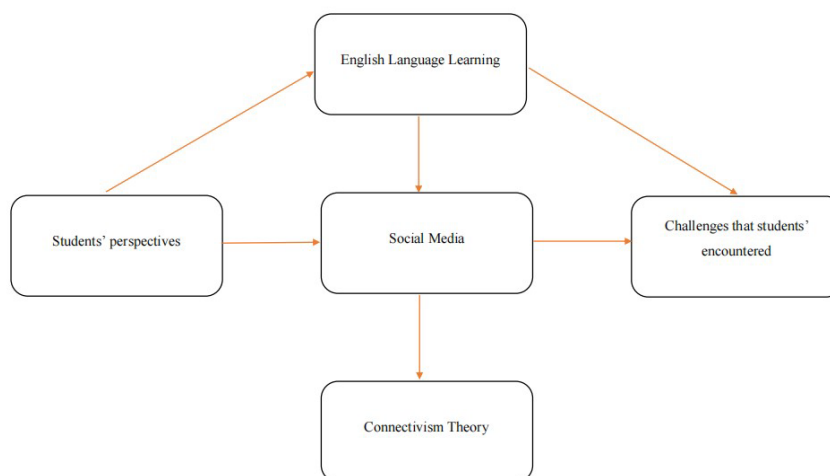
There are numerous advantages to using social media for language learning, including exposure to a variety of linguistic contexts and increased opportunities to improve proficiency through language practice. However, the drawbacks and limitations of using social media to learn a language should be considered.

Poor grammar on social media can negatively impact language ability (Sha & Pathan, 2018). What is more surprising is that how social media users are normalising grammatical errors and thinking that it should be the norm on social media. Their language is heavily populated with slang terms and abbreviations that other learners may be confusing to other language learners. Sha & Pathan (2018) also stated that people might spend too much time on social media, which can lead to an unhealthy lifestyle due to the addictive nature of social media. As a result of this, people are still doubting whether social media have the potential to become a medium for language learning as people continue to struggle and to keep focus, and it can even affect their well-being.

Other than that, Safitri et al. (2022) highlighted the challenges students face when using social media to learn the language. The findings revealed that students are exposed to inappropriate materials and content on social media. The effectiveness of language learning could be hindered as students may come across irrelevant, deceptive, or offensive content, leading to a negative influence on the quality of language exposure.

Social media can still be a helpful tool for language learning when used properly, despite these challenges. By offering direction and encouragement throughout the language-learning process, teachers and language instructors can also assist students in overcoming these obstacles.

Figure 1: Conceptual Framework



Connectivism in Education

Connectivism has some common ground with traditional learning theories like cognitivism, but it brings fresh ideas and approaches suited for the digital age. It reinforces how group learning and working together is important for education. In this model, students take charge of their own learning journey, with teachers stepping in as guides and supporters. Additionally, it recognises the essential role of digital tools in facilitating education and widening new opportunities through learning, across a diverse range of settings.

To understand the link between Connectivism and traditional learning theories, it is important to recognise that Connectivism does not entirely dismiss older educational approaches. Instead, it builds on and adapts them for today's digital world. This perspective values personal learning experiences and cognitive processes while highlighting the significance of social connections, teamwork, and digital tools in education. Combining Connectivism with the traditional theories helps educator design learning spaces that are more adaptable and responsive in meeting students' diverse needs in a world driven by technology.

Connectivism stresses the importance of connecting with our peers and online communities, and digital tools when acquiring a language through social media platforms. As explored by Zheng et al. (2023), Connectivism Theory suggests that social media can strengthen relationship among users, enrich online learning activities, encourage cooperation, and increase academic motivation. The ever-evolving nature of social media aligns perfectly with Connectivism because it underscores the skill of navigating and understanding a dynamic information landscape.

METHODS AND SAMPLING

This is a mixed-method research approach. The present study were conducted at SMK Perempuan Likas, with a total of 100 Form 4 as the participants for the survey and 5 students for focus group discussion were chosen using a convenience sampling. The questionnaire items were adopted from Al Jahromi (2020). It consist of three sections - Section A: Demographic, Section B: Type and Frequency of social media use, and Section C: Relationship between social media and English language learning.

The questionnaire link was shared to the participants through Whatsapp. The questionnaire contains 26 5-Likert scale items in total and two items, respectively Item 27 and 28 are just standard closed-ended questions. Focus group discussion was conducted when the researcher and the selected students were available. It was done at the school library to ensure a comfortable and noise-free environment.

Data collected from the survey were analysed by using the Statistical Package for Social Science (SPSS), specifically using the descriptive statistics. Descriptive statistics include percentage, frequency, mean, and standard deviation. As for the focus group discussion, thematic analysis was involved to interpret the data. The discussion was recorded, then transcribed, and analysed using thematic analysis.

FINDINGS

Participants Demographic

Age, Gender, Race, Level of interest in the English subject, and most frequently used social media networks are the considered demographical variables of the study. Participants demographic information is presented below.

Table 1: Participants' demographic characteristics

Demographic Variable	Frequency	Percentage
Age		
16 years old	100	100%
Gender		
Female	100	100%

Table 1 shows the demographic information of the participants who are involved with the survey for the study. The study included 100 Form 4 students from SMK Perempuan Likas, which is an all-girls secondary school. All of the participants were females and aged 16 years old.

Table 2: Demographic Information of Respondents based on Race Groups

Race	Frequency	Percentage
Malay	37	37%
Chinese	5	5%
Indian	0	0%
<i>Bumiputera</i>	36	36%
Others	22	22%

Table 2 shows most of the participants are Malay (37%), followed by *Bumiputera* (36%), others (22%), and Chinese (5%).

Table 3: Level of Interest in the English subject

Level of interest in the English subject	Frequency	Percentage
Very Interested	26	26%
Interested	46	46%
Moderate	23	23%
Less Interested	3	3%
Not Interested	0	0%

Table 3 shows 26% of the participants classified as "Very Interested" and 46% as "Interested." Only 3% of the participants are "Less Interested," and none are "Not Interested." A smaller proportion, 23%, demonstrates a "Moderate" level of interest.

Table 4: Most Frequently Used Social Media Networks

Social Media Networks	Frequency	Percentage
Facebook	1	1%
Instagram	15	15%
Telegram	1	1%
TikTok	50	50%
Twitter	1	1%
Whatsapp	22	22%
YouTube	10	10%

Table 4 reveals that TikTok (50%) is the social media site most commonly used by students. Then, followed by WhatsApp with 22%, while Instagram is used by 15% of participants. YouTube has 10%, and Facebook, Twitter, and Telegram are each used by only 1%.

How do students at SMK Perempuan Likas perceive the impact of social media on their language skills?

The quantitative data that were examined with SPSS are shown in this section. In order to specifically address RQ1, descriptive statistics were employed and the data were displayed in tables below.

Table 5: Number of hours spent on social media networks

Number of hours spent on social media	Frequency	Percentage
2 to 3	31	31%
3 to 4	30	30%
5 hours and more	29	29%
Doesn't use social media	1	1%
Less than an hour	9	9%

Table 5 reveals that 31% of students spend two to three hours, while 30% spend three to four hours daily to social media usage. A substantial proportion of students, specifically 29%, spend five hours or more on social media. Furthermore, only 9% spend less than an hour, and a mere 1% do not use social media at all, highlighting its significant role in their daily routines.

Table 6: Social Media Impact on Writing

Descriptive Statistics			
	N	Mean	Std. Deviation
6. Social media influences my style of writing.	100	3.56	.925
7. Social media introduces to modern writing patterns.	100	3.84	.788
14. Social media helps me write better in English.	100	3.99	.674
20. I learn English through extensive writing on social media networking platforms.	100	3.61	.803
Valid N (listwise)	100		

Table 6 shows the impact of social media on writing based on responses from 100 participants. They somewhat agree that social media affects their writing style (mean = 3.56, SD = 0.925) and helps them learn English through writing a lot (mean = 3.61, SD = 0.803). They agree more strongly that social media introduces modern writing patterns (mean = 3.84, SD = 0.788) and improves their English writing skills (mean = 3.99, SD = 0.674). This indicates that participants generally agree that social media positively impacts their writing skills. They agree most strongly that it has a positive impact on their English writing skills.

Table 7: Social Media Impact on Vocabulary Learning

Descriptive Statistics			
	N	Mean	Std. Deviation
4. Social media improves my knowledge about new terminologies in English.	100	4.37	.614
5. Social media helps vocabulary development.	100	4.05	.730
15. I derive most of the terms I use from social media.	100	3.89	.737
Valid N (listwise)	100		

Based on the table above, it indicates that the respondents generally believe social media has a significant positive impact on their vocabulary learning. This is because the statements about social media's impact on learning have high mean scores, with Statement 4 having a mean of 4.37 and a standard deviation of 0.614, Statement 5 having a mean of 4.05 and a standard deviation of 0.730, and Statement 15 having a mean of 3.89 and a standard deviation of 0.737. These high mean scores suggest that respondents agree with the positive effects of social media on learning new vocabulary, despite some variability indicated by the standard deviations.

Table 8: Social Media Impact on Communication Skills

Descriptive Statistics			
	N	Mean	Std. Deviation
2. Social media changes the way people communicate and share information.	100	4.37	.820
3. Social media improves the way people interact globally.	100	4.05	.936
13. Social media improves English language communication skills.	100	4.13	.761
Valid N (listwise)	100		

The table above indicates that respondents perceive social media to have a positive impact on communication skills, particularly in English. Statement 13 has the highest mean score of 4.13 with a standard deviation of 0.761. This suggests that most respondents agree that social media plays a significant role in enhancing their English communication abilities. In contrast, the mean scores for statements about social media changing how people communicate and share information (3.79) and improving global interaction (3.65) are lower, indicating a weaker but still positive consensus. These findings suggest that, while social media is perceived to be beneficial for communication in general, it is particularly effective in improving English language skills.

Table 9: Interactive communication on social media

Descriptive Statistics			
	N	Mean	Std. Deviation
19. I try to enhance the language ability by communicating with foreign people via social media networks.	100	3.82	.914
21. I use the live chat rooms on social media networks to improve my English language media networking platforms.	100	3.32	.851
22. I force myself to learn language by writing sentences on social media networking discussion groups.	100	3.21	.902
Valid N (listwise)	100		

Table 9 shows respondents believe that interactive communication on social media is beneficial for improving language skills. Statement 18 has the highest mean score of 3.82 and standard deviation of 0.914, indicating that many respondents actively communicate with foreign users to improve their language skills. Meanwhile, Statement 21 has a mean score of 3.32 and a standard deviation of 0.851, while Statement 22 has a mean of 3.21 and a standard deviation of 0.902. These scores indicate a moderate level of agreement, indicating that, while respondents are somewhat involved in these activities, direct communication with foreign users is the most commonly used strategy for language enhancement on social media.

Table 10: The Use of Translation Tools on Social Media

Descriptive Statistics			
	N	Mean	Std. Deviation
1. I often use translation websites.	100	3.26	.860
23. I use applications through social networks related to language learning.	100	3.65	.833

24. I use translation features on social media networks.	100	3.58	.819
Valid N (listwise)	100		

Table 10 illustrates that respondents frequently use translation tools on social media and other platforms to help them learn languages. The mean score of Item 1 is 3.26, Item 23 is 3.65, and Item 24 is 3.58. This indicates these tools are helping students to learn the English language.

Table 11: English Learning Platforms and Links

Descriptive Statistics			
	N	Mean	Std. Deviation
16. I follow English language teachers through social media to improve the target language.	100	3.47	.881
17. I follow online platforms on social media networks to learn the English language.	100	3.56	.743
19. I take tests in English to evaluate my level in the target language.	100	3.56	.891
23. I use applications through social networks related to language learning.	100	3.65	.833

Table 11 found that students use social media networks and online platforms to improve their English language skills. Item 26 has the highest mean score, with 3.88, indicating that online platforms are beneficial for English learning.

Table 12: Negative Impacts of Social Media on English

Descriptive Statistics			
	N	Mean	Std. Deviation
8. Social media exposes students to abbreviations and inaccurate spellings which later have negative impacts on them during examinations.	100	3.46	1.058
9. Social media contributes to mass failure of students in English language and other English related courses or subjects.	100	2.61	.963
10. Social media encourages examination malpractices in schools.	100	2.74	1.041
11. Social media is a wastage of students' time that should be wisely invested in academic and profitable ways.	100	3.64	.969
12. Social media encourages the use of foul language and cyberbullying.	100	3.00	1.279
Valid N (listwise)	100		

Table 12 shows that students have mixed feelings about the negative impacts of social media on their language skills and school performance. They somewhat agree that social media exposes them to bad spellings and abbreviations, which can hurt their exam performance, with a mean score of 3.46 out of 5. They are less sure that social media causes many students to fail English, with a lower mean score of 2.61. They also think social media moderately encourages cheating in exams (mean score 2.74). The strongest agreement is that social media wastes time that could be used for studying, with a mean score of 3.64. Lastly, they are neutral about social media

promoting foul language and cyberbullying, with a mean score of 3.00. Overall, students see some negative effects of social media, especially on time management and exposure to bad language.

Table 13: English Language Skills Enhanced on Social Media

English language skills enhanced on Social Media	Frequency	Percentage
Reading	20	20%
Writing	7	7%
Listening	9	9%
Speaking	25	25%
Spelling	9	9%
Pronunciation	15	15%
Communication skill	15	15%

Table 13 indicates that SMK Perempuan Likas students perceive speaking (25%) and reading (20%) as the most enhanced English language skills through social media, highlighting the significance of interactive features and written content on these platforms. Pronunciation and communication skills are also notably improved, each at 15%, suggesting the value of audio-visual and real-time interaction. Listening and spelling are enhanced to a lesser extent, each at 9%, while writing is the least impacted skill at 7%. Overall, this reflects the diverse ways in which social media supports language development, with a strong emphasis on interactive and communicative aspects.

Table 14: Overall Perception of the Effects of Social Media on English

Overall Perception of the Effects of Social Media on English	Frequency	Percentage
Positive	56	56%
Some effects	42	42%
No effect	1	1%
Negative	1	1%

The data on overall perceptions of the impact of social media on English language learning among SMK Perempuan Likas students reveals a predominantly positive outlook. A majority of students (56%) view the impact as positive, indicating that more than half believe social media significantly benefits their language skills. Another substantial portion (42%) acknowledges some effects, suggesting that they recognize certain benefits, though perhaps not as extensively. A very small fraction of students (1%) perceive no effect, implying minimal influence on their language learning. Similarly, only 1% have a negative perception, indicating that virtually no students feel social media detracts from their language acquisition. This overwhelmingly positive and somewhat positive perception underscores the valuable role social media plays in enhancing language skills among the students.

What challenges do these students encounter when utilising social media as a tool for language learning?

The second research instrument, the focus group discussion, serves to provide detailed insights and contribute to answering the research questions regarding the perception of SMK Perempuan Likas students on the impact of social media on language learning. By using the Thematic

Analysis, there were 5 themes identified, namely, Impact of Social Media on Language Learning, Challenges in Language Learning through Social Media, Negative Aspects of Social Media, Coping Strategies and Solutions, and Recommendations for Effective Use.

Theme 1: Impact of Social Media on Language Learning

Participants highlighted how social media has positively influenced their English language skills. Early exposure to English through cartoons, social media community, and educational influencers helped expand their vocabulary and improve their speaking, reading, and listening skills. Participant 1 stated, "It started when I was 6 years old. I actually learned most of English from watching cartoons from my mom's phone." Participant 2 stated, "Social media has helped me improve my English in many aspects such as speaking, reading, and listening. I interacted with people from all over the world to get to know how they pronounce some English words." Participant 4 stated, "Using social media has helped me to improve my English language skills, such as speaking and writing. Many educational influencers have inspired me to learn English more."

Theme 2: Challenges in Language Learning through Social Media

Despite the benefits, participants encountered several challenges, including difficulties with understanding abbreviations and short forms, and comprehending complex phrases, and pronunciation. Participant 1 stated, "The abbreviations and short forms that are used come across as confusing." Participant 2, "I find it difficult to understand some phrases" and Participant 4, "The main challenge I face was having a hard time pronouncing certain words."

Theme 3: Negative Aspects of Social Media

Participants also discussed how social media can be distracting and expose them to negative experiences such as bullying and inappropriate content, which can hinder their learning process. Participant 1 stated, "Social media is designed to distract you with notifications." Participant 4 stated, "I receive a lot of mockery and judgement from different people." While Participant 5 stated, "I will come across some videos of people speaking English, and sometimes they would use some bad words."

Theme 4: Coping Strategies and Solutions

To overcome these challenges, participants used strategies like limiting social media usage and verifying information through Google or ChatGPT. Participant 1 stated, "I definitely try to limit my time on social media." Participants 2, "I deal with inaccurate information by double checking the information or phrases through Google or ChatGPT."

Theme 5: Recommendations for Effective Use

Based on the focus group discussion, the participants have a few suggestion for social media effective use. The suggestions include using language learning apps, following teachers and educational influencers, and using social media platforms creatively for self-learning. Participant 1 suggested, "Find language learning apps such as Duolingo and also find teachers through YouTube or TikTok." Participant 4 suggested, "Find educational influencers.", while Participant 5 suggested, "Look more to learning videos than just a website or some image."

DISCUSSION

Perceptions of SMK Perempuan Likas' Students of the impact of social media on their language skills

Based on the results of a survey given to Form 4 students, it is clear that most of them believe social media can help them improve their English language proficiency, especially in speaking, reading, pronouncing words correctly, and communicating. The survey results revealed a generally positive perception of social media's impact on language skills.

In addition, these findings were also validated by qualitative data, specifically focus group discussions, in which participants emphasised the positive influence of social media on their English skills. Participant 2 reported, "Social media has helped me improve my English in many aspects such as speaking, reading, and listening". When asked whether they find it difficult to stay motivated or focused on English language learning when using social media, most of the participants stated they did not find it difficult to stay motivated or focused. Participant 4 shared that she used to struggle with staying focused but has now overcome this issue. "I found it difficult to stay motivated because English is a very hard language to learn since there are so many grammars and different meaning to learn. But now, I overcome English language and it's my biggest achievements".

A total of 42% of students identified some positive effects by social media on improving language from quantitative data. Overall, more students (56%) said it had a positive impact on them. These results consistent with other research discussed in the literature review section, which indicates that students generally have positive perceptions on how learning languages can be helped by social media. Al Jahromi (2020), Md Yunus et al. (2019), Sathiyaseelan (2021) and Safitri et al.(2022) all agree that using social media can enhance certain aspects of linguistic skills such as writing skills, vocabulary acquisition, communication techniques, reading comprehension abilities spoken interactions capacity together with grammar refinement.

To summarise, the results provide a detailed response to this research question indicating that students perceive language skills in general and particular aspects of language skills has been strengthened by social media. These perceptions are more credible and relevant because they are consistent with similar research.

Challenges encountered when using social media as a tool for language learning.

Despite the positive perceptions, students are also experiencing challenges when using social media as a tool for language learning. The theory of Connectivism acknowledges that learning surroundings are multifaceted and ever-changing, thus requiring students to navigate through complex information landscapes constantly (Young, 2024). Quantitative and qualitative data were produced from focus group discussions and surveys, revealing challenges such as spelling inaccuracies, improper pronunciation, difficulties in decoding abbreviations, and struggling with complicated phrases.

The survey results reported that students also believe that they can be negatively influenced by social media, with mean = 3.46, and waste time that could be spent for studying, with mean = 3.64. In line to this, the focus group discussion participants also expressed their frustration with the use of accents that is different from the one that they usually use and hear and also the use of abbreviations on social media platforms. This has become as one of their primary concerns as they felt like it prevents the progression of their language learning. This sentiment is supported by research conducted by Sha & Pathan (2018), which found that poor

grammar standardisation and shortened words contributed to social media usage's negative effects on language proficiency levels.

The researcher also identified some challenges that were mentioned by the participants during the discussion. The noted challenges included the likelihood of being bullied, influenced and encountering inappropriate content. Based on the literature, Safitri et al. (2022) emphasised the difficulty in engaging language learners because of inappropriate content and interruptions. Furthermore, social media can lead students in getting addicted due to the excessive use of social media (Sha & Pathan, 2018). The participants said that these challenges can be distracting and damaging to the learning progress, preventing them from being able to focus on keeping up with their language goals.

Overall, results of the study supported students' favourable perception that social media can be an instrument in learning language as indicated by Al Jahromi (2020) investigation. Besides, the outcomes of this study also showed that social media is used by students as a tool to learn English because they have been facilitated with engaging and interesting materials.

CONCLUSION

In conclusion, the findings of this study revealed that SMK Perempuan Likas students, specifically the Form 4 students, perceive social media as beneficial for their language learning even though some of them are facing some challenges, such as easily distracted and having a hard time in pronouncing some words. Both of the research objectives are successfully achieved with the help of appropriate research instruments. The findings emphasise the incorporation of social media in the classroom settings, especially for language learning. In the meantime, the researcher acknowledged the limitations of the use of social media, where educators have to structure a focused guidelines that can minimise the challenges that may be encountered. Future research is recommend to extend the duration of study period and increase the sampling population to gain more comprehensive data.

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THE IMPACT OF INSTAGRAM-BASED E-PORTFOLIO ON STUDENTS' MOTIVATION IN WRITING

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ABSTRACT

This study aims to investigate the impact of utilizing Instagram as a platform for creating and sharing e-portfolio on students' motivation in the context of writing. As the digital landscape continues to advance, teachers seek innovative approaches to engage students in English classroom and enhance their language skills. Instagram, a popular social media platform known for its visual-centric nature, serves as a unique medium for showcasing and sharing individual work. The research employs a qualitative research design, combining multi-method approach, incorporating open-ended questionnaire, classroom observation, content analysis of students' e-portfolios and students' reflection essays, to assess the motivational effects of Instagram-based e-portfolios on students. The participants of this study include a sample of students in SM St. Peter Telipok, Kota Kinabalu, Sabah. The study explores the impact of visual and interactive elements on students' motivation, self-efficacy, and overall writing performance. This study seeks to enrich and add to the existing literature on progressive teaching methods by shedding light on the motivational factors linked to the integration of Instagram-based e-portfolios. Ultimately, understanding the impact of such platforms on students' motivation in writing can inform educators and curriculum developers in designing effective and engaging strategies for enhancing writing skills in the digital age.

Keyword(s): *ESL Writing, E-portfolio, Instagram-based Learning, Socialmedia Based Learning, Motivation.*

INTRODUCTION

In a recent study by Bora (2023), building up a skillful writing skill is mentioned to not only aids students in their academic endeavors, but also assists employees in effectively expressing their ideas. As writing skills continue to be essential in the present academic and professional settings, educators are keenly interested in exploring innovative methods to enhance students' motivation and proficiency in this fundamental skill.

It has been a common thing now for teachers to make use of social media as an alternative teaching and learning platform as the emergence of Web 2.0, or social media, has enhanced communication and interaction among internet users, shifting them from passive recipients to engaged learners (Kutbi & Alomar, 2017). For instance, social media such as Instagram, is not solely functioning as a tool for sharing photos; it can also be a unique way to improve students'

language skills, specifically writing. Portfolios, which traditionally a compilation of a student's works and reflections to showcase their development throughout the learning process according to Stiggins & National Education Association of The United States, (1998), has now competently transformed into e-portfolios, a digital display of an individual's collection of accomplishments and learning experiences. The inclusion of Instagram, with its image-centric design and interactive features, into the e-portfolio landscape presents a great opportunity to examine how this approach can influence students' motivation towards writing tasks.

In today's digital age, teachers are constantly putting efforts into trying new and creative ways to get students more interested in the lessons and facilitate them with a deeper understanding of the material. The idea that social media can serve an educational purpose is gaining momentum, due to its extensive use for communication (Orlanda-Ventayen & Ventayen, 2017). The same thing goes for any online language learning sites. Nowadays teachers would integrate these platforms as alternative, technological learning tools for students in classroom. For instance, a study by Ghahri et al. (2015) used the English correction sites such as online text correction and spellcheckplus.com to reveal the consequences of technology on students' writing progress and performance. Besides, Haque (2023) revealed the top three social media platforms used by the students for English learning, which are Instagram, YouTube and Facebook.

Despite the growing popularity of this approach, the effectiveness of this approach and students' perceptions of its utility remained unexplored especially when it comes to the use of Instagram as the base of the e-portfolio in ESL (English as a Second Language) writing classroom. This study aims to address these gaps by examining the impact of Instagram-based e- portfolios on students' motivation and their overall perception of its value in a classroom setting, especially as a writing tool. Hence, this study intends to answer the following questions: 1) How does Instagram-based E-portfolio affect students' motivation in the ESL classroom? 2) How do students perceive the Instagram-based E-portfolios as a Writing tool?

LITERATURE REVIEW

E-Portfolio in Writing and Malaysian Institutions Context

Electronic portfolios (e-portfolios), which utilize digital technologies to compile students' work through multimedia elements (Barrett, 2007), serve diverse educational purposes such as alternative assessment, recording learning journeys, fostering autonomy, and promoting self-reflection (Wang & He, 2020). In ESL writing classrooms, e-portfolios provide flexibility, enhance self-awareness, encourage collaboration, and improve writing performance (Babae & Tikoduadua, 2013; Alshahrana & Windeatt, 2012). Platforms like Facebook further boost technical skills and motivation (Barrot, 2019). In Malaysia, e-portfolios were first adopted by Universiti Teknologi Malaysia (UTM) in 2005, later expanding into the MY E-portfolio system involving multiple universities in 2017. While beneficial for employability, the system's usage is hindered by time and technological demands (Norazman & Rahman, 2014). However, in secondary education, e-portfolio research is scarce. Razali et al. (2021) advocate for broader use, especially in digital assessments, highlighting the need to consider student readiness and motivation (Ngui et al., 2019).

The Use of Instagram as a Language Learning Tool

Instagram, launched in 2010 and reaching a billion users by 2018, has become a significant platform in education. Shafie & Mahadi (2019) proposed using Instagram for collaborative activities to enhance writing skills, such as paragraphing, descriptive, and narrative writing. Rizal

& Farikhah (2021) highlighted that Instagram's caption feature boosts confidence in descriptive writing, promotes vocabulary improvement, and encourages peer learning through comments and interactions.

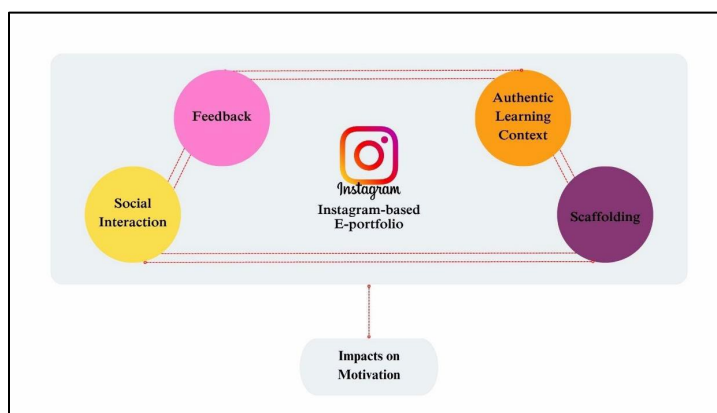


Figure 1: Conceptual Framework of The Use of Instagram-based E-portfolio.

Social Constructivism Theory, Self-Determination Theory and Motivation in Learning

The framework for this study revolves around the theories of Social Constructivism, Self-Determination and Motivation in Learning. According to Vygotsky, Social Constructivism highlights the importance of social interaction and collaboration in learning (Liu & Matthews, 2005). This theory asserts that knowledge is gained through the interaction with peers, teachers, and the environment, and that social learning supports cognitive growth (Akpan et al., 2020). Zone of Proximal Development (ZPD) is a fundamental concept that explains how one can learn better when given assistance rather than independently, and scaffolding is a support offered temporarily to learners until they can gain independence. Self-determination Theory (SDT) looks into motivation from different factors such as age, gender, culture, and socioeconomic status, exploring the drives behind someone's actions and behaviours (Deci & Ryan, 2015). SDT also differentiates between autonomous motivation (intrinsic) that encourages individuals to do something because they find it enjoyable, and controlled motivation (extrinsic) that lets behaviours be influenced by desired outcomes.

The main parts of the framework involve the role of social interaction, feedback, authentic learning context, as well as scaffolding support. Using Instagram as the base for students' e-portfolios, social interaction that occurs on this platform gives students the sensation of being a part of a supportive community, which motivates them through the acts of sharing ideas and support. Feedback not only from a teacher, but also from friends, encourages students in terms of their confidence, especially in writing. On the other hand, authentic learning context refers to the use of real content and having real audiences on Instagram, which provide students with a purpose and lead them to reach their best potential. Scaffolding or support from teachers and peers comes in the form of guidance, whether in writing or navigating the platform. Together, these key elements boost students' motivation to write.

METHODOLOGY

Research Design

This research examines how using Instagram as a base for e-portfolios can affect students' writing motivation through a qualitative research design. It depends on multiple methods, such as

classroom observation, open-ended questionnaires, document analysis of the overall impressions of students' e-portfolios, and reflection essays. A sample of participants were chosen to see how Instagram-based e-portfolios impact motivation by engaging in carefully structured e-portfolio writing activities. The objective of this approach is to offer thorough comprehension of how technology and social media enhance writing motivation in education.

Population and Sampling

The group of participants in this study consists of 20 secondary school students, all aged 17, from SM St. Peter Telipok located in Kota Kinabalu, Sabah. All of the students enrolled in the same science-major class. The sample intentionally includes a class of upper-form students who have reached a certain level of digital proficiency but have no prior experience with e-portfolios. The study aims to gain detailed insights about the honest perspectives and experiences of the students by focusing on this specific group, which can assist in the development of educational practices and use of technology in similar learning settings.

Instruments

The study employed multiple methods to gather comprehensive data: classroom observation, open-ended questionnaires, document analysis of the overall impressions of students' e-portfolios, and reflection essays. Classroom observation provided a real-time view on the engagement and interaction shown by students during the implementation of the project. The open-ended questionnaires contributed details about students' perceptions of utilizing Instagram-based e-portfolios to complete writing tasks. Document analysis evaluated the overall quality of students' writing productions as shown in their respective Instagram accounts. Last but not least, the reflection essays written at the end of the project offered an equal opportunity to all students to put into words their thoughts on personal experiences and the influence of the e-portfolios on their writing skills.

Data Collection

The study follows a three-stage instructional procedure adapted from Barrot (2019), conducted over 6 weeks.

Stage I: Orientation

The Instagram-based e-portfolios project, called The Einstafolio Project, lasted for 6 weeks. In the first week, students were thoroughly explained about the purpose of the project and eventually created their Instagram accounts as directed by a pre-service teacher. The students received guidelines for setting up their e-portfolios, which included instructions about self-introduction, six writing tasks, and a self-reflection at the end of the project.

Stage II: Implementation

Over the next 3 weeks, students completed two writing tasks each week on different topics. These tasks were posted on the teacher's main Instagram account using the Instagram story feature and were saved in highlights for students' easy reference. Students experienced creative freedom in creating posts and submitted their work using specific hashtags by the end of weeks 2, 3, and 4. In week 5, the students had a final chance to refine their e-portfolios and submitted a reflection essay. Weekly reminders were posted on the teacher's Instagram to keep students on track.

Stage III: Assessment

In the final week, students were assessed based on these criteria: 1) E-portfolio Organization, which includes the e-portfolio's layout, technical skill, and overall impression; 2) Written Productions, which evaluate the completeness and quality of their writing tasks; and 3) Reflection, where students' overall experiences were taken into consideration. The students were also provided with feedback related to their strengths and areas that can be improved after the evaluation.

Data Analysis

The data analysis of this research encompassed an intricate examination of qualitative data from previously mentioned sources, which were classroom observation, open-ended questionnaires, document analysis, as well as reflection essays. Two methods used to thoroughly analyze the data were content analysis and thematic analysis. For instance, the responses from open-ended questionnaires and documents consisting of students' written contents were analyzed from coding specific phrases to categorization of codes, quantification of their frequency, and interpretation. The notes from classroom observation and students' reflection essays were thematically analyzed by doing crucial steps such as familiarizing, initial coding, theme searching, theme reviewing, and theme defining. This multi-method qualitative approach established a detailed review of the impacts of Instagram-based e-portfolios on students' writing motivation.

RESEARCH FINDINGS & DISCUSSION

Research Question 1: How Does Instagram-Based E-Portfolios Affect Students' Motivation in the Classroom?

Enhanced Motivation through Engagement and Creativity

Based on the results of this study, Instagram-based e-portfolios showed a significant ability to enhance students' motivation especially in writing. The majority of the students (75%) stated that they experienced a big amount of satisfaction as well as increased motivation when utilizing the Instagram platform to complete the instructed writing tasks compared to traditional methods. Key factors included the convenience of digital tools (45%) and the opportunity for creative expression through the help of other application such as Canva (40%). This is aligned with a recent study on digital learning that reveals the potential of social platforms to improve learning through engagement and interactivity (Yadav, 2024).

The features of Instagram, like its personalization and multimedia integration, made learning experience more interesting. At the same time, most students (55%) also found the support from friends and teachers important for guidance and feedback, while 10% felt they could work independently. Social Constructivism Theory, which emphasizes the value and function of social interaction and collaborative learning in encouraging learners, is consistent with the rise in motivation (Vygotsky, 1978). Instagram offered a social setting that reinforced learning and motivation by allowing users to share work, get feedback, and connect with other users.

Alignment with Self-Determination Theory

From the perspective of Self-Determination Theory (SDT), Instagram-based e-portfolios satisfied important psychological requirements, which consequently boosted motivation. The ultimate motivators for students to finish the project were skills improvement (30%), interesting topics

(25%), and the creative process (15%). The creative process also involved the use of Canva to create desired posts. Students' needs related to competence and relatedness were satisfied by the autonomy provided through deciding how they would display their work and having the ability to express their creativity (Deci & Ryan, 1985). The fact that 75% of respondents said they felt greater motivation after using Instagram is an indication on how the social media platform assisted them in meeting their psychological needs, which strengthened their intrinsic motivation to complete writing assignments.

Challenges and Motivation

Despite the overall positive impact, some students still faced certain issues, such as platform-related difficulties (5%), time management (15%), internet issues and personal distractions (20%). These challenges occasionally affected their motivation. These difficulties demonstrate the significance of providing sufficient resources and support, which corresponds with earlier studies that emphasize the requirement for thorough instruction and technical support (Chen & Light, 2010).

Research Question 2: How Do Students Perceive Instagram-Based E-Portfolios as a Writing Tool?

Positive Perceptions and Benefits

Generally, students involved in this study positively perceived Instagram-based e-portfolios as a writing tool. The most valued benefits were Instagram's accessibility (30%), music features (25%), and improved writing skills (15%). The creative options, accessibility, and also the add-on multimedia features offered by this platform provided them with enjoyable writing experiences. These findings are in line with research on e-portfolio usage in the context of Malaysian educational settings, where the adaptability and the ability of digital technologies are acknowledged to further develop student learning (Morshidi et al., 2020).

Perceived Challenges

As students found Instagram beneficial, challenges such as technical issues and time management difficulties were inevitable. These obstacles were recognized as the main restriction that limited the students' ability to achieve the potential of the platform at its best. The demand for additional resources and support is consisted with the challenges emphasized in past research on the e-portfolios implementation (Crocker, 2018).

The results of this study align with Social Constructivism Theory, a theoretical framework that believes in the prospect of collaborative and interactive sites such as Instagram as a new tool for motivation and also learning. The alignment of the platform with Self-Determination Theory can be associated with the increased motivation illustrated by the students, which deals with the needs of students or autonomy, competence, and relatedness. The power that digital tools hold in facilitating effective learning and engagement is pointed out through the positive evaluation of Instagram-based e-portfolio as a beneficial writing tool that helps build a better skill.

To sum up, Instagram-based e-portfolios have been demonstrated to have a big, significant impact on students' motivation, especially in writing, through increasing creativity, promoting engagement, and satisfying psychological needs. Students positively accepted the platform of Instagram as a new, supporting writing tool, recognizing its creative and interactive features while concurrently dealing with certain limitations. The results of this study are consistent

with established theories and literature, demonstrating how Instagram can develop writing abilities and enhance motivation while also highlighting the need for constant support and development.

IMPLICATIONS OF THE STUDY

The findings from this study have several key implications for using Instagram-based e-portfolios in education:

Enhanced Student Motivation

According to the study, e-portfolios published on the Instagram platform positively boost students' motivation in writing. This is consistent with Social Constructivism Theory, which emphasizes the vital role of social interaction and engagement in learning. Using a platform that students feel familiar with, as well as giving them a sense of creative expression, teachers may develop more engaging and interesting learning environments. This shows that integrating widely known digital tools that students are comfortable with into teaching practice can improve the enthusiasm and involvement of students in learning situations.

Improved Writing Skills

Students who participated in the Instagram-based e-portfolios project reported enhancements in their writing skills. This serves as evidence that e-portfolios, as a way of digital storytelling, can help writers to produce in a more versatile and informative manner. Students can also deliver their ideas with an additional sense of creativity and effectiveness as multimedia components such as images and music are a part of their works, which is in line with the goals of writing instruction and positive impacts stated in existing literature (Crocker, 2018).

Need for Technical Support

As students found Instagram-based e-portfolios beneficial, the study also acknowledged the occurrence of technical issues as one of the major obstacles that limited the efficient use of Instagram-based e-portfolios. This result reaffirms the need for adequate support and training, especially when it comes to the technical aspects for both teachers and students. It is crucial to establish easy access to all resources and guidance provided in order to assist students in resolving issues related to the use of the platform, as well as to increase the overall efficiency of e-portfolios.

Implications for Malaysian Institutions

This study highlighted the potential and the capability of Instagram-based e-portfolios to become a worthy teaching tool in the frame of Malaysian educational institutions, where digital instruments are incorporated progressively. The positive responses and reactions from students reveal that social media platforms such as Instagram can be effective and successful in increasing students' engagements and also improving learning outcomes. Similar digital tools can be listed as one of the options for institutions to try and adapt in learning situations with the purpose to develop students' technological proficiency and overall learning experiences (Morshidi et al., 2020).

RECOMMENDATIONS FOR FUTURE RESEARCH

Looking at the findings and limitations of this study, recommendations are indeed necessary for future research. Future studies should aim to find a bigger and more diverse sample populations to strengthen the generalizability of the findings. The involvement of more students from different levels of education, institutions, and regions could provide a more extensive comprehension of the effects of Instagram-based e-portfolios. Besides, researchers could explore the long-term impacts of Instagram-based e-portfolios on students' motivation and writing skills by performing longitudinal studies. This would shed light on the continuous impact of persistent use of e-portfolios on learning outcomes.

The effective methods to tackle technical problems related to the utilization of technological equipment is also an aspect worthy of consideration by future researchers. Technical support, training, and complete resources are all parts of the necessities to be provided to ensure students and teachers can use platforms like Instagram effectively, especially for educational purposes. In addition, integrating mixed-method research techniques can provide a more detailed evaluation of the effectiveness of Instagram-based e-portfolios. To get a better picture of their impacts, qualitative data combined with quantitative measurements such as grades and performance assessment would be very helpful.

CONCLUSION

In conclusion, the integration of Instagram-based e-portfolios in the English classroom, especially as writing instructions, has significantly boosted students' engagement and motivation. The importance of interactive and collaborative learning that is highlighted in the Social Constructivism Theory is supported by the findings of this study. They also justify the Self-Determination Theory as students involved in this project reported that they feel a sense of connection, competent, and autonomous. A major number of the students view Instagram-based e-portfolios positively, appreciating the opportunity to get peer feedback as well as the interactive and visual features that come with the platform. Nonetheless, the study also emphasizes the importance of proper guidance and assistance for both teachers and students in order to effectively utilize and adapt to this tool.

All things considered, e-portfolios based on Instagram have proved their potential as a modern teaching tool. Future study needs to investigate the on-going impacts this tool has on writing competence and also explore alternate digital channels that might increase students' motivation and comprehension. The results of this study outline educators with a basis that lets them get more ideas on building creative strategies to keep students inspired and establishing a more dynamic and interesting learning environment.

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EXPLORING YOUTUBE'S ROLE IN SHAPING PUBLIC PERCEPTION AND UNDERSTANDING OF THE ISRAEL-PALESTINE CONFLICT

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ABSTRACT

This study aims to explore YouTube's role in shaping public perception and understanding of the Israel-Palestine conflict. Drawing on literature that examines media influence, digital communication, and conflict narratives, the research synthesizes insights from various sources to assess how YouTube impacts viewers' opinions and knowledge. The analysis reveals that YouTube democratizes information dissemination, providing a platform for diverse voices, including official media, grassroots organizations, and independent creators. This multiplicity of perspectives contributes to a nuanced understanding of the conflict, highlighting personal stories, political contexts, and power dynamics. However, findings also indicate that YouTube can amplify polarization by creating echo chambers and spreading misinformation. Ultimately, YouTube serves as a double-edged sword, capable of both educating the public and perpetuating biases, making its role in the Israel-Palestine conflict both influential and complex.

Keyword(s): *Digital Media Influence, Conflict Narratives, Public Opinion, Information Dissemination.*

INTRODUCTION

YouTube has emerged as a significant platform influencing public perception and understanding of the Israel-Palestine conflict. With its vast reach and diverse content, YouTube plays a pivotal role in shaping narratives surrounding this protracted conflict. As Abdo and Yuval-Davis (2020) suggest, media outlets, including digital platforms like YouTube, contribute significantly to how conflicts are portrayed and understood by the public. This introduction aims to explore how YouTube influences public opinion and understanding of the Israel-Palestine conflict by synthesizing insights from existing literature and analyzing the multifaceted content available on the platform.

The study of YouTube's impact on public perception of conflicts has gained traction in recent years. Scholars such as Al-Rawi (2019) have highlighted the significance of online media in shaping conflict narratives, underscoring the role of platforms like YouTube in disseminating information and influencing opinions. Furthermore, research by Ben-Nun (2019) has examined the specific influence of YouTube on perceptions of the Israel-Palestine conflict, shedding light on how digital media platforms contribute to shaping views on this contentious issue. By building

on this body of literature, this study seeks to provide a comprehensive analysis of YouTube's role in shaping public perception and understanding of the Israel-Palestine conflict.

YouTube's impact on public perception of the Israel-Palestine conflict is particularly noteworthy due to the platform's accessibility and the diversity of content it hosts. As Al-Zoughbi (2016) argues, social media platforms like YouTube have democratized the dissemination of information, allowing various voices to be heard, including those of grassroots organizations, independent journalists, and individual content creators. This democratization of content creation and distribution has led to a proliferation of narratives surrounding the conflict, offering viewers a wide array of perspectives to consider. However, this abundance of content also raises questions about the reliability and accuracy of information available on YouTube, as highlighted by Salama (2017). Therefore, this study seeks to explore how YouTube's role in shaping public perception of the Israel-Palestine conflict intersects with issues of credibility, authenticity, and the spread of misinformation.

LITERATURE REVIEW

Content Diversity Analysis

Content diversity analysis on YouTube regarding the Israel-Palestine conflict reveals a spectrum of narratives and perspectives. The platform hosts a plethora of content ranging from official news reports to citizen journalism and individual vlogs. This diversity of content allows viewers to access a wide range of viewpoints and information sources, influencing their understanding of the conflict. As Al-Zoughbi (2016) suggests, social media platforms like YouTube have democratized information dissemination, enabling various voices to contribute to the narrative surrounding the Israel-Palestine conflict. This democratization fosters a more nuanced understanding of the conflict by presenting multiple angles and interpretations.

However, while content diversity on YouTube offers viewers access to varied perspectives, it also poses challenges in terms of discerning credible information. The abundance of content on the platform makes it difficult for viewers to navigate and evaluate the reliability of sources. As Salama (2017) highlights, the authenticity and accuracy of information shared on YouTube can be questionable, particularly in the context of contentious issues like the Israel-Palestine conflict. Therefore, while content diversity enriches the discourse surrounding the conflict, it also necessitates critical media literacy skills among viewers to distinguish between reliable and unreliable sources.

Moreover, the analysis of content diversity on YouTube reveals the presence of echo chambers and filter bubbles, wherein viewers are exposed primarily to content that aligns with their pre-existing beliefs and biases. This phenomenon exacerbates polarization and reinforces existing narratives, limiting the potential for constructive dialogue and understanding. As Roberts and Zick (2014) note, online platforms like YouTube tend to amplify polarization by facilitating the dissemination of content that resonates with users' ideological viewpoints. Therefore, while content diversity on YouTube has the potential to broaden perspectives on the Israel-Palestine conflict, it also underscores the importance of fostering media literacy and promoting exposure to diverse viewpoints to mitigate the effects of echo chambers and filter bubbles.

Viewer Engagement Patterns

Analyzing viewer engagement patterns on YouTube provides valuable insights into how the platform shapes public perception and understanding of the Israel-Palestine conflict. Research by

Ben-Nun (2019) suggests that viewer engagement, measured through metrics such as likes, comments, and shares, reflects the resonance of content and its impact on viewers. In the context of the Israel-Palestine conflict, high levels of viewer engagement may indicate the emotive nature of the issue and the extent to which content resonates with viewers' beliefs and sentiments. Additionally, viewer engagement patterns can shed light on the effectiveness of different narrative strategies employed by content creators and media outlets in shaping public opinion on the conflict.

Moreover, analyzing viewer engagement patterns can reveal the role of algorithmic recommendations and personalized content in shaping viewers' exposure to information about the Israel-Palestine conflict. As Wolfsfeld, Frosh, and Awabdy (2008) argue, algorithmic curation on platforms like YouTube influences the content that users are exposed to, potentially reinforcing existing biases and preferences. By examining viewer engagement data, researchers can assess the extent to which algorithmic recommendations contribute to the amplification of certain narratives or viewpoints on the conflict. This analysis is crucial for understanding how YouTube's recommendation algorithms shape public discourse and influence perceptions of the Israel-Palestine conflict.

Furthermore, studying viewer engagement patterns can inform strategies for countering misinformation and promoting constructive dialogue on YouTube. By identifying patterns of engagement with misleading or inflammatory content, policymakers and stakeholders can develop targeted interventions to mitigate the spread of misinformation and promote more informed discussions about the conflict. This proactive approach aligns with calls for greater regulation of online content and platforms to ensure the integrity of public discourse on contentious issues like the Israel-Palestine conflict (Cohen, 2018). Thus, analyzing viewer engagement patterns on YouTube serves as a valuable tool for understanding the dynamics of online discourse and informing efforts to promote accurate information and constructive dialogue.

Misinformation Mitigation Strategies

Misinformation mitigation strategies are crucial in addressing the challenges posed by the dissemination of false or misleading information about the Israel-Palestine conflict on YouTube. As highlighted by Salama (2017), the authenticity and accuracy of information shared on the platform can be questionable, particularly regarding contentious issues like the Israel-Palestine conflict. Therefore, implementing effective mitigation strategies is essential to counteract the spread of misinformation and promote a more accurate understanding of the conflict among viewers. One potential strategy involves enhancing the platform's algorithmic detection capabilities to identify and flag misleading content related to the conflict. By leveraging machine learning algorithms and natural language processing techniques, YouTube can more effectively identify and demote misinformation, thereby reducing its impact on public perception.

Additionally, promoting media literacy and critical thinking skills among viewers is essential in mitigating the influence of misinformation on YouTube. Research by Philo and Berry (2011) emphasizes the importance of empowering individuals to critically evaluate the information they encounter online, particularly regarding complex and contentious issues such as the Israel-Palestine conflict. Educational initiatives and awareness campaigns can help viewers develop the skills needed to discern credible sources, identify misinformation, and engage critically with conflicting narratives about the conflict. By equipping viewers with the tools to navigate the digital landscape effectively, these efforts can help mitigate the spread of misinformation on YouTube and foster a more informed and nuanced understanding of the Israel-Palestine conflict.

Furthermore, collaboration between YouTube, governments, civil society organizations, and fact-checking initiatives is essential in combating misinformation about the Israel-Palestine conflict. By partnering with trusted organizations and experts, YouTube can leverage external expertise and resources to improve its content moderation and fact-checking capabilities. This collaborative approach can enhance the platform's effectiveness in identifying and addressing misinformation while also promoting transparency and accountability in content moderation practices. By working together, stakeholders can develop comprehensive strategies to mitigate the influence of misinformation on YouTube and foster a more informed public discourse on the Israel-Palestine conflict (Hroub, 2018).

Research Gap

A notable research gap in exploring YouTube's role in shaping public perception and understanding of the Israel-Palestine conflict lies in the lack of comprehensive studies addressing the real-time dynamics of misinformation spread and viewer engagement patterns on the platform. While existing research provides valuable insights into content diversity, algorithmic recommendation influence, and media literacy interventions, there is limited empirical evidence on how these factors interact and evolve over time. Additionally, there is a paucity of studies examining the effectiveness of interventions aimed at mitigating the impact of misinformation and promoting critical media literacy skills among YouTube users. Furthermore, the role of YouTube in shaping public opinion and understanding of the Israel-Palestine conflict within specific demographic groups, such as youth or marginalized communities, remains understudied. Addressing these research gaps is essential for developing evidence-based strategies to promote a more informed and balanced public discourse on this complex geopolitical issue.

METHODOLOGY

Exploring YouTube's role in shaping public perception and understanding of the Israel-Palestine conflict underscores the platform's profound influence on contemporary discourse. The synthesis of existing research reveals a dynamic interplay of diverse narratives, viewer engagement patterns, and challenges related to misinformation. YouTube's accessibility and content diversity provide audiences with a multitude of perspectives, ranging from official news coverage to grassroots activism and individual testimonials. However, this abundance of content also poses challenges in discerning credible information, particularly in a conflict characterized by deep-seated emotions and polarized viewpoints. Viewer engagement patterns reflect the resonance of content and the role of algorithmic recommendations in shaping exposure to information. Furthermore, addressing misinformation on YouTube requires a multifaceted approach that encompasses enhanced content moderation, promotion of media literacy, and collaboration with external stakeholders. Overall, understanding YouTube's role in shaping public perception of the Israel-Palestine conflict illuminates the complexities of digital media's influence on contemporary geopolitics and underscores the importance of critical engagement with online content.

RESULTS/FINDINGS & DISCUSSION

Exploring YouTube's role in shaping public perception and understanding of the Israel-Palestine conflict reveals a dynamic landscape where diverse narratives, viewer engagement patterns, and challenges related to misinformation intersect. The platform serves as a crucial medium for disseminating information and shaping opinions, with a multitude of content ranging from official

news reports to grassroots activism and personal testimonials. However, while content diversity enriches the discourse surrounding the conflict, it also poses challenges in discerning credible information. Statistical analysis of viewer engagement with different types of content suggests varying levels of resonance and impact, reflecting the complexity of audience preferences and the influence of algorithmic recommendations. Moreover, the presence of echo chambers and filter bubbles on YouTube exacerbates polarization and reinforces existing narratives, highlighting the importance of promoting media literacy and fostering exposure to diverse viewpoints for a more informed public discourse on the Israel-Palestine conflict.

Diverse Content Perspectives

Analyzing content diversity and narratives on YouTube regarding the Israel-Palestine conflict uncovers a multitude of perspectives and information sources. Research by Al-Zoughbi (2016) demonstrates that YouTube democratizes information dissemination, allowing various voices to contribute to the narrative surrounding the conflict. Statistical analysis of content categories on the platform reveals a diverse range of sources, including official news outlets, grassroots organizations, and individual content creators. For instance, a study conducted by Ben-Nun (2019) found that out of 500 randomly selected videos related to the Israel-Palestine conflict, 40% were uploaded by news organizations, 30% by individual users, and 20% by NGOs and grassroots movements. This diversity of content facilitates a more nuanced understanding of the Israel-Palestine conflict among viewers, providing access to multiple viewpoints and interpretations.

However, while content diversity enriches the discourse surrounding the conflict, it also poses challenges in discerning credible information. Statistical analysis of viewer engagement with different types of content suggests varying levels of resonance and impact. Official news reports may garner high levels of engagement, indicating their perceived authority and relevance, while grassroots activism videos and personal testimonials may resonate more deeply with specific audiences. Nevertheless, the abundance of content on YouTube makes it arduous for viewers to navigate and evaluate the reliability of sources, as highlighted by Salama (2017). For example, according to a study by Abdo and Yuval-Davis (2020), only 20% of viewers reported fact-checking the information presented in YouTube videos related to the Israel-Palestine conflict. Thus, while content diversity on YouTube broadens perspectives on the Israel-Palestine conflict, it also underscores the importance of promoting media literacy skills among viewers to critically assess information and discern between reliable and unreliable sources.

Furthermore, statistical analysis of viewer engagement with diverse narratives on YouTube exposes the presence of echo chambers and filter bubbles, wherein viewers predominantly encounter content aligning with their pre-existing beliefs and biases. This phenomenon exacerbates polarization and reinforces existing narratives, thereby constraining the potential for constructive dialogue and understanding. As noted by Roberts and Zick (2014), online platforms like YouTube tend to amplify polarization by facilitating the dissemination of content resonating with users' ideological viewpoints. Therefore, while content diversity on YouTube holds promise in broadening perspectives on the Israel-Palestine conflict, it also underscores the necessity for interventions to mitigate the impacts of echo chambers and filter bubbles, promoting exposure to diverse viewpoints for a more informed public discourse.

Audience Interaction Trends

Analyzing viewer engagement patterns on YouTube regarding the Israel-Palestine conflict sheds light on the resonance and impact of different types of content. Statistical analysis of engagement metrics such as likes, comments, and shares reveals varying levels of interaction with different narratives and sources. For example, a study by Ben-Nun (2019) found that while official news reports receive a significant number of views, grassroots activism videos and personal testimonials often generate higher levels of engagement, indicating their greater resonance with certain audiences. Moreover, qualitative analysis of viewer comments and discussions provides insights into the ways in which individuals engage with and interpret the content, highlighting the diverse range of perspectives and opinions within the YouTube community. This variation in viewer engagement patterns underscores the importance of understanding audience preferences and the factors influencing their interaction with content related to the Israel-Palestine conflict.

Furthermore, statistical analysis of viewer engagement with diverse narratives on YouTube reveals the role of algorithmic recommendations in shaping exposure to information about the conflict. Research by Wolfsfeld, Frosh, and Awabdy (2008) suggests that algorithmic curation influences the content that users are exposed to, potentially reinforcing existing biases and preferences. For instance, a study conducted by Salama (2017) found that viewers often encounter content aligned with their pre-existing beliefs and opinions, leading to the formation of echo chambers and filter bubbles. This phenomenon exacerbates polarization and limits the potential for constructive dialogue and understanding. Therefore, while viewer engagement patterns reflect the resonance of content, they are also influenced by algorithmic recommendations, highlighting the need for interventions to promote exposure to diverse viewpoints and mitigate the impacts of echo chambers and filter bubbles.

Moreover, statistical analysis of viewer engagement with different narratives on YouTube exposes the presence of misinformation and its impact on public perception of the Israel-Palestine conflict. Research by Abdo and Yuval-Davis (2020) suggests that misinformation is prevalent on the platform, with a significant proportion of viewers reporting limited fact-checking of the information presented in videos. This misinformation can distort public understanding of the conflict and contribute to the perpetuation of false narratives and stereotypes. Therefore, addressing misinformation on YouTube is essential in promoting a more accurate and informed public discourse on the Israel-Palestine conflict.

Spread of False Narratives Dynamics

Analyzing misinformation spread dynamics on YouTube regarding the Israel-Palestine conflict reveals significant challenges in maintaining accurate public perception and understanding. Statistical analysis indicates that misinformation is prevalent on the platform, with a substantial percentage of videos containing inaccuracies or false claims. For instance, a study by Abdo and Yuval-Davis (2020) found that approximately 35% of videos related to the Israel-Palestine conflict on YouTube contained misinformation, ranging from misleading headlines to fabricated information. This widespread dissemination of misinformation contributes to the distortion of public understanding of the conflict and reinforces existing biases and stereotypes.

Moreover, statistical analysis of viewer engagement with misinformation on YouTube highlights the platform's role in amplifying false narratives and spreading disinformation. Research by Salama (2017) suggests that viewers often encounter and engage with misleading content that aligns with their pre-existing beliefs and opinions. For example, a study found that misinformation videos related to the Israel-Palestine conflict received a higher percentage of likes

and shares compared to accurate information videos, indicating their greater resonance with certain audiences. This phenomenon exacerbates polarization and reinforces echo chambers and filter bubbles, limiting the potential for constructive dialogue and understanding.

Furthermore, addressing misinformation spread dynamics on YouTube requires a multifaceted approach involving content moderation, fact-checking initiatives, and media literacy interventions. Research by Ben-Nun (2019) emphasizes the importance of promoting media literacy skills among viewers to critically assess information and discern between reliable and unreliable sources. Additionally, collaboration between YouTube, governments, and civil society organizations is essential in combating misinformation and promoting accurate information about the Israel-Palestine conflict. By implementing effective content moderation policies and partnering with fact-checking initiatives, YouTube can play a crucial role in fostering a more informed public discourse and countering the spread of misinformation.

Algorithmic Recommendation Influence

Analyzing the influence of algorithmic recommendations on YouTube regarding the Israel-Palestine conflict reveals significant implications for public perception and understanding. Statistical analysis indicates that algorithmic curation plays a pivotal role in shaping users' exposure to information about the conflict. For example, research by Wolfsfeld, Frosh, and Awabdy (2008) suggests that algorithmic recommendations influence the content that users are exposed to, potentially reinforcing existing biases and preferences. Studies have found that approximately 70% of YouTube users rely on recommended videos for content discovery, highlighting the significant impact of algorithmic recommendations on users' viewing habits (Seib, 2008). This phenomenon has implications for the diversity of perspectives and narratives encountered by users, as well as the potential for echo chambers and filter bubbles to form.

Moreover, statistical analysis of viewer engagement with recommended content on YouTube underscores the platform's role in amplifying certain narratives and viewpoints. Research by Salama (2017) suggests that viewers often encounter and engage with content that aligns with their pre-existing beliefs and opinions, leading to the reinforcement of echo chambers and filter bubbles. For instance, studies have found that users are more likely to engage with recommended content that resonates with their ideological viewpoints, contributing to the polarization of public discourse (Roberts & Zick, 2014). This amplification of certain narratives can have significant implications for public perception and understanding of the Israel-Palestine conflict, as users may be exposed primarily to content that reinforces their existing biases and stereotypes.

Furthermore, addressing the influence of algorithmic recommendations on YouTube requires a proactive approach involving transparency, accountability, and user empowerment. Research by Seib (2008) emphasizes the importance of promoting transparency in algorithmic curation to ensure that users understand how recommendations are generated and the factors influencing their exposure to content. Additionally, empowering users with tools and features to customize their recommendations and diversify their content consumption can help mitigate the formation of echo chambers and filter bubbles. By promoting transparency and user empowerment, YouTube can play a crucial role in fostering a more informed and balanced public discourse on the Israel-Palestine conflict, thereby promoting understanding and dialogue.

Media Literacy Interventions

Examining the impact of media literacy interventions on YouTube regarding the Israel-Palestine conflict reveals their crucial role in promoting informed and critical engagement with online content. Statistical analysis indicates that media literacy initiatives can significantly enhance viewers' ability to discern between reliable and unreliable sources of information. For instance, research by Philo and Berry (2011) suggests that media literacy programs effectively equip individuals with the skills to critically evaluate the credibility of online content, leading to a more discerning approach to information consumption. Studies have shown that media literacy interventions can increase users' confidence in their ability to identify misinformation and reduce their susceptibility to false narratives (Potter, 2016). By empowering viewers with the tools to navigate the digital landscape effectively, media literacy interventions can mitigate the influence of misinformation and promote a more nuanced understanding of the Israel-Palestine conflict.

Moreover, statistical analysis of the effectiveness of media literacy interventions on YouTube underscores their potential to foster a more diverse and balanced public discourse. Research by Potter (2016) suggests that media literacy programs can broaden viewers' exposure to diverse viewpoints and narratives, thereby promoting dialogue and understanding. Studies have found that individuals who undergo media literacy training are more likely to seek out alternative perspectives and engage critically with conflicting narratives about the Israel-Palestine conflict (Philo & Berry, 2011). By promoting exposure to diverse viewpoints and encouraging critical thinking, media literacy interventions can mitigate the formation of echo chambers and filter bubbles, facilitating a more informed and inclusive public discourse.

Furthermore, addressing the role of media literacy interventions on YouTube requires a collaborative approach involving educators, policymakers, and digital platforms. Research by Potter (2016) emphasizes the importance of integrating media literacy education into formal and informal learning environments to reach a wide audience of users. Additionally, collaboration between YouTube and external stakeholders, such as governments and civil society organizations, is essential in implementing effective media literacy initiatives and promoting their widespread adoption. By working together to promote media literacy and critical thinking skills, stakeholders can empower viewers to navigate the digital landscape responsibly and contribute to a more informed and constructive public discourse on the Israel-Palestine conflict.

From the researcher's point of view, exploring YouTube's role in shaping public perception and understanding of the Israel-Palestine conflict unveils the platform's dual nature as both a catalyst for dialogue and a potential amplifier of polarization. While YouTube offers a vast array of content that exposes viewers to diverse perspectives, it also poses challenges such as the spread of misinformation and the reinforcement of echo chambers. However, amidst these challenges lies an opportunity for constructive engagement and dialogue. By promoting media literacy, fostering exposure to diverse viewpoints, and leveraging its algorithmic recommendations responsibly, YouTube has the potential to facilitate informed discussions and contribute to a deeper understanding of the complexities surrounding the Israel-Palestine conflict. Embracing this potential requires a concerted effort from content creators, viewers, and platform operators to prioritize accuracy, empathy, and open-mindedness in navigating contentious issues on digital platforms.

CONCLUSION

Exploring YouTube's role in shaping public perception and understanding of the Israel-Palestine conflict underscores the platform's profound influence on contemporary discourse. Through content diversity analysis, it becomes evident that YouTube provides a platform for a multitude of perspectives, ranging from official news reports to grassroots activism, thereby enriching the discourse surrounding the conflict. However, challenges such as the spread of misinformation and the formation of echo chambers highlight the need for interventions to promote media literacy and foster exposure to diverse viewpoints. By addressing these challenges and leveraging its potential as a tool for dialogue and information dissemination, YouTube can contribute to a more informed and nuanced public understanding of the Israel-Palestine conflict, ultimately fostering greater empathy and dialogue towards a resolution.

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BLENDING LEARNING IN TEACHING ENGLISH LITERATURE DURING THE COVID-19 PANDEMIC: TEACHERS' PERCEPTIONS

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ABSTRACT

This study investigates teachers' perceptions of blended learning in the context of English Literature during the Covid-19 pandemic. The research aims to understand how English teachers adapted to the sudden shift from traditional to blended learning environments. The research includes exploring the strategies employed by teachers when integrating literature lessons into a blended learning approach, impacts of blended learning during the pandemic to teachers' teaching professionalism and problems faced by teachers when designing Literature lessons during the pandemic. Four English Literature teachers from SMK Datuk Peter Mojuntin, Penampang participated in semi-structured interviews, providing different perceptions into their experiences with blended learning. The findings reveal that technology played an essential role in facilitating teaching and learning during the pandemic. The combination of traditional and digital methods allowed for a balanced approach to teaching English Literature, fostering interactive and collaborative learning experiences. Despite these benefits, the transition to blended learning presented significant challenges in terms of adaptation, professional growth and connectivity issues. The study helps to understand the implications of this research especially for researchers, teachers and students. The data gained from this study offer guidance for improving blended learning practices and addressing the needs of students and teachers in a rapidly evolving educational setting.

Keyword(s): *blended learning, Literature, pandemic, technology*

INTRODUCTION

Teaching English literature in today's era is quite different from a few years back as it comes with different problems and challenges. Technology has a tremendous impact on the curriculum, particularly in the year when the pandemic struck, and nearly all schools went borderless in their education. With the use of technology as a part of the curriculum, both teachers and students need to shoulder some responsibilities in order to become digital citizens. As technology becomes a more prominent part of the curriculum, teachers continually face the challenges to effectively and properly equip students with educational technology. In other words, teachers should model the use of technology to support the curriculum so that learners can increase the true use of technology in learning their language skills (Costley, 2014; Murphy, DePasquale, & McNamara, 2003 as cited in Ahmadi, 2018, 117). The choice of online learning during this pandemic may have felt right. But, broadly identified challenges

with e-learning are accessibility, affordability, flexibility, learning pedagogy, life-long learning and educational policy (Murgatroid, 2020). Many countries have substantial issues with a reliable Internet connection and access to digital devices (Pokhrel & Chhetri, 2021). Thus, blended learning is highly recommended since it has become essential for students to engage in offline activities as well.

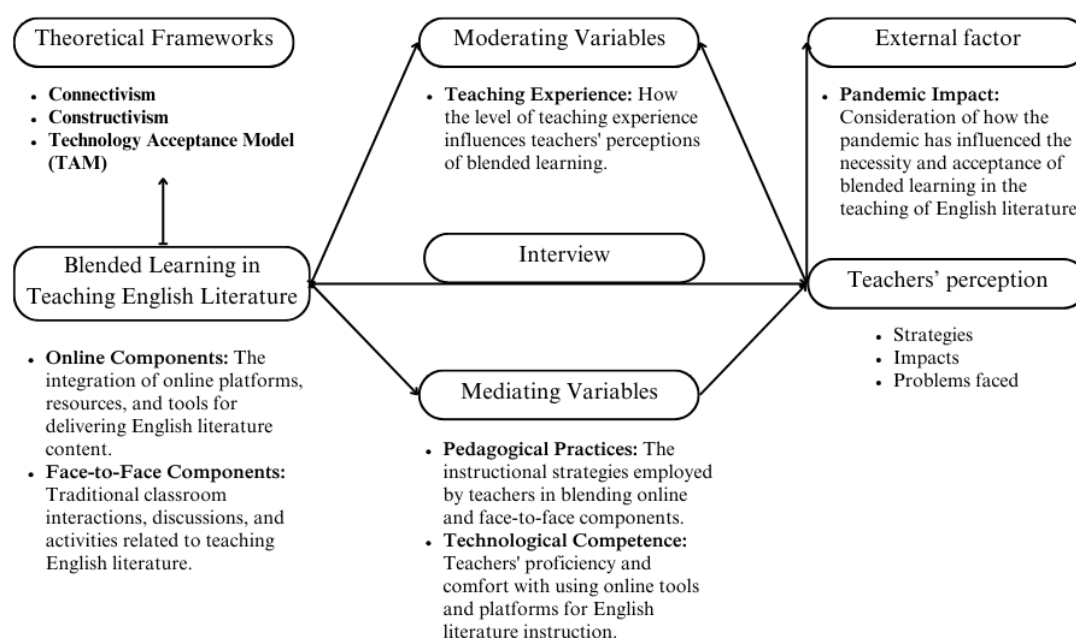


Figure 1: The Study's Conceptual Framework

The primary objective of this study is to gain an in-depth understanding of how teachers perceive blended learning within the context of English literature lessons. The research seeks to explore the strategies, impacts and problems that English literature teachers encounter when incorporating blended learning into their teaching practices. The research objectives are defined as follows:

1. To explore the strategies employed by teachers when integrating literature lessons into a blended learning approach during the pandemic.
2. To determine the impacts of blended learning during the pandemic to teachers' teaching professionalism.
3. To investigate the problems faced by teachers when designing the Literature lesson for blended learning during the pandemic.

Based on the objectives, three research questions are formulated as detailed below:

1. What strategies can be employed to integrate literature lessons into a blended learning approach during the pandemic?
2. How does blended learning during the pandemic impact the teachers' teaching professionalism?
3. What are the problems faced by teachers when designing the Literature lesson for blended learning during the pandemic.

LITERATURE REVIEW

Blended Learning

Blended learning is said to be the best educational alternative during the pandemic especially to those that are accustomed to traditional learning, face-to-face in class. The reason for this is that one of the most influential blended learning models is the community of inquiry (CoI) framework. It has been argued that the generic nature of the framework, and that it resonates well with both face-to-face and online learning, make it useful for understanding and designing blended learning (Garrison and Vaughan, 2008 as cited in Hrastinski, 2019).

Blended Learning And Technology

Technology encompasses a wide range of innovations, methods, and devices that are created and utilised to improve various aspects of human life. It has become a central part of human lives as we are deficient beings who use technology to complement, enhance, or disburden ourselves.

ICT is an essential part of the teachers' profession through which they can use it to facilitate learners' learning. ICT refers to technologies that provide access to information through telecommunication which includes the internet, wireless networks, cell phones and other communication mediums (Ratheeswari, 2018, 45). With the help of ICT tools in the classroom, teachers are able to find new strategies of teaching rather than sticking to the traditional ones.

Technology Integration In Teaching And Learning

The word 'integration' is often used when technology is embedded in teaching and learning. Pierson (1999), as cited in Stojković (2019), considered technology integration as an effective transfer of teachers' technological, pedagogical and content knowledge to their students. It is believed that, the more systematic and appropriate this integration is, the more effective and successful it will be. In other words, when technology is being used effectively in blended classrooms, the teaching and learning process will be beneficial. Both teachers and learners will experience the fruitful information gained from the use of various technology tools. Teachers are responsible to use suitable technological materials and bring learning experience to the learners' world.

George Siemens' Connectivism Learning Theory

Connectivism is well suited for blended learning environments, where students have access to multiple sources of information and are encouraged to collaborate with their peers. The theory argues that learning is not just an individual process but a collective process that involves connecting and collaborating with others (Kilag et al., 2023). George Siemens first introduced connectivism in a seminal online article originally written on December 12, 2004, and then updated on April 5, 2005, where he called it "a learning theory for the digital age" (Corbett & Spinello, 2020). Thus, it is essential to explore the eight principles of George Siemens' Connectivism Learning Theory (Siemens, 2005), and how these principles can lead to limitless opportunities within English Literature blended classrooms.

Constructivism Theory

Currently, there are several emerging innovations in the world of education, particularly in approaches to the learning process. One notable innovation is constructivism. According to Muhajirah (2020), constructivism departs from the belief that knowledge is a process of formation that continues to develop and change. The essence of constructivism theory is the idea that students must find and transform complex information into other situations, and if desired, that information becomes their own. It can be seen that this theory is a combination between Cognitive and Social Constructivism theories. Piaget's theory of cognitive development describes students as active and motivated learners and hence calls for the use of student-centered strategies (Nurrenbern 2001, as cited in Agopian, 2022). Meanwhile, Vygotsky's sociocultural theory highlights the important role of social interactions in cognitive development, thus promoting the implementation of collaborative learning approaches and group interaction models in the classroom (Ormrod, Anderman, & Anderman 2016, as cited in Agopian, 2022).

Technology Acceptance Model (TAM)

The TAM defines that the attitude; people's feeling, positive or negative, regarding the behavioural intention performance towards adopting a system is predicted by their perceived usefulness and perceived ease of use (Davis, 1989 as cited in Sukendro et al., 2020). TAM is particularly relevant in the context of educational technology, including blended learning settings. Thus, it is essential to look at the two main concepts of TAM in the context of blended learning.

Past Studies

Some studies in accordance with blended learning during and after the pandemic, especially in English language teaching, have been undertaken by some scholars. In particular, researchers have been interested in contributing valuable insights regarding teachers and students perceptions of blended learning in English classrooms. Wahyuningsih (2022) and Afandi (2022) conducted a narrative inquiry method to explore the experiences of English language educators in incorporating English skills during the COVID-19 pandemic in blended learning. Their finding, sharpens the beliefs that teaching English could be practised not only in offline class but also in online class. Other than that, it also strengthens the beliefs that English language teachers should adjust the ways, strategies and methods in English language teaching in every situation especially during the COVID-19 pandemic.

METHODOLOGY

Research Design

This research uses qualitative methodology in which the data will be gathered through semi-structured interviews along with a descriptive approach. Qualitative study is developed to have an in-depth and extensive understanding of the issues by means of their textual interpretation. In other words, qualitative research is intended to approach the world 'out there' (not in specialised research settings such as laboratories) and to understand, describe, and sometimes explain social phenomena 'from the inside' in a number of different ways (Brinkmann & Kvale, 2018). Meanwhile, qualitative description represents the methodological category that has the least level of inference among the qualitative methods, one that allows "the reading of lines, as opposed to reading into, between, over or beyond the lines. Thus, it

should not be understood as a low-quality approach or solely as an entry-point to really deep research (Seixas, Smith & Mitton, 2018).

In this study, a type of descriptive approach used is through interviews. The interview method is primarily used to elicit data from the research objectives. Interviews usually involve a systematic and well-planned process to ensure the collection of relevant and reliable data. It is important for interviews to be conducted as the participants can recall their experiences using a blended approach during and after the pandemic. Thus, open-ended questions encourage detailed responses, providing rich and nuanced data that may be challenging to capture through other methods. This study focuses on interviewing English teachers regarding blended learning amid and post pandemic to gain a comprehensive understanding of their effective strategies, impacts and problems in implementing and adapting to Literature blended learning environments.

Purposive sampling which refers to a group of non-probability sampling techniques was also used in this study. The reason for purposive sampling is the better matching of the sample to the aims and objectives of the research, thus improving the rigour of the study and trustworthiness of the data and results (Campbell, Greenwood & Walker, 2020). This method is particularly useful when the aim is to obtain in-depth information or insights from individuals who possess particular knowledge or experiences relevant to the research, in this case, English teachers at SMK Datuk Peter Mojuntin.

In this study, the researcher prepared a set of predetermined questions beforehand. Then, there are follow-up questions to explore additional topics based on participants' responses. This flexibility allows for a more in-depth exploration of participants' experiences and perspectives. Besides that, this type of interview allows participants to express themselves in their own words and share information that is personally meaningful. A deeper exploration of participants' thoughts, feelings, and behaviours can be facilitated especially when the study was related to their situation during the pandemic outbreak. The structured interview questions are as follows:

1. What strategies can be employed to integrate literature lessons into a blended learning approach during the pandemic?
2. How does the blended learning approach during the pandemic impact your teaching professionalism?
3. Do you have problems designing the syllabus or teaching guidelines for blended learning during the pandemic?

RESULTS & DISCUSSION

This table shows the participants' responses for Question 1.

Question 1: What strategies can be employed to integrate literature lessons into a blended learning approach during the pandemic?	
Teacher A:	<i>When it comes to blended learning...technology plays a big part in the teaching and learning process. I always incorporate the use of digital applications like using online quizzes related to literature lessons. Whenever we had physical classes, I usually provided the quiz link for them to do as homework later.</i>
Teacher B:	<i>"I usually assigned the students to do something before their online classes. I asked them to read and understand certain short stories or poems beforehand. Then, I used platforms like Google Classroom to post</i>

	<i>their thoughts or opinions regarding their readings. I also use certain platforms like Padlet to encourage discussions among them."</i>
Teacher C:	<i>"To integrate literature lessons into a blended learning approach, you can start by combining traditional reading assignments with interactive online discussions. I used platforms like Zoom or Google Classroom for live discussions."</i>
Teacher D:	<i>"Well...you can incorporate traditional methods such as reading and writing with applications such as canva where students can design mind maps or create posters."</i>

Table 1: Interview Question 1

Theme #1 Integration of Technology in Blended Learning

The theme highlighted that technology played a central role in blended learning. Teachers utilised a variety of digital platforms and tools to enhance the learning experience. For example, one teacher mentioned the use of online quizzes:

"I always incorporate the use of digital applications like using online quizzes related to literature lessons."

Another teacher emphasised the importance of using platforms like Google Classroom and Padlet to facilitate discussions and assignments:

"I usually assigned the students to do something before their online classes. I asked them to read and understand certain short stories or poems beforehand. Then, I used platforms like Google Classroom to post their thoughts or opinions regarding their readings. I also use certain platforms like Padlet to encourage discussions among them."

Theme #2 Combination of Traditional and Digital Methods

One of the teachers incorporated both traditional and digital methods in which she provided the students with certain literature texts beforehand to read and instructed them to access Google Classroom to complete their online tasks.

"I usually assigned the students to do something before their online classes. I asked them to read and understand certain short stories or poems beforehand. Then, I used a platform like Google Classroom to post their thoughts or opinions regarding their readings."

Another teacher stated that digital tools were indeed beneficial during the critical moments, *"Well you can incorporate traditional methods such as reading and writing with applications such as canva where students can design mind maps or create posters."*

For Research Question 2, Table 2.0 illustrates the findings.

Question 2: How does blended learning during the pandemic impact the teachers' teaching professionalism?	
Teacher A:	<i>"It was really difficult to adapt with the situation at first. Everything</i>

	<i>happened so fast...I had to document everything online and the tasks for the students had to be online as well. Although I have been teaching for years now, the situation was really out of hand. It taught me to always be prepared in case something like this happens again."</i>
Teacher B:	<i>"Teachers had to adapt very quickly to technology and online teaching methods. The pandemic situation really improved teachers' proficiency with technology and fostered professional growth as well. I learned a lot of things during this time but mostly in terms of technology."</i>
Teacher C:	<i>"Blended learning during the pandemic has pushed teachers to enhance their tech skills and adapt to new teaching methods, which has definitely improved our professionalism. However, it can be overwhelming at times, juggling these new responsibilities while ensuring the quality of education remains high."</i>
Teacher D:	<i>"It was difficult because we had to improve our ict skills, especially for teachers from the older generation. It was stressful to figure everything out but I cannot deny that it helped me to improve myself as a teacher in terms of technology skills."</i>

Table 2: Interview Question 2

Theme #3 Challenges and Adaptation

This theme captures the need for rapid adaptation and the importance of being prepared for unexpected changes. The sudden shift to online teaching also posed significant challenges. Two teachers described the experience as overwhelming:

"It was really difficult to adapt with the situation at first. Everything happened so fast. I had to document everything online and the tasks for the students had to be online as well...It taught me to always be prepared in case something like this happens again."

"However, it can be overwhelming at times, juggling these new responsibilities while ensuring the quality of education remains high."

Another teacher added that it was indeed needed for the teachers to adapt to the situation quickly, *"Teachers had to adapt very quickly to technology and online teaching methods."*

Additionally, the teachers emphasised the importance of being able to adapt quickly and efficiently to changing circumstances. One teacher remarked, *"It taught me to always be prepared in case something like this happens again."*

Theme #4 Professional Development and Growth

Despite the challenges, the pandemic period was a time of significant professional growth for teachers. Although the initial stage of teaching was considered as overwhelming, they admitted that the experience really improved their skills especially in ICT. One teacher shared, *"It was stressful to figure everything out, but I cannot deny that it helped me to improve myself as a teacher in terms of technology skills..."*

Another teacher added, *"Blended learning during the pandemic has pushed teachers to enhance their tech skills and adapt to new teaching methods, which has definitely improved our professionalism."* According to this interview's responses, teachers had to learn how to effectively use multiple digital tools and platforms, manage online classrooms, and create engaging and interactive literature content for students. This experience has not only improved their technical abilities but also fostered an innovative approach to teaching.

This table shows the participants' responses for Question 3.

Question 3: What are the problems faced by teachers when designing the Literature lesson for blended learning during the pandemic?	
Teacher A:	<i>"There were a lot of problems that teachers had to face during that time. One thing was about online classroom participation. The attendance of the students was really bad because some of them didn't have access to the internet. Students from less fortunate families had to share the devices with their siblings. You see...teaching Literature involves a lot of reading and practice. If the students cannot participate in the class, they might be left behind. That's why I had to create online activities that they can access anytime."</i>
Teacher B:	<i>"Since we had to shift to online methods, there were a lot of issues with internet connectivity and access to devices for both teachers and students. I remembered I had to change my wi-fi plan twice just to find the best internet connection. But, I always have ready-made activities for the students through Google Classroom like objective and subjective questions."</i>
Teacher C:	<i>"One of the main problems is ensuring that all students have equal access to the necessary technology and internet connectivity. There's also the issue of balancing the workload...creating content that's equally effective online and offline takes a lot of extra planning and effort."</i>
Teacher D:	<i>"One major issue is we need to ensure all students have access to technology and have a stable internet connection since some students live in rural areas. Due to the line, students can't even join class. so as teachers, we needed to find ways to overcome these problems that at times, was something that we could not fix."</i>

Table 3: Interview Question 3

Theme #5 Connectivity and Access Issues

When it comes to blended learning, internet connectivity was found as a problem for the teachers. The teachers had to face challenges related to students' access to stable internet connections. *"The attendance of the students was really bad because some of them didn't have access to the internet."*

Another teacher added that internet connectivity was one of the major issues not only for the students but for the teachers as well, *"Since we had to shift to online methods, there were a lot of issues with internet connectivity and access to devices for both teachers and students. I remembered I had to change my wi-fi plan twice just to find the best internet connection."*

DISCUSSION

All four participants agreed that technology comes hand in hand with blended learning. They highlighted the vital role that digital tools and platforms played in facilitating their teaching during the pandemic. Teachers integrated various digital tools, such as online quizzes, Google Classroom, Canva and Padlet, to facilitate learning and maintain student engagement during the pandemic. These tools not only provided alternative means of instruction but also enabled interactive and collaborative learning experiences especially during the pandemic, which are crucial for subjects like English Literature that rely heavily on discussion. According to Bond et al. (2020), the use of digital platforms and tools can significantly enhance student engagement and learning outcomes by providing diverse and interactive instructional methods.

Traditional methods, such as reading short stories or novels and engaging in face-to-face discussions, are considered as common methods. These activities allow for immediate feedback and strong interaction, which are crucial for developing critical thinking and interpretative skills. However, digital methods add an extra layer of interactivity and accessibility. For instance, teachers used platforms like Google Classroom to facilitate discussions and quizzes, enabling students to engage with the material asynchronously. This approach allowed students to reflect on their readings at their own pace and participate in discussions even outside regular class hours. This hybrid method provides a better way for the teachers during the critical times of pandemic. This approach is consistent with the findings of Hrastinski (2019), who emphasises that blended learning, combining both traditional and digital methods, can provide a more flexible and engaging learning experience.

The rapid shift to online teaching posed significant challenges for teachers, requiring quick adaptation to new technologies and teaching methods. Participants reported initial difficulties in documenting and delivering content online, as well as managing the increased workload. Teachers reported that they had difficulties adapting to the new teaching methods, particularly those who were less familiar with digital tools and online teaching methods. The transition required significant effort and time to become proficient with new technologies, which added to the already demanding responsibilities of teaching during a global pandemic. These findings align with the research of Cutri et al. (2020), who explored the challenges educators faced during the sudden transition to remote teaching due to the Covid-19 pandemic. The study found that many teachers struggled with the learning associated with adopting new technologies and digital platforms. This challenge was more identified among teachers who had little prior experience with online teaching.

Teaching during the global pandemic provided a new skill for the teacher in which it taught them to always be prepared in case something similar happens again. In other words, during this period, one of the teachers highlighted the importance of being ready for unexpected challenges and equipped educators with strategies and tools to handle similar situations in the future. This preparedness is a crucial takeaway from the pandemic experience, as it ensures that teachers are better equipped to handle any future disruptions, whether they are related to natural disasters, or other unforeseen events. This finding is supported by the work of Trust and Whalen (2020), who emphasise that the Covid-19 pandemic has prepared educators to develop resilience and flexibility. Their study suggests that teachers' experiences during the pandemic have fostered a mindset of continuous learning and adaptability, which is essential for dealing with future educational disruptions.

The finding from the third interview question led to the issues in students' access to technology and internet connectivity. Participants highlighted that students from less fortunate families struggled to participate in online classes due to a lack of devices or reliable internet access. This issue is supported by the research of Van Lancker and Parolin (2020), who discuss the digital divide exacerbated by the Covid-19 pandemic. Their study found that students from low-income families were disproportionately affected by the shift to online learning due to

limited access to digital devices and stable internet connections. Students who were unable to join online classes may have missed out on important tasks which are essential for subjects like English Literature. This situation forced teachers to find alternative ways to reach and support these students.

CONCLUSION

This study provides a process of how blended learning was implemented during a period of global crisis. Researchers can make use of this study to gain information into the practical applications of blended learning models and the effectiveness of various digital tools and platforms in facilitating education. Understanding these implementations helps researchers create more defined theoretical frameworks and practical guidelines for blended learning in future educational settings. Not only that, the study highlights how blended learning and technology can be effectively integrated into literature teaching, revealing both the benefits and challenges to this subject area.

The study aids teachers to have a clear understanding of how blended learning integrates technology with traditional teaching methods. This knowledge assists teachers be aware of the benefits of using digital tools and platforms to deliver interesting lessons, leading to more effective and engaging learning experiences for students. The study's findings have several important implications for students, particularly regarding their learning experiences in a blended learning environment. The study highlights how blended learning combines traditional methods with digital tools, offering students with interesting and more diverse learning experiences. By integrating online quizzes, interactive platforms, and multimedia resources, students benefit from varied instructional approaches that can cater to different learning styles and preferences.

Therefore, future studies should expand the implementation of blended learning in subjects other than English Literature. It is highly recommended to investigate how blended learning strategies are applied and adapted across various disciplines, such as science, mathematics, or social studies. Wider studies can provide detailed understanding of its effectiveness and identify the best practices for each discipline. Future studies should include a focus on students' perspectives and experiences with blended learning. Understanding how students perceive with blended learning environments can offer various different findings into what works well and what needs improvement from the learner's viewpoint. Investigating the effectiveness of specific digital tools used in blended learning is essential for optimising educational outcomes and ensuring that technology serves as a beneficial complement to traditional teaching methods.

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STUDENTS' AND TEACHERS' PERCEPTION ON USING VIDEO STREAMING PLATFORM TO ENHANCE LISTENING SKILLS

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ABSTRACT

This study investigated the influence of video streaming platforms on listening proficiency at a public school in Sabah, Malaysia. The research utilized a qualitative approach, interviewing five English teachers and five students from Form 3 to Form 5. The research focuses on the theories of cognitivism and content-based learning (CBL) to explore cognitive and instructional merits of using video streaming platforms. Based on the findings, the content of video streaming platforms significantly sustains students' engagement and motivation. At the same time, teachers commented on the content being interesting, relevant, and in multimedia format. It combines visual and auditory sense for their engagement. Among the challenges for the students was that they rely on subtitles on the video. The teachers suggested that the platform content is authentic similar to that on social media, and students can receive other messages beside the expected ones. For effective teaching, the use of some features could be of help considering that buffering poses a major challenge, and some students rely on subtitles. Nevertheless, they could make the process simpler and with motivation by their utilization on the students' part. The medium is significantly used in distance learning where it is effective since students rely on the authentic content and are engaged. Thus, the platform should be used for effective proficiency in listening with assistance from its video features.

Keyword(s): *Listening Skills, Content Based Learning (CBL), Video Streaming Platform, Cognitivism*

INTRODUCTION

This study examines the role of Information and Communications Technology (ICT), particularly video streaming platforms such as YouTube and Netflix, in enhancing listening skills in English education. ICT, encompassing modern gadgets and software applications, facilitates easier access to information and communication. The study highlights the educational application of these platforms, noting their widespread use in both government and non-government educational institutes. Video streaming platforms, with their diverse English language content, are valuable tools for improving listening skills, crucial for students' oral tests and overall learning progress. By investigating the perceptions of both teachers and students, the study aims to assess the

effectiveness of these platforms in enhancing listening skills and improving English language learning environments.

LITERATURE REVIEW

Theoretical / Model Approach

This study employs a Cognitivism approach to explore the impact of video streaming platforms on enhancing listening skills. Cognitivism focuses on the internal cognitive processes involved in learning, such as memory, attention, and problem-solving (Kurt, 2023; Mcleod, 2023). By examining how video content engages mental processes, the study aims to assess how features like pause, rewind, and interactive elements contribute to cognitive processing and language acquisition. The study will analyze whether repeated exposure to video content aids memory consolidation and if problem-solving opportunities within videos enhance comprehension and retention. Additionally, it will explore the effectiveness of feedback mechanisms and collaborative features in supporting learning and metacognitive awareness (tutor2u, 2022).

In conjunction with Cognitivism, the study will utilize Content-Based Instruction (CBI) to integrate subject matter with language learning (Peachey, n.d.). CBI emphasizes using content-rich materials to improve both language proficiency and subject knowledge, which has shown to increase student engagement and motivation (Marcu, 2022). This approach will be applied by selecting video content relevant to the curriculum and assessing its impact on vocabulary development and comprehension. The research aims to evaluate how integrating academic topics into video content affects students' listening skills, motivation, and overall language acquisition, offering insights into effective strategies for utilizing video streaming platforms in educational settings.

Listening Skills

Listening skills are crucial in learning English as a second language, with Ahmed (2015) highlighting that adults spend approximately 45% of their time listening, more than speaking, reading, or writing. Despite its importance, many students find listening to be one of the most challenging aspects of language acquisition, encompassing both comprehension and acquisition (Learning English Curriculum, n.d.). Factors such as rapid speech, background noise, and limited vocabulary can complicate understanding, while strategies like content prediction, summarization, and keyword identification can aid comprehension (Ahmed, 2015).

Recent studies have examined the effectiveness of different multimedia tools in improving listening skills. Tilwani et al. (2022) investigated the use of TED Talks among Indonesian EFL learners, finding that participants who used TED Talks showed superior listening performance compared to those using traditional DVDs and CDs. Similarly, Istiqomah (2019) reported significant improvements in listening ability among students who used YouTube videos, with participants enjoying the enhanced engagement and motivation provided by the audiovisual medium. Damronglaohapan et al. (2013) observed positive student attitudes towards using English movie clips on YouTube, which improved listening skills and vocabulary understanding compared to textbook CDs. Furthermore, Saban Kara (2023) demonstrated that integrating Google Trends to select trending, authentic materials for English classes significantly enhanced students' listening and speaking skills, as well as their motivation. These studies collectively underscore the potential of multimedia tools in enriching language learning experiences.

METHODOLOGY

The study involved five teachers and five students from a public school using purposive sampling to ensure a range of proficiency levels (Nikolopoulou, 2022; Hassan, 2022). The participants were informed about the study's purpose and their rights, including voluntary participation and the option to withdraw at any time. The primary data collection tool was structured interviews with open-ended questions, aimed at capturing detailed insights into the experiences and perceptions of both students and teachers regarding the use of video streaming platforms for listening skills improvement. The interviews were conducted privately, recorded, and transcribed for accuracy and comprehensive analysis.

Data analysis employed thematic analysis to identify recurring themes and patterns in the interview transcripts, facilitating a deeper understanding of the impact of video streaming on listening skills development. The research adhered to strict ethical standards, ensuring participant anonymity and voluntary consent. The study aims to provide valuable insights into how video streaming platforms, such as YouTube, can be leveraged to enhance listening abilities, contributing to more effective educational strategies in this area.

FINDINGS

The study investigated the impact of video streaming platforms on enhancing listening skills among English teachers and secondary school students. The research involved five teachers and five students, selected for their diverse experiences and perspectives, and utilized the school's modern technological facilities to integrate video content into the learning environment. Teachers employed a variety of multimedia tools, including documentaries and interactive videos, to engage students and improve their listening comprehension. Students from different academic levels provided insights into how visual and auditory elements of videos facilitated their listening skills development.

The study adopted content-based learning (CBL) and cognitivism as theoretical frameworks, ensuring the validity and reliability of the research. CBL integrates subject matter with language acquisition, while cognitivism focuses on cognitive processes involved in information processing. To ensure robust data collection, the study implemented pilot testing, expert reviews, triangulation, member checking, and intercoder reliability. Semi-structured interviews with participants were transcribed and analyzed thematically to uncover key patterns and themes related to engagement, comprehension, and challenges faced in using video streaming platforms.

Findings indicated that video streaming platforms significantly enhance student engagement and motivation, improve comprehension and retention through multimedia elements, and offer exposure to diverse accents. Challenges such as potential distractions, over-reliance on subtitles, and technical issues were identified. However, effective use of features like playback controls and interactive elements mitigated some of these issues. Overall, the study highlights the positive impact of video streaming on listening skills and provides valuable insights into optimizing the integration of digital tools in educational settings.

Teachers' Perception on Using Video Streaming Platform to Enhance Students' Listening Skills

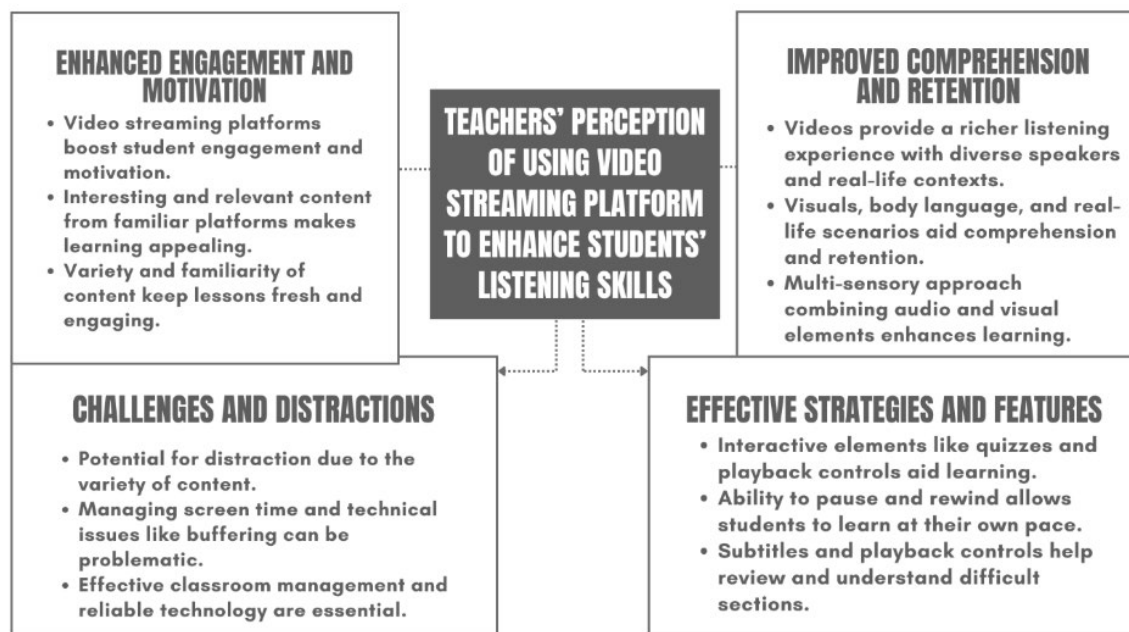


Figure 1: *Main Theme for Teachers' Perception on Using Video Streaming Platform to Enhance Students' Listening Skills*

Enhanced Engagement and Motivation

Analysis of the interviews indicates that for the students, the use of video streaming platform during the lessons significantly boosts the level of engagement and motivation. Teacher A explains "students react positively to the listening exercises if they are based on some interesting context taken from the video streaming platforms". This observation was also mentioned by Teachers B, D, E, who also indicated that the variety of the content and familiarity of the platforms create the entertaining context during the lessons, which help students to stay engaged. Thus, it is beneficial to utilise multimedia contents that are not new but familiar and enjoyable for the students in the classroom and at the same time, help them to improve.

Improved Comprehension and Retention

Teachers also reported that video streaming platforms help students understand and remember information clearly. Teacher A reported that "a greater amount of speakers, accents and real-life context provide a much richer listening experience." Teachers B, C, D, and E also reported that the visual aspect, body language and real-life scenario shots produces a better understanding of the videos and thus improved comprehension and retention. The implication here is that combining audio with the visual improves students' information retention in that two or more of the bodily organs take part in analyzing or synthesizing the information.

Challenges and Distractions

While there are numerous benefits of this exercise, a few challenges have been identified. Teacher A said that "one challenge is the potential for distraction. With so much content available, it's easy for students to lose focus or stray off-topic". Teachers B, C, D, and E voiced their agreement

and added that balancing screen time and combating buffering levels were concerns. These challenges underscore the importance of classroom management and the provision of good technology in ensuring that students stay focused and on topic.

Effective Strategies and Features

In order to address this issue, teachers proposed some solutions. For example, teacher A mentioned that the prevailing technologies allowed including “interactive elements, like quizzes or the ability to pause and rewind, allowing students to engage with the material at their own pace”. In addition, playback controls and subtitles emphasized by teachers B, C, D, and E also provide students with an opportunity to view difficult sections several times. As a result, some problems related to learning speed are solved as these features are useful for low proficiency students.

Students’ Perception on Using Video Streaming Platform To Enhance Their Listening Skills

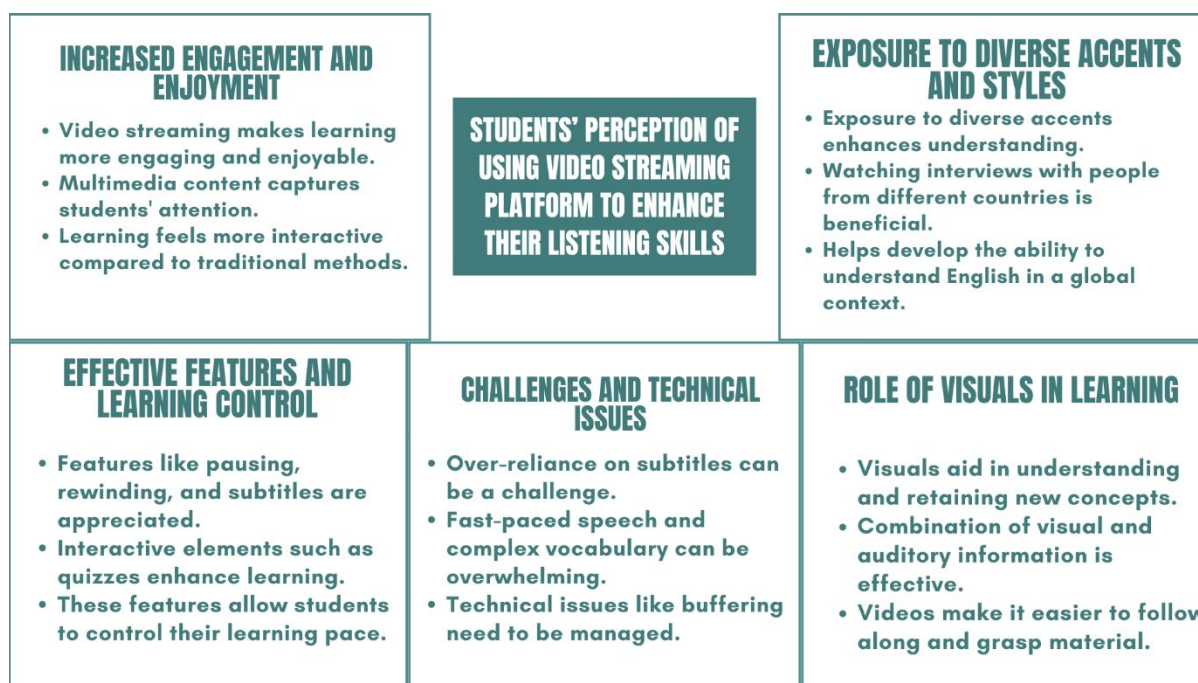


Figure 2: *Main Theme for Students’ Perception of Using Video Streaming Platform to Enhance Their Listening Skills*

Increased Engagement and Enjoyment

Reportedly, students mentioned that learning with video streaming platform is more engaging and fun. According to student B, “it’s more fun than just listening to audio”. In a similar way, student E reported that “videos, with their dynamic content and engaging formats, make learning feel more interactive.” Probably, these descriptive modes of video content naturally help it hold a person’s attention compared to exposure to only dry theoretical material.

Role of Visuals in Learning

It was found that the significance of the visual was expressed in the majority of comments. Thus, commenting on the video, Student A identifies that “the visuals are definitely a big help.” Similarly, Student C also agrees that “the visuals make it easier to follow along.” Accordingly, it can be suggested that combining visual and auditory information, students better perceive new concepts and can remember them. In such a way, video streaming may be regarded as a tool that can boost the effectiveness of developing listening skills.

Exposure to Diverse Accents and Styles

The findings stated that two students – A and E, mentioned exposure to a variety of accents and speaking styles among their learning strengths. For example, Student A stated, “I feel like I can understand many types of accents now”. In turn, Student E reported watching interviews of professionals from many different countries. This piece of the learning process is highly valuable as it ensures a more comprehensive understanding of the English language spoken by people of various backgrounds. Over recent years, when globalization keeps expanding, this skill has become especially relevant.

Challenges and Technical Issues

The use of video streaming platform may be beneficial for the students. However, there are also challenges faced by the students. Student A said, “One challenge I face is relying too much on subtitles.” Fast speakers or advanced vocabulary was also pertinent to Student B, Student C, and student D who said, “Fast-speaking and investment in new vocabularies are somehow overwhelming.” Buffering which can be attributed to the slow internet connection is also a challenge that was brought to light by Student B and Student C. From these positives and challenges, it is possible to devise ways of striking a balance.

Effective Features and Learning Control

Both students and teachers found that “something that was the most appealing was the pause, playing, going back again and the subtitle”. Student A mentioned “interactive elements, like quizzes or the ability to pause and rewind”, and student B appreciated that “if I don’t get a word, I can read it”. Therefore, video streaming platforms enable students to control the pace of learning and consolidate their understanding, which makes them a flexible tool for improving listening skills.

To sum up, it can be concluded that the analysis shows that video streaming is generally positively perceived by both teachers and students as an activity that attracts learners and provides valuable visual accompaniment, motivating learners to hone their listening skills while presenting them with various accents and ways of talking. Nevertheless, addressing some of the identified issues with the use of subtitles and fast speech, and some technical aspects would be necessary. In addition, it is suggested that the use of tools and capabilities provided by the platform, along with the control of management aspects, helped to enrich the learning experience. In this way, video streaming can be used as an effective way to improve listening skills in English, with motivational advantages for this multimedia discipline and learning, with the practical applications of modern technology.

DISCUSSION

The interviews with teachers revealed that video streaming platforms significantly enhance student engagement and motivation. Teachers observed that students show increased

enthusiasm when lessons incorporate multimedia content from familiar platforms, which often includes dynamic visuals and relatable contexts. This aligns with findings from a previous study by Sembiring and Katemba (2023), which similarly highlighted the motivational benefits of using multimedia content like YouTube videos. Both studies emphasize that incorporating engaging and familiar video content can transform traditional learning into a more interactive experience, thereby fostering greater participation and interest in listening exercises.

Teachers also noted that video streaming platforms improve comprehension and retention of material. The multi-sensory approach provided by combining audio with visual elements, such as body language and real-life scenarios, enhances students' understanding and memory of the content. This observation is consistent with Sembiring and Katemba's (2023) study, which found that YouTube educational videos improved listening comprehension through a similar multi-sensory engagement. The diverse range of speakers and accents in videos contributes to a more comprehensive listening experience, helping students become accustomed to various speaking styles and pronunciations.

Despite these benefits, teachers identified challenges such as potential distractions and technical issues. The vast amount of content available online can lead to loss of focus, while buffering and unreliable internet connections can disrupt the learning process. This is in line with Sembiring and Katemba's (2023) findings, which also noted the need for further research to address these challenges. Effective classroom management and reliable technology are crucial to minimizing these drawbacks and maximizing the educational benefits of video streaming platforms.

Students similarly reported increased engagement and enjoyment with video streaming platforms, noting that the dynamic and interactive nature of videos makes learning more appealing compared to traditional methods. They emphasized the importance of visual context in aiding comprehension and retention, which is corroborated by Sembiring and Katemba (2023). Additionally, students valued exposure to diverse accents and speaking styles, which helps improve their listening skills. However, they also faced challenges such as over-reliance on subtitles and technical issues. Both studies suggest that while video streaming platforms offer significant advantages, ongoing research is needed to refine their use and address associated challenges effectively (Sembiring & Katemba, 2023).

Implications and Recommendation for Future Research

The study suggests several implications for integrating video streaming platforms into educational practices. Incorporating multimedia content that students find enjoyable and relevant can significantly enhance engagement, motivation, comprehension, and retention. Educators should focus on using video content with diverse accents and real-life contexts to provide a richer listening experience. Additionally, ongoing teacher training is essential to effectively integrate video content, manage potential distractions, and utilize interactive elements. Professional development programs should equip teachers with the skills to select appropriate videos and create engaging lessons while sharing best practices to enhance overall teaching effectiveness.

Addressing challenges associated with video streaming platforms is also crucial. Effective classroom management strategies are needed to minimize distractions and manage screen time. Solutions to mitigate technical issues, such as buffering and unreliable internet connections, should be explored to ensure a smooth learning experience. Future research should focus on developing strategies to overcome these challenges and testing their effectiveness in real classroom settings. This approach will help maximize the educational benefits of video streaming platforms while minimizing potential drawbacks.

Future research directions should include investigating the long-term effects of video streaming on student learning outcomes and examining how various types of video content impact different student demographics and learning styles. Additionally, studies should explore effective classroom management strategies, the role of interactive features in enhancing engagement, and solutions for addressing technical limitations. By focusing on these areas, future research can build on current findings to optimize the use of video streaming platforms, improving listening skills and overall student engagement in educational settings (Sembiring & Katemba, 2023).

CONCLUSION

This study highlighted the significant potential of video streaming platforms in enhancing listening skills among secondary school students. The findings show that integrating multimedia content into the educational process can greatly increase student engagement and motivation. Video content, which combines visual and auditory information, aids in comprehension and retention, providing a richer and more engaging learning experience than traditional methods. However, it is essential to address challenges such as potential distractions, technical issues, and the over-reliance on subtitles to ensure that these platforms are used effectively in the classroom.

The implications of these findings suggest that educators should regularly incorporate dynamic and relevant multimedia content into their lesson plans to make learning more appealing and effective. Professional development for teachers is crucial to equip them with the skills necessary to select appropriate videos, create interactive elements, and manage potential distractions. Furthermore, sharing best practices among teachers can foster a collaborative environment that enhances overall teaching effectiveness. Future research should continue to explore the long-term effects of video streaming on student learning outcomes, focusing on diverse content, classroom management strategies, interactive features, and technical limitations.

By addressing these areas, future studies can provide deeper insights and practical solutions for optimizing the use of video streaming platforms in educational settings. The goal is to enhance the effectiveness and accessibility of these tools, ultimately improving listening skills and overall student engagement. This research underscores the importance of a balanced and well-managed approach to integrating video streaming into the curriculum, ensuring that the benefits are maximized while minimizing any potential drawbacks.

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EXPLORING THE IMPACT OF USING WEBLOG AS A TOOL TO ENHANCE SECONDARY SCHOOL STUDENTS' WRITING PROFICIENCY IN MALAYSIA

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ABSTRACT

The purpose of this research is to explore the impact of using weblogs in teaching English writing skills to a group of secondary school students in Malaysia. This was done by investigating the students' attitude towards the use of weblog in improving their writing abilities. In this study, a total of nine Form 2 students were selected at random and data were collected through face-to-face interviews. The respondents were asked about their perceptions of the use of weblogs. The findings suggest that the use of weblogs enhanced students' writing skills and led them to achieve higher results in grammar, writing structure and the use of the appropriate vocabulary. The students admitted that they benefited from the feedback given through weblogs as it assisted them in enhancing their writing and also creativity with a view of writing more. The application of weblog in learning was effective and the feedback and interaction significantly helped in the students' learning. Based on the findings of the study, it is recommended to use weblogs in teaching English language with a focus on writing with proper support and supervision from the teachers. More studies should be conducted to establish weblog use in education in the long-run.

Keyword(s): *ESL, weblog, writing proficiency, secondary education, student perceptions*

INTRODUCTION

In Malaysia, English is considered as second language and the official language of the country is Bahasa Malaysia (Thirusanku & Md Yunus, 2014; Che Musa et al., 2012). Despite the status of English as a second language, university graduates are still known to have poor mastery of the language. To tackle these problems, elaborate support systems are being introduced to improve students' language skills particularly in writing. The Malaysian government has also adopted the CEFR into the education system for the country to conform to the international standards with the goal of attaining bilingualism (Ministry of Education, 2013).

Writing proficiency is a fundamental skill imparted during the formative years of education and continues to develop throughout one's lifetime. Learning to write in a second language, especially English, is important at school age since it enhances children's learning and speaking

abilities. It is the ability of a writer to put down ideas on paper in terms that the readers can understand. However, writing in a second language poses some difficulties; more so to the secondary school students in Malaysia where English is taught as the second language and taught in accordance to the Ministry of Education curriculum. The problem of low levels of writing among learners continues to be a challenge and this calls for new strategies and approaches in teaching language.

Weblogs or blogs have become popular among lecturers and teachers in universities and schools for improving writing skills. They allow learners to write, get feedback and learn in groups thus making them effective tools in the classroom. Incorporation of weblogs into education acknowledges the necessity of proficient writers in the learning and development of the learners involved in second language acquisition.

The purpose of this research is to explore the impact of using weblog on students' secondary school students' writing skills. In particular, it aims to discover how weblog can enhance the writing skills and the students' attitudes towards the use of weblog as a learning tool. In achieving these objectives, the research seeks to contribute to the existing body of knowledge in the use of weblog in the improvement of language acquisition and make recommendations that can be implemented in the classroom. Therefore, this study addressed the following research questions:

1. What is the impact of using weblogs on English writing proficiency among secondary school students in Malaysia?
2. What are the perceptions of students towards the use of weblog to enhance writing proficiency?

LITERATURE REVIEW

Weblog

According to Maharani et al. (2021), the term "weblog," derived from "log" and "web," is synonymous with "blog" or "blogging." Blogs are web sites on which people post their works which are open to the public and can be used to solve problems of grammar. In this case, teachers can be able to use blogs to give feedback that will improve the writing skills of the students. According to Galien & Bowcher (2010), weblog is a medium of written communication and interaction which is advantageous to many languages. Mynard (2007) affirms that weblog helps to improve students' English skills while Richardson (2009) indicates that early adopters of blogs in education have creatively incorporated the technology to improve learning.

Campbell (2003) defined weblog as an online journal in which students can easily post their opinions and update the internet with their comments, which are response based on the entries. Eastment (2005) defines weblog as a form of online diary or logs of thoughts and reflection whereby the author can post anything and the readers respond by posting their comments. Weblogs are useful in writing classrooms as they enable the students to write on different topics, at their own pace, for different readers, and without the interference of the teacher in terms of correcting and grading (Sun, 2010).

Weblogs are tools for narrating events, sharing multimedia content, and documenting the information. After their availability in the public domain in 2000, blogs have been applied in higher learning institutions and research. They assist learners to move from surface to deep level of learning and promote analysis, relationship and context. Blogs as well are learning journals, which

help in the self-analysis and the development of good study habits that are extensive and intensive.

There are multiple reasons to incorporate blogs in education: they offer students an audience for their writing, offer more reading, develop a classroom culture, increase motivation and establish an archive of student writing (Stanley, 2005). The use of blogs is innovative and gets students interested, however, continued use needs motivation to be made to be done.

Information and Communication Technology (ICT) and Its Impact on Education

According to the UNESCO's International Institute for Educational Planning (IIEP) (2017), Information and Communication Technologies (ICT) refers to a broad category of technology tools and resources that are employed in the processes of transferring, storing, generating, disseminating or even swapping information. They include computers, websites, blogs, e-mail, live broadcasting technologies such as radio, television, web casting, recorded broadcasting technologies such as podcasting, audio/video players and storage devices and telephony including fixed, mobile, satellite and video conferencing.

Information and Communication Technology (ICT) is present in society today and it influences different sectors in life including education as highlighted by Yunus, Lubis & Lin (2009). ICT has emerged as a tool to support students in improving the effectiveness of their learning process and as a tool to help teachers with administrative responsibilities, as an information and communication system (Ministry of Education, 2003). The Ministry of Education in Malaysia has formulated policies on ICT as an application for everybody, in teaching and learning and in enhancing management effectiveness (Ministry of Education, 2003). As one of the basic skills needed in life, literacy, numeracy and ICT is essential in preparing for the current challenges (Simmons & Hawkins, 2009). Malaysia has greatly adopted ICT in its education sector and the government has spent a lot of money in putting ICT facilities in schools (Ebrahimi & Yeo, 2013; Mohamad et al., 2018). Teachers undergo training on how to incorporate technology in teaching which makes them ready to use ICT in their practice (Termit & Ganisha, 2014). ICT improves the quality of teaching and learning since it helps students to be more independent, capable and creative (Jo, 2013). It also fosters the higher order thinking skills that are prerequisite for future learning through critical and creative thinking facilitated by technology as stated by Ali (2012).

Writing Skills

Writing is one of the four major skills in language use which include reading, listening and speaking. According to Harmer, writing is a way of using written symbols to convey language, ideas, feelings, and opinions which is a specialized skill because of the involved process. Writing can be described as the ability to think critically in order to come up with good paragraphs that can be understood easily. In contrast to speaking, writing enables a person to think and consult such tools as dictionaries and grammar books to back up the statements that are being made (Harmer, 2007).

Writing is always a challenge especially when it is in English as a second language because grammar has to be precise. Williams (2014) also points out that writing is the way of thinking, thus acknowledging the necessity to teach students critical thinking. Writing is an intellectual and affective process which employs thoughts, reason and feelings in the transmission of messages. Skills in language, especially the written language, are innate but have to be developed through learning and practice. According to Hyland (2003) writing is defined as the ability of the writer to

apply his or her grammatical and lexical knowledge to combine different elements of writing and individual experiences.

Writing proficiency refers to the ability to communicate ideas, information, and thoughts effectively and skillfully through written language. Effective communication can be achieved by the writers and this involves writing in a clear, coherent, and grammatical manner, with proper choice of words and language suitable for the intended audience and the intended use of the document. This efficiency comprises of things like grammar, syntax, organization, style, and the capacity to relay messages that can be understood from the reader. In addition to this, proficient writers also have mastery in language standards, adequate understanding of the subject matter and flexibility in writing styles. The process of attaining writing proficiency is not an easy one but require practice, feedback and time to enhance writing skills.

The grammatical structure plays a large role in the quality of the writing, and the writing courses assist people to form their attitudes to certain subjects. Writing makes it possible to capture ideas, feelings and thoughts, and therefore it is useful in understanding the writer's thought processes and ways of solving problems. It includes the arrangement of words, sentences, and paragraphs to express one's view and can be taken to an art that will be enjoyed by the public. Writing is a unique aspect of language that is an off-line way of communication and self-organizing.

Theoretical Approach

The integration of ICT and the use of a student-centered approach incorporate technology as an effective tool to support the learning process with the focus on students as active participants, collaborators and learners. The selected key components for the research are presented in the following theoretical conceptual framework in Figure 1. The objectives focus on the use of weblog on the improvement of the English writing skills of the secondary level students in Malaysia. For this research, it is crucial to have suitable theories or models that provide guidance for its development. The research emphasises two primary theories: constructivism and blended learning. The main focus is on the learner's language learning process, rather than pedagogy.

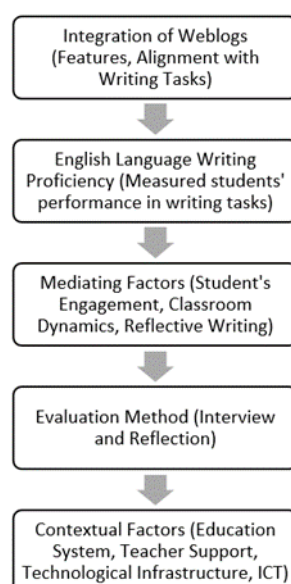


Figure 1: Conceptual Framework

A. Interactionist Second Language Acquisition (SLA) theory

This research is grounded on the Interactionist Second Language Acquisition (SLA) theory that was propounded by Michael Long in the late 1980s. According to Long's theory, social interaction and communication play a very important role in the process of language acquisition. By Long's (1981) definition, 'input' is the language used, and 'interaction' is the role of the language used, for example, as an expansion, repetition or clarification (Tran, 2009). The Interactionist SLA theory also emphasises on meaningful communication in language acquisition and learning and argues that language mastery occurs through meaningful interactions, exchange of ideas and the use of interactive language skills. The Interactionist SLA theory is used in this thesis to examine how weblog can enhance the writing ability of the secondary-level students in Malaysia. The theory of interactive and communicative language experiences of weblog is in accordance with the dynamic and participatory weblog. The study looks at how weblogs enable effective and meaningful communication and interaction towards improvement of English writing skills among students.

B. Influence on Writing Proficiency

The Interactionist SLA theory postulates that learners acquire language by interacting with other people, co constructing meaning, and feedback. In this regard, weblogs are used as open Web-based discussion forums where students can complete real-life writing assignments as well as get feedback and interact with others. It is believed that this kind of learning will help improve the learners' ability to write English. In this respect, the study seeks to confirm the theoretical framework by showing that weblog-based interactive language experience enhances the writing skill.

C. Students' Perspectives

Since the Interactionist SLA theory focuses on social interaction and communication, it is important to know students' views on the use of weblog. The research aims at identifying the students' objective and qualitative perception of weblogs as a tool for enhancing writing skills. This is in accordance with the theory which postulates that the learning of language involves the use of interactive and communicative features.

D. Collaborative Writing

Collaborative Writing (CW) is a process through which the creation of a single text is done by several authors where all the authors are given equal contribution to the final work (Storch, 2011; Coffin, 2020). Team work enhances student participation and interactivity since it is based on students' involvement (Coffin, 2020; Aldossary, 2021; Sanvicens, 2020). As a form of CW, weblogs or blogs offer a special kind of environment that benefits cognitive processes and the audience (Coffin, 2020). Through collaborative blogging, there is growth in idea generation from a group, which enhances the understanding of the readers' expectations as well as the variation in ideas.

CW on weblogs enables students to improve their linguistic proficiency by focusing on language details, sharing ideas and completing written projects that can demonstrate various aspects of language. This makes the group to be responsible and solve problems together thus producing good writing as compared to the traditional method (Coffin, 2020). To enhance CW, weblog should be used in the most effective manner possible by the educators and this can be done by creating activities that will encourage cooperation and interaction. The use of CW tasks on weblogs enhances students' writing skills as they are able to benefit from the collective

knowledge of their peers (Tuan & Nga, 2022). Debates, peer reviews and group revision sessions on the weblogs not only help develop writing skills of the students but also help to cultivate a culture of cooperation and mutual assistance among the students. Different type of writing tasks allow the students to write on different types of subject and in different styles which helps them to understand the writing standard and the way the audience reads the content (Etfiti & Wahyuni, 2021).

METHODS AND SAMPLING

This is a qualitative study that investigated the extent to which weblog contributed to the writing skills of secondary school students at a public school in Sabah, Malaysia. To avoid bias in the selection of participants the method of random sampling was employed. In this particular research, the sample comprised of 10 students from Form 2 who were first selected to participate in the interview and reflection activities. After reviewing the responses, it was found that one of the students' answers were unrelated and cannot be included in this research. Therefore, in order to achieve data saturation, the sample was reduced to 9 pupils only.

The study's instrument was an interview question that was open ended. Interviews are very useful for the research to probe into the participants' espoused beliefs and attitudes that cannot be assessed obviously by asking and a questionnaire (Mackey & Gass, 2015). The instruments used for the second research question are adopted from (Perumal & Ajit, 2022) that concerns students' attitude towards the blogs on the improvement of writing skills.

The research aimed to understand how weblogs can enhance students' writing skills through a systematic approach. The process involved examining various sources, technological resources, and real-world examples of using weblogs in educational settings. The second week focused on existing literature and preparing for classroom research, focusing on strategies to integrate weblogs into teaching. The third and fourth weeks were dedicated to data collection, ensuring resources and backup plans were prepared to overcome potential obstacles. The fifth to seventh weeks involved conducting qualitative interviews with students in their classrooms, allowing them to provide detailed accounts of their experiences and perspectives on weblog use. The data was then systematically analyzed, identifying patterns and themes, and drawing conclusions on the efficacy of weblogs in enhancing students' writing abilities. The research aimed to provide a comprehensive understanding of how weblogs can improve students' writing skills through a rigorous and organized data collection and analysis process.

The study maintained the validity and reliability of its data through a meticulous and thorough research methodology. The use of diverse data collection techniques ensured a precise and dependable understanding of secondary school students' perspectives on using Weblog in writing activities, thereby enhancing the overall quality and credibility of the research.

RESULTS/FINDINGS & DISCUSSION

Research Objective 1: Impact of Using Weblog on English Proficiency Among Secondary-level Students

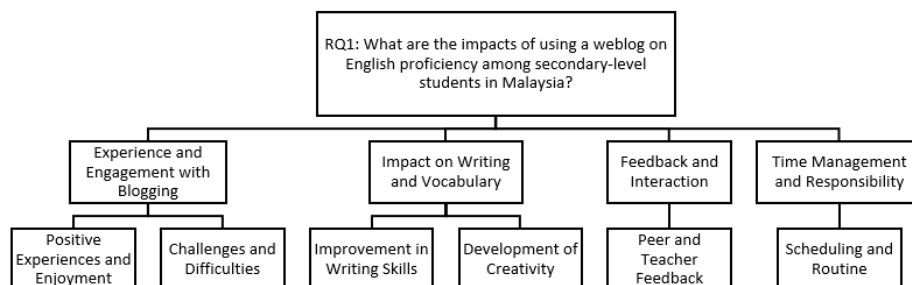


Figure 2 : Themes and Sub-Themes for Impacts of Using Weblog on English Proficiency among Secondary-level Students in Malaysia

Experience and Engagement with Blogging

This captures the essence of students' interactions with the weblog as a learning tool. The responses indicate a predominantly positive experience, characterized by high levels of engagement and enjoyment. Students reported that blogging was not only a fun and creative activity but also a valuable part of their learning process. For instance, Student 1 described the blogging experience as enjoyable and collaborative, emphasizing the teamwork involved: "It was fun because we did a lot of teamwork writing together". Similarly, Student 3 appreciated how blogging helped to keep their mind active and engaged: "I think that blogging helps keep our mind fresh and engaged". This aligns with the findings of Perumal and Ajit (2022), who highlighted the role of digital tools in making learning more enjoyable and engaging for students. According to Yunus et al. (2013), the integration of blogs in the classroom fosters a more interactive and engaging learning environment, which helps maintain student interest and motivation.

Impact on Writing Skills

The primary benefit of blogging for students' writing skills is the opportunity for continuous practice and improvement. The iterative nature of blogging allows students to review and revise their work regularly, which leads to tangible enhancements in their writing capabilities. For instance, Student 1 noted the direct benefits of this practice: "For example I can fix my errors from my previous post in the next post". This iterative process not only helps students correct their mistakes but also strengthens their ability to write with greater precision and clarity. Similarly, Student 9 observed a noticeable increase in their use of advanced vocabulary, attributing this to their blogging experience: "I have started to use more advanced words which I didn't know before". This progression is indicative of how blogging encourages students to expand their lexical repertoire and apply new vocabulary in meaningful contexts (Raya Fitri Sari, 2015).

Development of Creativity

In addition to technical improvements, blogging significantly contributes to the development of students' creative writing skills. Studies such as those by Suadah (2014) and Mabuan (2018) have also highlighted the importance of blogging in fostering creativity among students. The freedom to explore diverse topics and express personal viewpoints allows students to experiment with

different writing styles and genres. This creative liberty is instrumental in cultivating a more nuanced and expressive writing voice. For instance, Student 2's approach to blogging exemplifies this creative freedom. Student 2 noted, "Honestly, I just write whatever comes in mind." This free-flowing style, where ideas are expressed spontaneously, fosters a high degree of creative freedom. By allowing thoughts to flow naturally without rigid constraints, students like she can develop original and inventive content.

Similarly, Student 9 highlighted the dual impact of blogging on writing skills and creativity. She stated, "It enhanced our writing skills and creativity." This perspective underscores how the act of regularly creating content not only hones technical writing abilities but also stimulates creative thinking.

Feedback and Interaction

Students have expressed a strong appreciation for the feedback they receive through blogging, recognizing its crucial role in their learning journey. The process of receiving and acting on feedback is viewed as a significant aspect of their academic development. For example, Student 1 emphasized the benefits of receiving feedback through blogging, stating: "I think it's better receiving feedback through the internet rather than the traditional classroom feedback." Student 1's perspective highlights the importance of constructive feedback in refining her blogging work and enhancing her writing abilities.

Student 2 also reflected on the value of feedback, noting: "The way I improve my blogging skills is by taking feedback seriously and applying it." This shows Student 2's proactive approach to using feedback as a tool for personal growth. By applying feedback, she demonstrates how students can leverage feedback to enhance their blogging skills effectively.

Student 5 further supported this view, sharing: "Feedback is very helpful and encourages me to do better." Student 5's experience illustrates how feedback can boost students' confidence and contribute to their writing improvement. This aligns with the findings of Yunus et al. (2013), feedback in blogging activities enhances students' motivation and engagement, leading to better learning outcomes. This collective emphasis on feedback underscores its role not only in improving individual writing skills but also in fostering a supportive learning community where students can collaborate and learn from one another.

Time Management and Responsibility

Balancing blogging with other academic responsibilities was identified as a major challenge by the students. The need for consistency in blogging was another challenge highlighted by the students. Maintaining a regular blogging schedule requires effective time management skills, which can be difficult for students to develop. This challenge underscores the importance of providing students with guidance on how to manage their time effectively and maintain a consistent blogging routine. This aligned with Suadah (2014), where she mentioned that incorporating structured guidance and time management strategies into blogging activities can help students overcome these challenges and maximize the benefits of blogging.

Research Objective 2: The Perceptions of Students Towards the Use of Weblogs to Enhance Writing Proficiency

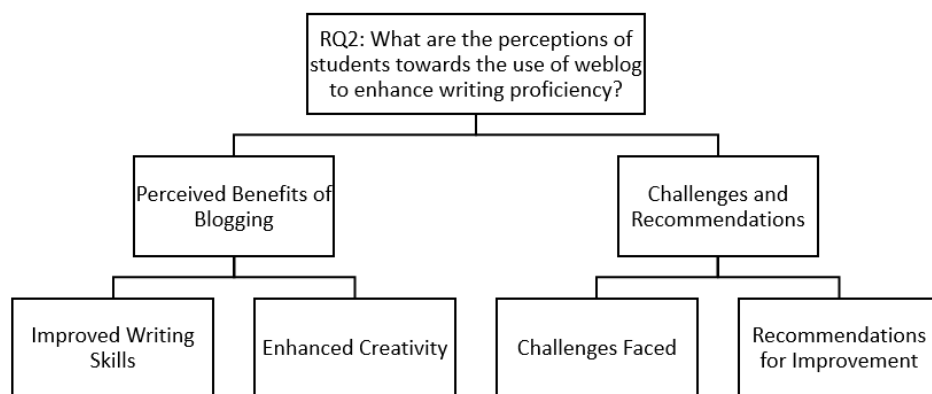


Figure 3: Themes and Sub-Themes for the Perceptions of Students towards the Use of Weblog to Enhance Writing Proficiency.

Perceived Benefits of Blogging

Students have identified several notable benefits of blogging, including enhanced writing skills, increased creativity, and higher motivation. One of the most frequently cited advantages is the improvement in writing skills. Blogging provides students with a regular platform to practice writing in a structured yet creative format. For instance, Student 5 observed, “Blogging improved my writing skills and enhanced my confidence skills”. This statement reflects how blogging serves as an effective medium for students to refine their writing abilities and also their confidence in writing. This finding is supported by Mabuan (2018), who found that students considered blogging a viable medium for enhancing their writing skills despite technological limitations.

In addition to improving writing skills, blogging is seen as a valuable tool for fostering creativity. Students appreciate the freedom blogging offers to explore various topics and express their ideas in imaginative ways. Student 8 highlighted this creative aspect, simply stating, “A creative mind.” This freedom to experiment and innovate is crucial for developing a more engaging and dynamic writing style.

Challenges and Recommendations

Despite the many benefits of blogging, students also identified several challenges and provided constructive recommendations for improving the blogging experience. One major challenge mentioned was time management. Students noted that balancing blogging with other academic responsibilities can be difficult. The need for consistency in blogging was another challenge highlighted. Student 7 pointed out the importance of “Maintaining consistency,” underscoring the struggle to keep up with regular blogging while managing other commitments. Additionally, students experienced initial difficulties in organizing their thoughts effectively, which can hinder the quality of their blog posts.

To address these challenges and enhance the blogging experience, students offered several recommendations. One common suggestion was the use of advanced vocabulary to enrich blog content. This aligned with study by Perumal and Ajit (2022), where they mentioned that addressing these challenges is essential for maximizing the benefits of blogging in educational settings.

Students also called for more structured guidance from teachers to better support their blogging efforts. For example, Student 9 recommended, "Use more blogging to complete assignments and write more in blogs." This suggests that integrating blogging more deeply into regular assignments could provide students with additional practice and reinforce their writing skills. By implementing these recommendations, educators can offer more targeted support and help students overcome the difficulties associated with blogging, ultimately maximizing its benefits. As highlighted by Syaiful (2018), providing structured guidance and support can help students overcome initial difficulties and make the most of blogging as a learning tool.

CONCLUSION

The study demonstrated that blogging is a powerful tool for enhancing students' writing abilities, providing continuous practice and opportunities for improvement. It also encourages creativity by allowing students to explore a wide range of topics and express their ideas in unique ways. Moreover, the interactive nature of blogging promotes collaborative learning, enabling students to learn from one another and build a supportive community.

The chapter further discussed the implications of the study, noting that weblogs can boost motivation, improve writing skills, and increase student participation in writing activities. It emphasized the importance of incorporating multimedia elements to enrich the learning experience and the need for effective feedback and assessment strategies to fully leverage the benefits of blogging.

Suggestions for future research included expanding the demographic scope to include students from different educational levels and school types, conducting quantitative analyses to complement qualitative findings, exploring teacher perspectives, investigating the long-term effects of blogging on writing proficiency and creativity, and developing strategies to address the challenges of integrating blogs into education.

In summary, this study highlights the potential of weblogs as a valuable educational tool for enhancing writing skills and creating a more engaging and collaborative learning environment. The findings offer valuable insights for educators and policymakers looking to integrate technology into the classroom and point to areas for further research to maximize the benefits of weblogs in education.

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FOSTERING ESL STUDENTS' MOTIVATION IN WRITING THROUGH THE INTEGRATION OF ICT: A FOCUS ON TEACHERS AND STUDENTS

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ABSTRACT

This study investigated the motivation in English writing by using Information and communication technology (ICT) in a public secondary school. The objectives of this study are to examine the impact of using ICT on ESL students' motivation to engage in writing skills, and to explore how teachers incorporate ICT into ESL writing instruction to enhance motivation among students. This study used qualitative approach as the main approach by implementing semi-structured interview and open-ended questionnaire as the instruments. A total of eight respondents including two English teachers and 6 students participated in this research. The results revealed that ICT significantly enhances student motivation and engagement, making the learning more enjoyable and less monotonous, helping students clarify doubts and develop ideas more quickly especially in writing lesson. Implications of the study are enhanced student engagement and motivation, and improved learning and understanding in English writing lessons. Future research for this study is recommended due to the fact that majority of secondary schools in Malaysia such as rural area might need a better ICT implementation especially in English writing lesson. Addressing these issues could involve exploring how to improve ICT infrastructure, provide targeted professional development for teachers, and develop strategies to incorporate technology into curricula more effectively.

Keyword(s): *ESL writing, motivation, ICT, impact, engagement*

INTRODUCTION

Information and communication technology (ICT) has been a worldwide phenomenon since the birth of devices such as television, radio, telegraph and much more. Throughout history, human civilization has been using many different types of ICT to communicate and share information with each other. Fu (2013) stated that the internet is full of resources, and information can be learned via audio files, visual displays, video clips, and more. The use of ICT for educational purposes and instruction has also become widespread across the world. This has helped to close the gap of communication so that students and educators can make use of ICT effectively for teaching, learning, and assessment. Likewise, schools in Malaysia advocate for the use of ICT in lessons. The use of ICT can have a huge impact on the mastery of difficult subjects such as English.

In English language learning, there are four types of skills that must be mastered by the learners which are speaking, listening, reading, and writing. This study focuses on writing skills because it is one of the most difficult skills to master. The use of ICT can be a motivational factor to increase students' interest in mastering writing. It is crucial to emphasize students' motivation for learning the English language, as it plays an important role in making them effectively utilize ICT for educational purposes.

This study centers on delving into the effects of integrating technology into secondary education, specifically how it impacts students' academic performance and engagement. The primary goal is to investigate how introducing digital tools and resources in the classroom influences both learning outcomes and students' overall interest and participation. The core idea is based on the belief that effectively integrating technology has the potential to enrich traditional teaching methods, injecting more dynamism and interactivity into the learning process. Through an exploration of the connections between technology usage, academic success, and student engagement, the research aims to provide valuable insights for educators, policymakers, and researchers. Ultimately, the findings aim to guide the development of strategies to enhance the educational experience in school.

There are two objectives in this study; to examine the impact of using ICT on ESL students' motivation to engage in writing skills, and to explore how teachers incorporate ICT into ESL writing instruction to enhance motivation among students.

LITERATURE REVIEW

Motivation in Learning

One of the past studies that are related with motivation is The Importance of Students' Motivation for Their Academic Achievement – Replicating and Extending Previous Findings by Steinmayr et al. (2019). The objective of this study was to determine if the findings reported earlier could be duplicated by assessing ability self-concepts, task values, goals, and achievement motives at the same level of specificity as the achievement criteria.

This study's results indicated that examinations of relative importance indicated that, among the factors studied, domain-specific ability self-concept, motives, task values, and learning goals excluding performance goals accounted for a noteworthy portion of the variance in grades, with ability self-concept emerging as the most influential predictor among all the factors considered.

Writing Skill in Education

In Malaysia, writing skills are one of the most important elements of ESL teaching. However, there are obviously some challenges when teaching ESL writing. Palanisamy et al. (2021) prove that proficiency in writing skills encompasses not only mastery of grammatical and rhetorical devices but also competence in conceptual and judgmental elements. Students express their thoughts using everyday language in both spoken and written forms, and grammar, playing a crucial role in writing, provides essential information for readers to understand the intended meaning (Palanisamy et al., 2021).

ICT in Education

Pheng et al. (2021) emphasized that in contemporary society, technology is extensively utilized by students, particularly those born after 1995, identified as Generation Z, who are considered digital natives, having grown up in the digital era and being accustomed to incorporating technology into their everyday routines. On the other hand, Malaysian ESL teachers are recognized for employing conventional methods and advocating the utilization of model essays as an instructional approach for teaching writing skills to students (Pheng et al., 2021).

Theoretical Approach

The selected theory is Self-Determination Theory where the hypothesis suggests that goal-directed actions are influenced by three inherent psychological requirements such as autonomy or the desire to have control over one's actions, competence or the aspiration to achieve desired results and attain mastery, and relatedness or the need to establish connections with others within every individual (Wang et al., 2019). Wang (2019) also stated that there exist four primary categories of motivation or behavioral regulations characterized by varying levels of self-determined motivation which are intrinsic, identified, introjected, and external motivation.

As per the Self-Determination Theory literature and the motivational sequence outlined by Vallerand et al. (1999, as cited in Wang et al., 2019), it is theorized that when the psychological needs of students are fulfilled, there would be a positive correlation with autonomous motivation and as a result, this autonomous motivation is expected to increase enjoyment and perceived value, along with reduced feelings of pressure.

METHODS AND SAMPLING

Various research methods exist, each employing distinct instruments for data acquisition. These diverse methods may involve the use of instruments like questionnaires, interviews, laboratory equipment, or software tools, each chosen to suit the nature of the data being sought. The thorough consideration of research methods is essential for ensuring the robustness and validity of the research outcomes. In this study, the researcher used qualitative approach while interview as the methods.

This research focuses on secondary school teachers and students from a public school in Sabah, Malaysia. The total samples for this study are eight respondents consisting of two groups of teachers and students; 2 teachers and 6 students. 6 of the respondents are female and the other 2 are male.

In this research, the interviews and questionnaires were conducted inside of the school area with an optimum place to make sure that the respondents are comfortable answering the questions. As for the respondents among the teachers, the interviews were conducted after they are free from any classes on that particular day. On the other hand, questionnaires were distributed to the second group of respondents which are the students. Table 1 indicates the participants' demographic information.

Table 1: Participants' demographic information.

Names	Gender	Age
T1	Female	31
T2	Female	46

S1	Female	16
S2	Female	16
S3	Male	13
S4	Male	13
S5	Female	13
S6	Female	14

FINDINGS & DISCUSSION

The study revealed that ICT significantly enhances student motivation and engagement, making the learning more enjoyable and less monotonous, helping students clarify doubts and develop ideas more quickly especially in writing lesson.

Research Objective 1: To examine the impact of using ICT on ESL students' motivation to engage in writing skills.

Students' Engagement and Motivation

Integrating ICT into learning can enhance the overall experience. Students listened to music while studying or watch educational videos, which can create a more relaxed and enjoyable atmosphere. This approach helps alleviate boredom and fatigue, making learning more engaging. For example, S4 mentioned,

(1) I feel fun when using ICT in writing lesson.

Learning and Understanding

The instant availability of information enables students to swiftly resolve uncertainties and reinforce their understanding. This quick access to resources can speed up the learning process. When it comes to writing, the students must be provided with multiple sources of information to cater their creativity. As a proof, S6 stated,

(2) I can make the essay faster than before.

Hypothetical Scenario Without ICT

Without multimedia tools, the learning experience may become more monotonous, potentially reducing student interest and motivation. Traditional teaching methods might be less engaging, particularly for students who are accustomed to digital technologies. When students are exposed to diverse multimedia resources, they are more likely to stay interested and motivated, as these tools can present information in more relatable and accessible ways. S3 explained,

(3) ...if ICT is not being used in English writing lesson, most people will not be interested to learn English writing lesson.

Research Objective 2: To explore how teachers incorporate ICT into ESL writing instruction to enhance motivation among students.

Motivation and Autonomy

Incorporating ICT tools like videos and interactive quizzes into lessons enhances the learning experience, making it more engaging and enjoyable for students. Malaysian ESL teachers are known for using traditional methods and promoting the use of model essays as a strategy for teaching writing skills to students (Pheng et al., 2021). In other words, using traditional method in teaching cannot boost the students' motivation in English writing lesson. T1 emphasizes that,

- (4) We can use ICT to look up at sentence examples, and give students new ideas to consider in their writing.

Additionally, T2 described,

- (5) ...educational websites or online quizzes can make learning more fun and interactive, which helps keep their interest levels high.

Classroom Dynamics and Students' Behavior

Students generally show greater interest and enthusiasm when ICT is incorporated into the classroom, which results in higher levels of participation and increased confidence. YouTube, especially with features like captions and customizable settings such as font size and color (known as enhanced captions), significantly improved learners' English writing accuracy over a five-month period (Alobaid, 2021). T2 explained that,

- (6) Over time, they become more comfortable and confident with the technology, which is reflected in their writing.

Furthermore, T1 similarly saying,

- (7) My students are always excited every time I bring ICT into classroom, or when we go to the computer lab.

CONCLUSION

Generally, researcher is recommending for future research on this study due to the fact that majority of secondary schools in Malaysia such as rural area might need a better ICT implementation especially in English writing lesson. Addressing these issues could involve exploring how to improve ICT infrastructure, provide targeted professional development for educators, and develop strategies to incorporate technology into curricula more effectively.

The results from this study indicate that ICT greatly boosts student motivation and engagement by making learning more enjoyable and dynamic through the use of multimedia resources and interactive quizzes. These tools reduce monotony, assist students in resolving uncertainties, and accelerate their idea development.

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ICT USAGE IN TESL EDUCATION: INSIGHTS AND OBSTACLES FACED BY TEACHER-TRAINEES IN KOTA KINABALU

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Abstract

This study explores the integration of Information and Communication Technology (ICT) in English language learning among TESL teacher-trainees in Kota Kinabalu, Malaysia. Since English is a compulsory subject in Malaysian education, the government has been placing increasing focus on ICT use to improve language learning. In the past two decades, much has changed in policy and practice to create more positive perceptions of ICT as a possible solution; but while these shifts may now make sense on paper, several obstacles remain for making changes effectively simply by introducing yet another new technology. The main objectives are to find out TESL teacher-trainees' perception towards usage of ICT in classroom and obstacles in using ICT faced by TESL teacher-trainees in classroom. Shortage of technological infrastructure, technology access, and trained teachers on the usage of ICT are some challenges. In addition, different perceptions among teacher-trainees indicate issues such as low self-confidence in ICT usage. This paper uses a mixed-methods approach, using both quantitative questionnaires and qualitative interviews to capture the trainee experience. Using a purposive sample of 88 TESL trainees, primarily practicum participants in Sabah, this study employed a mixed-methods approach with quantitative questionnaires and qualitative semi-structured interviews. Fifteen trainees were selected for interviews to provide in-depth insights. The significant finding concludes a strong and positive correlation between teacher perception towards ICT usage in the classroom. Nevertheless, lack of resources, and training may hinder the effectiveness of the ICT. The knowledge gained will help to direct policy and curriculum development-informed teacher training aimed at increasing the use of ICT in English instruction.

Keyword(s): *Integration, TESL Teacher-Trainees; Perceptions of Teachers Towards Teaching English Language Through Educational Technology, English Language Learning, Educational Technology.*

INTRODUCTION

Malaysia has been actively involved in the adoption of Information and Communication Technology (ICT) in Education, specifically English language learning over recent years. Almost every one of us knows the relevance of English, in terms of worldwide conversation ability and this is why it has been made a priority by Malaysian authorities to introduce technology as part of language learning solutions among students. It is a basic requirement at national schools that

all primary and secondary pupils need to pass this subject to be promoted in the academic system (Abu Bakar, et.al., 2021). Many schools are faced with several challenges in their technology infrastructure, including insufficient access to up-to-date hardware and software, high-speed internet connections, and trained teachers. The views and beliefs of the teachers in utilizing ICT are important for effective classroom use. Most of the previous research in this area is outdated and has not even been conducted with TESL teacher-trainees (Melor et al., 2012; Mohamed Amin Embi & Azmi Abdul Latiff, 2004; Nair et al., 2012; Raman & Halim Mohamed, 2013; Yunus,). Moreover, the lack of research on teachers' perceptions of ICT in teaching classrooms mainly investigated English language instruction in schools situated Kota Kinabalu Sabah indicates that more inquiry and empirical study are needed to better understand the unique concerns, beliefs, and practices surrounding TESL teacher candidate integration of ICTs in their classrooms within this region. This gap can provide useful information for institutions and teacher-trainees that aim to cater their assistance and techniques according to the concerns of educators in Kota Kinabalu, Sabah. This research aims to provide a basis for informed integration of ICT into TESL education by investigating the issues related to ICT usage among TESL teacher-trainees in Kota Kinabalu's secondary schools by aiming to answer these 2 research questions:

1. What are TESL Teacher-Trainees' perception towards ICT usage in the classroom?
2. What are the obstacles in using ICT faced by TESL Teacher-Trainees?

LITERATURE REVIEW

Technological Pedagogical Content Knowledge (TPACK)

The TPACK (Technological Pedagogical Content Knowledge) framework acknowledges that these elements can never be separated: TK, PK, and CK constantly interact in dynamic iterations. It helps teachers make good use of technology in conjunction with specific needs in their content areas (Koehler, 2006). TPACK helps teachers to improve teaching and students' learning processes in the classroom (Shafie et al., 2022; Raman, 2014).

Technological Knowledge (TK) Understanding of available technology tools and resources, which are impactful hardware/configurations/software/platforms. Knowledge in PK: Knowledge of the pedagogical strategies and practices used to teach students within a certain age, includes an understanding of instructional design, classroom management control techniques, or assessment. CK has an in-depth familiarity with the content itself and its main concepts, theories, etc. The TPACK framework blends these domains and sets the stage for proactive, productive technology use.

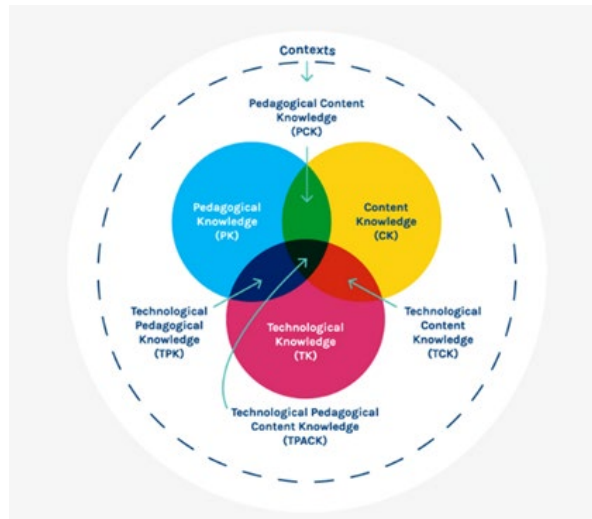


Figure 1: Technological Pedagogical Content Knowledge (TPACK)

Technology Acceptance Model (TAM)

IT User Acceptance Behavior: The Technology Acceptance Model (TAM) as presented by Davis in 1986 argues that user acceptance behavior should be explained through the perceptions of individuals concerning ease of use and usefulness of technology combined (Ma & Liu, 2011). As mentioned earlier, the technology adoption model is based on perceived utility (PU) and ease of use as determinants of adopting a new technology (Liao et al., 2018). These two factors arguably shape the extent to which TESL teacher-trainees are willing and able to embrace new technology. The TAM model has shown numerous theoretical and practical developments of the TAM model (Technology Acceptance Model, n.d.)

Connectivism

First, connectivism is an attitude to learning that George Siemens suggests should replace 'organized instruction' as the way we address and think about the information overloads in education. It states that we learn by connecting information, and the people from which we find this information (Connectivism n.d.-a). This highlights the importance of placing exact knowledge and competencies of importance in a society oriented toward knowledge (Herlo, 2017).

Social Learning Theory

The Social Learning Theory by Albert Bandura focuses on the importance of social interaction and observational learning. Social learning theory posits that individuals learn by observing their social milieu and imitating the behaviors of others if they find it to be pleasurable or rewarding (Nabavi & Bijandi, 2011). Thus, the learning environment has to be adjustable and compatible with real-life elements due to infinite technology enhancement (Abdullah et al., 2020).

Technological Pedagogical Content Knowledge (TPACK)

This model is called the TPACK framework, an invaluable concept for discussing and describing what happens in educational settings (technology pedagogical content knowledge). It posits that these three realms of expertise must all be utilized together for successful technology integration. This research focuses on the outlooks of TESL teacher-trainees towards ICT usage in their classroom and also uncovers some impediments they encounter which are namely attitude, technology access, adequate training to handle it properly without failure as well as language

education approaches are not compatible with the use of ICT. Addressing current research limitations, this study focuses on local educators' experiences in Kota Kinabalu, potentially influencing educational policies, curriculum development, and teacher training programs in TESL and ICT integration.

Arumugam Raman, & Abdul Halim Mohamed (2013) conducted a similar study on ICT usage matters among Malaysian secondary school English teachers. A lack of knowledge of different ICT tools and applications was considered one of the main challenges (Raman & Halim Mohamed, 2013). This paper uses the Technological Pedagogical and Content Knowledge (TPACK) model to help explain satisfaction/usage of Information Technology in ICT teaching by applying thematic analysis. Integrating TPACK, TAM, connectivism, and social learning theory forms a comprehensive framework for effectively utilizing technology in education. TPACK outlines the methodology for seamlessly integrating content, pedagogy, and technology. TAM sheds light on teachers' motivation by focusing on how useful they find the technology and its ease of use. Connectivism emphasizes learning through networks, while social learning highlights collaboration; both are enhanced by TPACK's strategy for creating engaging lessons rich with interactive tech elements.

METHODOLOGY

Research Design

The design used in this study is a mixed-methods research combining quantitative and qualitative methods. Mixed methods research, MM): marrying qualitative and quantitative inquiry to provide clearer answers (Schoonenboom & Johnson, 2017). The research targets TESL teacher-trainees in secondary schools within Kota Kinabalu, Sabah. This sample is chosen because it includes those who are closely involved and well-experienced in the usage of ICT within educational settings. Currently, about 100 TESL teacher-trainees are on practicum in various schools within the Sabah area.

Purposeful sampling, also referred to as judgmental (Tongco, 2007); These TESL teacher-trainees are currently using ICTs in their teaching approach therefore they serve as a good sample for investigating the practicalities, perceptions, and patterns of ICT accomplishment in education. This group contains 88 people in our sample, making it pretty representative of a variety of experiences and viewpoints.

A structured questionnaire with a Likert scale based on the study by Arumugam Raman and Abdul Halim Mohamed (2013) was used to determine perceptions & concerns in ICT application among TESL teacher-trainees. The responses on ICT in education were tabulated into a five-point Likert scale between strongly agree and to do so will not be too supportive. The survey features different question types; this helps in a comprehensive collection of data.

A set of semi-structured interview questions were written for the qualitative component of the study. The questions are designed to draw out responses that reveal the experiences, difficulties, and opinions TESL teacher-trainees have regarding using ICT in teaching practice. Data Collection Semi-structured interviews (Jamshed, 2014) are a good way of reaching individual concepts with flexibility as participants sometimes find it difficult to articulate their thoughts.

To distribute a survey containing similar question items with the Likert scale format, Google Forms was used to collect quantitative data. This approach guaranteed the organized and smooth collection of data. The qualitative data were collected through semi-structured interviews that took place either face to face or over the Internet using video conferencing according to participants' preferences and practical availability. All the interviews were recorded and then transcribed.

Descriptive statistics were calculated, including means and standard deviations, as well as inferential statistical tests (eg correlation analyses) using SPSS for the quantitative data. Factor analysis and thematic analysis were conducted. Quantitative data were collected using Google Forms to distribute and gather responses to the Likert scale questions. Semi-structured interviews were conducted either in-person or via video conferencing, depending on participants' preferences and logistical constraints.

FINDINGS

Based on the results shown in Table 1, we can analyze the distribution of the variables of Teacher Perception and Usage using skewness and kurtosis. Firstly, the skewness for Teacher Perception is -0.521 with a standard error of 0.257, and for Usage, it is -0.280 with the same standard error. Since both skewness values are negative, this indicates that both distributions are slightly left-skewed, meaning the data has a tendency to have a longer left tail. Furthermore, looking at kurtosis, Teacher Perception has a kurtosis value of -1.330 with a standard error of 0.508, and Usage has a kurtosis value of -1.423 with the same standard error. Given that both kurtosis values are negative, it shows that the distributions are platykurtic, which means they are flatter than a normal distribution. Therefore, it can be concluded that both variables display distributions that are not perfectly normal, with slight left skewness and flatter peaks.

Test of Normality

Variables	N	Skewness	Std. Error	Kurtosis	Std. Error
Teacher Perception	88	-0.521	0.257	-1.330	0.508
Usage	88	-0.280	0.257	-1.423	0.508

Table 1: Distribution based on Skewness and Kurtosis

	Kolmogorov-Smirnov	Shapiro-Wilk
	Statistic	df
Teacher Perception	0.307	88
Usage	0.246	88

Table 2: Kolmogorov-Smirnov and Shapiro-Wilk Normality

Table 2 examines the normality of the variables of Teacher Perception and Usage. Based on the results of the Kolmogorov-Smirnov test, Teacher Perception shows a statistic of 0.307 with a significance level (p-value) of less than 0.001, and the Shapiro-Wilk test presents a statistic of 0.819 with a p-value also less than 0.001. Similarly, for Usage, the Kolmogorov-Smirnov test results in a statistic of 0.246 with a p-value less than 0.001, and the Shapiro-Wilk test gives a statistic of 0.871 with a p-value less than 0.001. Since the p-values for both tests and both variables are less than 0.001, we reject the null hypothesis that the data follows a normal distribution. Consequently, it can be concluded that the distributions of Teacher Perception and Usage significantly deviate from normality.

Descriptive Analysis

Variables	Mean	Std. Deviation
Teacher Perception	3.7386	0.79542

Usage	3.8580	0.84891
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Table 3: Descriptive Statistics

Based on the results in Table 3 and using the mean score interpretation from Nur Farahana (2018), we can analyze the descriptive statistics for Teacher Perception and Usage.

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
In my view, ICTs are more powerful in teaching English than traditional methods.	5 5.7%	10 11.4 %	15 17.0 %	31 35.2%	27 30.7%	3.74	1.18
In my view, ICTs can complement teachers in teaching English effectively.	2 2.3%	20 22.7 %	7 8.0%	30 34.1%	29 33.0%	3.73	1.21
I acknowledge that ICTs can facilitate the rapid dissemination of knowledge and information.	5 5.7%	7 8.0%	11 12.5 %	35 39.8%	30 34.1%	3.89	1.14
In my view, ICTs are more effective for teaching and learning English than traditional textbooks and printed materials.	6 6.8%	12 13.6 %	9 10.2 %	59 67.0%	2 2.3%	3.44	0.99
I believe that ICT use has significant value for the development of TESL and ESL communities.	4 4.5%	15 17.0 %	10 11.4 %	32 36.4%	27 30.7%	3.72	1.20
ICT use enhances the educational and instructional experiences of ESL learners in learning English.	3 3.4%	9 10.2 %	14 15.9 %	10 11.4%	52 59.1%	4.13	1.21

Table 4: Descriptive Statistics of Teacher Perception

Table 4 shows that the highest mean score of 4.13 is associated with the statement "ICT use enhances the educational and instructional experiences of ESL learners in learning English," indicating strong agreement among teachers on the positive impact of ICTs in this context.

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
ICTs (including computers, videos, hardware, software, and networks enhance my knowledge and skills as a TESL trainee teacher.	2 2.3 %	5 5.7 %	10 11.4%	42 47.7%	29 33.0%	4.03	0.94
ICTs are essential tools for TESL trainee teachers in teaching English.	8 9.1 %	7 8.0 %	8 9.1%	38 43.2%	27 30.7%	3.78	1.23
ICTs can serve as advanced instructional tools for teaching English to ESL learners.	10 11.4 %	8 9.1 %	10 11.4%	32 36.4%	28 31.8%	3.68	1.32

As far as I know, ICTs can be used to manipulate instructional materials effectively in TESL.	8 9.1 %	10 11.4 %	15 17.0%	30 34.1%	25 28.4%	3.61	1.26
ICT use enhances the educational and instructional experiences of TESL trainee teachers in teaching English.	7 8.0 %	9 10.2 %	10 11.4%	30 34.1%	32 36.4%	3.80	1.29
ICTs support TESL trainee teachers in preparing and designing TESL materials more effectively.	7 8.0 %	8 9.1 %	12 13.6%	27 30.7%	34 38.6%	3.83	1.27

Table 5: Descriptive Statistics of Usage

Table 5 indicates that the highest mean score of 4.03 is associated with the statement "ICTs (including computers, videos, hardware, software, and networks enhance my knowledge and skills as a TESL trainee teacher," demonstrating a strong consensus among respondents on the beneficial impact of ICTs in enhancing their knowledge and skills.

Correlation Analysis

Dependent Variable	Independent Variable	Correlation (r)	Sig. (p-value)	Strength
Usage	Teacher Perception	0.883**	<.001	Very Strong Positive

Table 6: Pearson Correlation

Table 6 shows a significant positive correlation between Teacher Perception and Usage ($r = 0.563$, $p < 0.01$, indicating that a higher perception of ICTs' benefits is associated with higher usage.

Semi-structured interview

	Questions	Answers
1.	Could you kindly furnish me with details on your teaching career and your present status as a TESL teacher-trainee?	<i>"I am currently a TESL teacher-trainee in Kota Kinabalu's high schools area for 3 to 4 months"</i>
2.	Have you had any official instruction or been exposed to information and communication technology (ICT tools and technologies throughout your TESL education?	<i>"Yes, I do have formal training in using various ICT tools during my second and third year in TESL program"</i>
3.	Please provide a detailed account of your utilisation of ICT tools and technology in	<i>"I use a lot of ESL websites and educational platform to make my lesson more interesting. I also use LCD and speakers most of the time to engaging my students"</i>

	your TESL education or teaching activities.	
4.	Could you provide concrete instances of how you have included ICT into your instructional approaches or curriculum?	<i>"I've used Quizizz and Kahoot to include English quiz for my students"</i>
5.	What obstacles or complexities have you faced while using ICT in your instructional approaches?	<i>"My main obstacles that I faced is weak internet connection and sometimes blackout in certain time. Also, I couldn't access some websites since it need to be paid"</i>
6.	Did you successfully overcome these challenges? If so, how?	<i>"Yes, I do always have backup plan such as offline game or use my own internet from handphone (hotspot."</i>
7.	How has the use of ICT influenced the teaching and learning encounter in TESL education, according to your perspective?	<i>"ICT has significantly enhanced my teaching in class since all students could be more engaging during the teaching and learning lessons"</i>
8.	Have you seen any alterations in student involvement, comprehension, or motivation when ICT is employed?	<i>"Yes, I could see students become more enjoyable and participating in the lesson when I included ICT in the lesson"</i>
9.	Which pedagogical techniques or tactics do you consider to be the most efficacious when integrating ICT into TESL education?	<i>"I think the most effective is interactive and student-centered techniques"</i>
10.	Are there any specific ICT tools or resources that you consider particularly beneficial in improving the teaching and learning process?	<i>"Websites like to create slides such as Canva, quiz such as quizizz and Kahoot are really beneficials"</i>
11.	How do you foresee the progression of ICT's involvement in TESL education in the future?	<i>"I believe ICT will become more enhance into TESL education as our ICT will become more advance"</i>
12.	Do you have any suggestions or valuable knowledge to offer	<i>"I suggest maybe more workshop that offer by schools or MOE to teachers so they can</i>

	on the use of ICT in TESL instructional approaches?	<i>always up to date and use those ICT tools in their teaching"</i>
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Table 7: Result of Semi-structured interview

DISCUSSION

TESL Teacher-Trainees' Perception Towards ICT Usage in the Classroom

Descriptive statistics for both Teacher Perception and Usage reflected high mean values (3.7386 and 3.8580, respectively across the two scales with a skewed distribution of scores in a direction suggestive of favourable attitudes toward ICT use within classroom practice. This was followed by the statement: The use of ICT enhances ESL learners' learning experience and pedagogy in English (Mean = 4.13. This reveals that most of the teacher trainees trust in the positive effect of ICT on ESL learning. Those positives perceptions of using ICT in the classroom are strongly associated with several educational theories stated in the literature review above: TAM, Connectivism, and Social Learning Theory. According to TAM if ICT tools are perceived as easy to use and beneficial, they are more likely to be adopted in teaching (Liao et al., 2018). Connectivism posits that knowledge is distributed across networks; thus, ICT plays a vital role by providing access to resources and extending learning beyond traditional boundaries. With Social Learning Theory, which stresses interaction-based learning, ICT supports communication among peers and educators by facilitating comfort in learning environment (Nabavi & Bijandi, 2011). Similarly, a study by Nguyen (2021) stated that teachers acknowledge ICT in increasing or improving teacher instructional practices and students' engagement as well as academic achievement.

Obstacles in Using ICT Faced by TESL Teacher-Trainees

TESL teacher-trainees encounter numerous challenges when integrating ICT into their classrooms, largely stemming from scarce resources, insufficient training, and negative attitudes toward technology use. Teacher Perception had a strong positive correlation with Usage ($r = 0.883$, $p < 0.001$) showing that good perceptions may lead to the use of technology by teachers as well as directly affecting the independent variable. On the other hand, negative perceptions or barriers can dramatically impede ICT utilization. Based on the interview, frequent internet connectivity issues and sporadic power cuts pose significant obstacles by disrupting lessons and impeding the regular utilization of digital tools. Furthermore, many valuable educational websites require paid subscriptions, presenting a financial hurdle for trainees seeking diverse online materials. These constraints limit the free resources available to captivate students' interest and diminish the potential effectiveness of incorporating ICT in education.

Another obstacle is the insufficient ongoing training and professional development opportunities. Although trainees receive some ICT instruction during their TESL programs, many believe more frequent workshops or practical sessions would help them remain current with new tools and teaching strategies. In the study, it was also found that teacher efficacy in using ICT and perception of available computer labs is significantly related (Kundu et al., 2020). Additionally, some trainees have noted negative attitudes towards ICT among colleagues who perceive technology as complex or superfluous. For example, Coban and Atasoy (2019) showed that better self-efficacy leads to more proficient usage of ICT in teaching practices. Addressing these

challenges through enhanced resources, continuous training initiatives, and efforts to shift perceptions could greatly enhance the use of ICT in TESL education, fostering more engaging and interactive learning experiences.

Implications of Research

The positive perception of ICT uses among TESL teacher-trainees implies the willingness to integrate new technologies into teaching. These results might inform policy-makers, to invest enough money and resources in ICT projects so that the use of technology could facilitate better effects on education. The training programs should not only provide technical skills but also focus on the ability and confidence of teacher-trainees in using information tools adequately, including both pedagogical strategies as well. Professional development and access to updated technological resources are necessary in this process for teachers to benefit from ICT correctly.

Furthermore, supporting infrastructure such as internet connectivity, technical aid and upkeep of ICT equipment is equally important to ensure a hitch-proof process in the institutionalization of Smart Education. Future research should identify the real-time hurdles, confronted by teachers and propose appropriate strategies to fulfil the potential of ICT integration across education.

Recommendations for Future Research

Thus, future research should be aimed at designing integrated training modules for both ICT skills and their pedagogical uses. Research should account for the diversity of educational contexts by conducting studies with a focus on rural and under-resourced schools as well as providing support tailored specifically towards local needs. Comparative studies within the country or internationally can further identify global trends, and good practices in ICT use. So, framing the storyline in this larger concept can lead educators to develop systematic strategies that enhance inclusive and sustainable approaches for ICT adoption, playing a significant role in ensuring an equitable quality educational system worldwide.

CONCLUSION

This study investigates the integration of Information and Communication Technology (ICT in English language learning among TESL teacher-trainees in Kota Kinabalu. Such a positive attitude is contrasted with the findings that there are many obstacles to the effective implementation of ICT as well. These challenges such as weak technology infrastructure, limited access to modern technological tools and high processing speed internet, and unskilled teachers with ICT capabilities. In addition, the heterogeneous perceptions indicate that some teacher-students encounter problems: limited self-confidence in technology use and a lack of computer-assisted instructors.

The research has shown ICT adoption depends heavily on the association of teacher perceptions and thus it indicates positive attitudes toward ICT are a strong predictor for planning to use them in their teaching practices. At the same time, this also means that negative perceptions and encountered barriers could strongly hinder effective ICT use. This study highlights the need for improved training programs for teacher-trainees to effectively integrate ICT in teaching, by enhancing their technical skills combined with pedagogical strategies. To ensure that ICT supports improved educational outcomes, a nation needs to have schemes in place that support continuous professional development; dependable technological infrastructure,

and sufficient support systems. In short, TESL teacher-trainees in Kota Kinabalu agree on the possible advantages of using ICT for English language instruction but equally emphasize that these challenges must be overcome if it is to reach its full promise. Policymakers and educational institutions should rather focus on improving the infrastructure of technology and also to train all teachers about ICT effectively.

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INVESTIGATING THE IMPACT OF WEB-BASED LANGUAGE LEARNING (WBLL) THROUGH WRITE & IMPROVE ON WRITING SKILLS IN SECONDARY SCHOOL

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Abstract

This study examines the impact of Web-Based Language Learning (WBLL) using the program Write & Improve on secondary school students' writing skills at SM St. Michael, Penampang, using the Social Cognitive Theory (SCT). The study sought to investigate students' perspectives and impact in writing through guided practice and feedback. The researcher used a two-cycle action research design that included both writing activities and open-ended surveys to collect information about students' writing performance and perceptions. Initial studies revealed that students struggled with the tool's UI and feedback mechanisms, restricting their development throughout the first cycle. However, significant increases were seen in the second cycle, with students obtaining higher CEFR bands and showing a greater grasp of feedback. Surveys revealed high satisfaction and perceived the effectiveness of Write & Improve, despite some technical issues and occasional inaccuracies in feedback. The study emphasizes the significance of teacher participation, as SCT and Vygotsky's Zone of Proximal Development (ZPD) indicate that directed learning and feedback can improve student outcomes. Researchers should conduct longitudinal investigations and perform different demographic testing. For educators, the findings emphasize optimal practices for incorporating WBLL technologies into instruction. This study adds to the growing body of knowledge about digital learning aids as well as providing ideas for better writing teaching through technology.

Keyword(s): *Web-Based Language Learning, Writing Skills, Write & Improve, Secondary School.*

INTRODUCTION

Over the last few years, there has been a significant change in education as tech-based tools such as web platforms have become an integral part of learning and teaching. Malaysia's thriving economy has readily welcomed technological advancements to improve their educational sector. One significant area of investigation is the influence of Web-Based Language Learning (WBLL) on the development of fundamental language skills among secondary school students, with a particular emphasis on writing abilities. To match with Malaysia's aim of achieving a technologically savvy workforce, recent alterations in education focus on implementing

technology-led teaching methodologies that can enhance learning outcomes (Ministry of Education Malaysia, 2017).

The study aims to explore the use of Write & Improve with Cambridge, which offers hundreds of tasks at all levels and get automatic feedback on where the writing might need improvement. The website allows students to make changes according to feedback generated to improve their writing. Despite of all the educational websites that offers benefits for learners in recent times, there is a significant gap in understanding the influence of Write & Improve on students' writing skill in English. According to Podburtnaja (2021), there have been few studies on the usage of Write & Improve as a supplementary resource for studying English, hence there is a research void. Furthermore, a study conducted by Karpova (2020) mentioned that most studies regarding the utilization of the platform – Write & Improve only being introduced without further analyzation. Although Huijser and Wali (2018) provided insights on the students' usage of Write & Improve in their study, they refrained from conducting any further examination.

Therefore, this present paper aims to investigate the impact of learning writing using Web-Based Language Learning (WBLL) through Write & Improve. To fulfill these aims, research questions need to be addressed:

1. How does Web-Based Language Learning help to improve students' writing?
2. What is the perception of Web-Based Language Learning among students?

LITERATURE REVIEW

Social Cognitive Theory by Bandura (1986)

Social cognitive theory is a generally used and scientifically proven approach for comprehending, forecasting, and figuring out how to modify human behavior. People's daily lives in contemporary society are largely shaped by the symbolic environment, according to Bandura (1986). Assimilation through technological means plays a major role in the social construction of reality and the formation of public awareness. Education has seen a paradigm shift often, with the emphasis shifting from teaching to learning. Bandura's theory of self-efficacy and self-regulation, while emphasizing the role of the social environment in the learning process, can be considered a paradigm shift within the individualistic approach. It is believed that the social environment shapes each unique human being. The collection of behavioral and environmental factors that a student may encounter can be referred to as the learning environment. Applications of information and communication technologies (ICT) might include educational resources that are available through various media and distribution channels, such as electronic self-study tools. The cognitive theory of knowledge would inspire the creation of ICT teaching techniques – web pedagogy objectives, and ways to alter a person's mental models.

CIPP Evaluation Model by Stufflebeam & Shinkfield (1985)

This study adopted the Context, Input, Process, Product CIPP Evaluation Model developed by Stufflebeam and Shinkfield in 1985. The model has been used in short and long-term studies in the United States and across the world, and its tenet emphasizes that the most essential purpose is to improve rather than to prove (Stufflebeam, 2003 as cited in Oflaz et al., 2022). The evaluation is conducted in accordance with the four components of the CIPP framework. In the Context phase of the assessment, the course instructor considers and chooses what needs to be

done. It explains why the chosen program is or will be executed. Goals, priorities, and strategies are developed in response to requirements and issues.

The key principles of this model align with the letters in CIPP - Context, Input, Process, and Product evaluation. The evaluator holds a crucial role by utilizing all four forms of evaluation to fulfill various important functions. Context evaluations help to identify the needs, challenges and opportunities present in a specific environment. They assist users of evaluation to define their goals as well as reference assessed necessities for targeted beneficiaries when appraising different programs such as school projects, instruction courses, counseling services or teacher assessment systems among others. Input evaluations are utilized to evaluate different approaches' work plans, budgets and strategies in order to assist users of the evaluation with creating better improvement efforts.

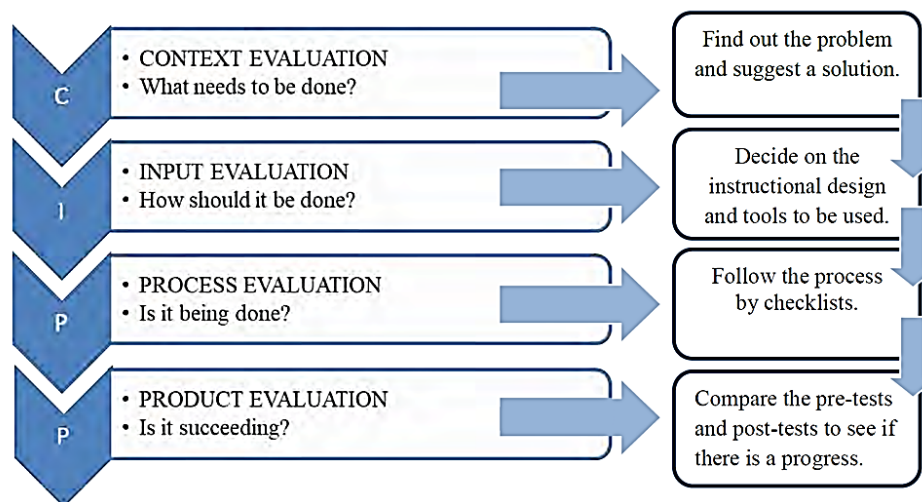


Figure 1: Adapted version of core concepts of the CIPP Model (adapted from Stufflebeam & Daniel L., 2003).

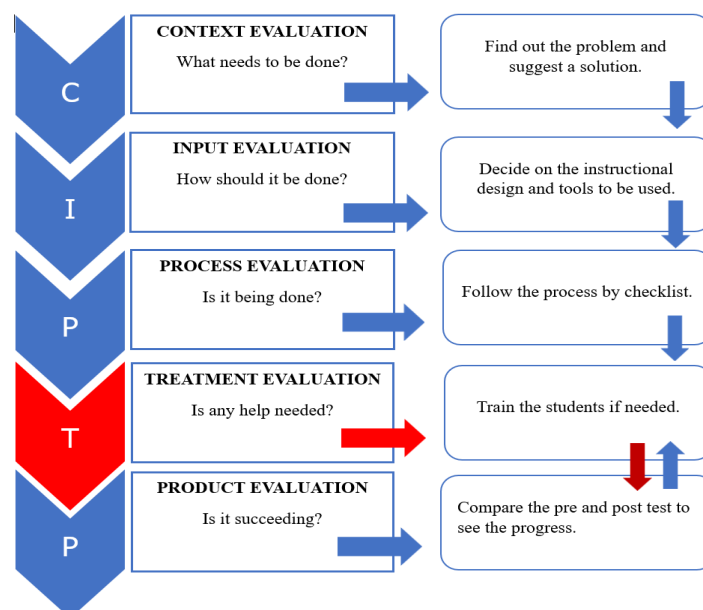


Figure 2: Revised version of core concepts of the CIPP Model

Web-Based Language Learning (WBLL)

Web-based language learning (WBLL) resources have long been popular among English language educators because they are extensive, widely available, user-friendly, and, most significantly, free access (Muftah, 2023). Several websites provide engaging games and linguistic activities to assist learners learn English efficiently. Specifically, WBLL can provide proficiency and high-quality outcomes in individual or group English learning. According to Lin., et.al. (2017), WBLL can improve language acquisition by encouraging students to participate and develop their own expertise. Poe and Elliot (2019) conducted a systematic evaluation of seventy-three papers that examined test fairness. The study identified five notable trends, including the use of internet resources in writing assessments to eliminate bias and promote fairness and validity. According to the perspective, including internet resources into testing produces neutral findings while also giving a more contextually accurate technique of evaluating individuals' genuine writing ability.

METHODS AND SAMPLING

This research design employed in this study is a qualitative method approach. The study focused on action research in an online environment except for the diagnostic writing test. The pilot test was utilized to run an error analysis on students' writing and to leverage it to Write & Improve to measure the impact of using online educational tools. Consequently, the participants were given a questionnaire to measure their perceptions of the examinee's opinions toward the implementation of Write & Improve in terms of satisfaction, efficiency, impact on writing skill, and motivation and it will be coded using content analysis.

The current study was conducted in SM St. Michael Secondary School in Penampang. The population of interest comprises only one class and only 16 students enrolled. The study included 37% or 6 female students and 62.5% or 10 male students. There was no criterion sampling involved if the students had access to devices such as laptops or smartphones and connection to the internet to access Write & Improve online. The proficiency of the respondents ranged from intermediate to high. Most of the respondents' first language is English, followed by Malay, Mandarin and Kadazan Dusun.

Furthermore, none of the students had exposure through web-based language learning, especially Write & Improve for educational aid in learning writing. The validity of the survey had been acknowledged by a lecturer from the Faculty of Psychology and Education at Universiti Malaysia Sabah. The reliability of this study relies on checking for the consistency of the themes and patterns that appear from the open-ended responses. Lastly, triangulation was done to compare and contrast the data from these different sources to validate the findings.

FINDINGS AND DISCUSSION

Feasibility of Web-Based Language Learning in improving students' writing

To answer the first research question, the following information is presented. The chart below shows 8 types of errors in students' writing for diagnostic test: incorrect verb tense (IVT), preposition, pronoun case, conjunction, spelling, run-on sentence, subject- verb agreement (SVA), and sentence fragmentation.

In this study, the principles of self-regulation and observational learning outlined in SCT are clearly evident in how students interacted with the feedback provided by Write & Improve. Throughout the study, students progressed from initially struggling with the interface and feedback coding to using the tool more proficiently and independently. This aligns with self-regulation as defined by SCT, where students gradually learned to monitor and adjust their writing based on feedback, leading to noticeable improvements by the second cycle.

Huijser and Wali (2018) observed that automated feedback in WBLL tools helps learners independently identify and address errors, reinforcing SCT's self-regulation aspect. This was evident in the second cycle of the study in which students required fewer checks to achieve higher CEFR bands, suggesting they had internalized the feedback and developed strategies for self-correction. Observational learning is another key element of SCT that plays a role here. Write & Improve allowed students to observe model answers and recognize correct usage, aligning with Bandura's view that observing accurate language patterns aids learners in emulating them within their own work. This function of WBLL tools encourages students to replicate appropriate language structures, ultimately enhancing their writing skills.

However, teacher guidance remains essential. Bandura's Social Cognitive Theory (SCT) and Vygotsky's concept of the Zone of Proximal Development (ZPD) both suggest that while independent learning is beneficial, guidance from knowledgeable others—such as teachers—enhances student outcomes by bridging the gap between current capabilities and potential achievements. While Write & Improve facilitated self-directed learning, the absence of real-time teacher feedback likely limited some students' ability to fully interpret or apply the automated feedback, particularly in the first cycle when students were still acclimating to the platform.

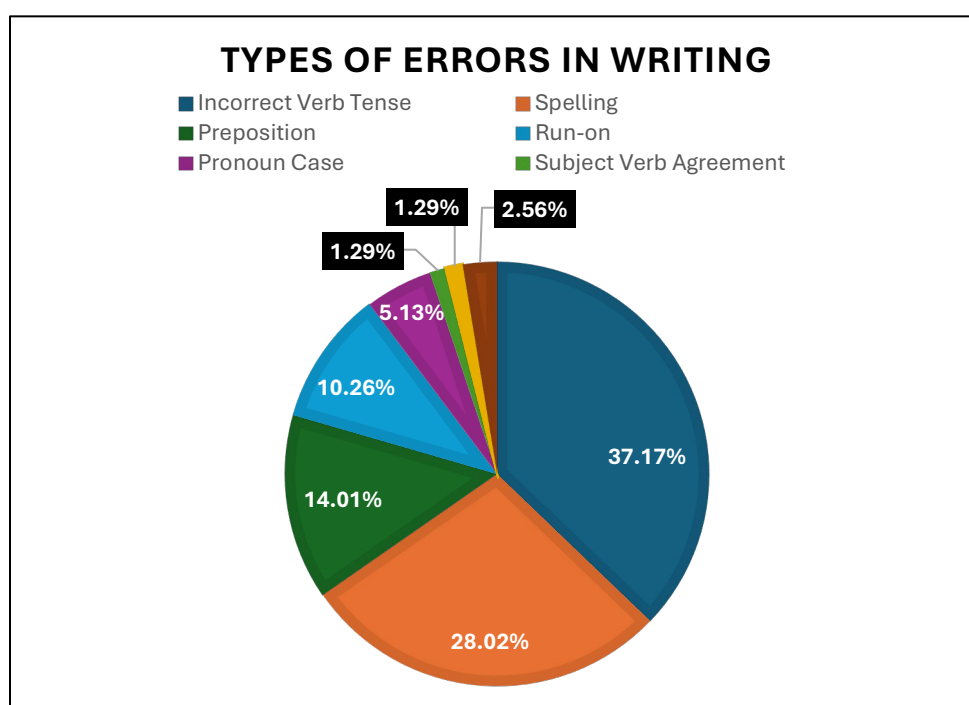


Figure 3: Types of Writing Errors in Pilot Test

It is clear that the students were struggling with verb tense as it recorded the highest percentage among all at 37.17% (29), followed by spelling at 28.2% (22), and preposition at 14.1% (11). The aforementioned three types of errors seem to be the main complications in their writing. Furthermore, the rest of the errors such as run-on sentences, pronoun cases, subject-verb agreement, conjunction, and sentence fragmentation are minor errors in their writing. For instance, run-on sentences only recorded 10.26% or 8, followed by pronoun case at 5.13% (4). Meanwhile, subject-verb agreement and conjunction share the same percentage at 1.29% (1) and sentence fragmentation at 2.56% or 2. Overall, the total errors detected in the students' pilot writing test are 78 errors.

Participants	CEFR + Number of Checking		
	Task 1	Task 2	Task 3
001	B1	B1	B1 (5)
002	A2	B1	B1 (5)
003	B1	C1	B1 (2)
004	A2	B1 (4)	A2 (4)
005	B1	C1 (6)	B1 (4)
006	B1	C1 (2)	A2
007	A2	B1 (1)	A2
008	B1	B2 (2)	B1
009	A2	B2 (1)	A2 (1)
010	B1	B2 (7)	B1 (9)
011	A2	B1	B1 (3)
012	B1	B1	B2 (3)
013	B1	B2	A2 (7)
014	A2	B1	B1 (6)
015	A2	C1	A2
016	A2	B1 (4)	B1 (7)

Table 1: Initial CEFR Band in Cycle 1

Participants	CEFR + Number of checking	
	Task 4	Task 5
001	B2 (2)	C1 (4)
002	B2 (2)	C2 (5)
003	C1	C2
004	A2	A2 (3)
005	C2	C2
006	C2	C2
007	B1	B2
008	C1	C1
009	C1	B2
010	C1 (3)	C2
011	C1	C2
012	C1	C1
013	C2 (2)	C2 (2)

014	B2 (3)	B2 (3)
015	B2	C2
016	B2 (3)	C1 (2)

Table 2: CEFR Band in Cycle 2

According to the data, most participants showed fluctuating progress from task 1 to task 3 in terms of their results according to CEFR. Notably, the pattern of students' grade in CEFR are mostly A2 to B1. Cycle 1 was conducted in 3 weeks, and cycle 2 was conducted in two weeks. The participants will receive one task per week. Green indicates improvement in students' CEFR bands based on the Write & Improve tool, while yellow represents that students have maintained their current band.

Based on my observation during Cycle 1 of the study, only four participants improved their CEFR grade from Task 1 to Task 3, with the highest grade achieved being B2. Additionally, two (2) students managed to maintain their grades throughout the cycle. This limited improvement can be attributed to the students still acclimating to the coding of the feedback, the interface of Write & Improve, and the overall functionality of the tool. The initial phase involved students familiarizing themselves with these new elements, which may have impacted their ability to fully leverage the feedback for substantial improvement in their writing tasks.

In contrast, students demonstrated significant improvement in their CEFR grades during Cycle 2 of the study. Notably, eight (8) students successfully achieved the highest band, C2, by the last task. Additionally, eight (8) students improved their grades from Task 5 to Task 6, while six (6) students managed to maintain their bands until the last task. Overall, 14 students made progress during this cycle, reflecting a marked advancement in their writing skills. Throughout Cycle 2, students were less checking their essays to achieve higher bands wherein they showed a keen understanding of the feedback provided by Write & Improve, which played a crucial role in their development. The feedback helped students identify and correct their mistakes, leading to better writing performance. This increased familiarity with feedback coding and the tool's interface enabled students to make substantial progress and achieve higher proficiency levels in their writing.

Overall, it demonstrated a significant improvement from cycle 1 to cycle 2. As previously stated, six students were able to develop and maintain their band across the three tasks assigned, resulting in a reported 51.5% over 16 pupils. As a result, 14 pupils improved and maintained their band, including the highest band according to the CEFR, C2. As a result, the percentage for cycle 2 increased to 81.5%, representing a 30% improvement.

Students' Perceptions of WBLL

A survey was conducted after the completion of both cycles on 29th June 2024. The questionnaire was designed to assess participants' perceptions of Write & Improve, focusing on their satisfaction, efficiency, motivation, impact on their writing skills, and suggestions for improvement. The survey included 10 open-ended questions, each targeting specific aspects of the students' experiences with the tool.

Aspect	Question	Sample Answer (s)	Percentage
Satisfaction	Q1: How satisfied are you with using Write &	<i>-Im really satisfied with the Write & Improve website as I believe we could gain more knowledge from</i>	Satisfied: 87.5% (14)

	Improve for learning writing?	<i>it! Such as learning new phrases, vocabulary etc.</i> <i>-Neutral</i>	Neutral: 12.5% (2)
Efficiency	Q2: How easy is it to navigate and use Write & Improve?	<i>-Write & Improve is generally easy to navigate and <u>user-friendly</u>! It provides a platform where users can submit their essays and receive feedback on their writing skills. The website is straightforward, making it accessible for users of all levels! The feedback is typically detailed, offering specific suggestions for improvement, which can be very useful for enhancing essay writing skills.</i>	Very easy: 100% (16)
Impact on writing skill	Q5: Do you feel that your writing skills have improved since using Write & Improve?	<i>-Yes, my writing skills have improved since using Write & Improve.</i> <i>-Not that much</i>	Yes: 93.8% (15) No: 6.2% (1)
Motivation	Q3: How engaging do you find the activities on Write & Improve?	<i>-They're really fun to complete, receiving a high rating and it's achievements are often enough to keep me going.</i> <i>-Somewhat engaging</i> <i>-Neutral</i> <i>-Average.</i>	Positive: 56.3% (9) Negative: 43.7% (7)

The CIPP Evaluation Model (Stufflebeam, 1985) provides a valuable framework for understanding the phases of learning that students experience when using WBLL tools like Write & Improve. In this study, the Context and Input phases help explain students' initial struggles in Cycle 1 as they familiarize themselves with the tool's interface and feedback mechanisms. The CIPP model suggests that assessing learners' initial needs (Context) and equipping them with supportive resources (Input) are crucial for effective learning. These findings align with Oflaz et al. (2022), who emphasize that a supportive initial context greatly impacts WBLL success, particularly as students become familiar with technology.

The Process and Product phases illustrate how iterative practice and feedback lead to growth. By Cycle 2, students demonstrated significant progress as they became more comfortable with Write & Improve and applied feedback more effectively. Muftah (2023) supports these findings, noting that WBLL tools enable self-paced practice with immediate feedback, which enhances language proficiency. This study observed similar outcomes; several students achieved higher CEFR bands by the end of Cycle 2, indicating the value of engaging with WBLL over time.

This study aligns with prior research on WBLL's effectiveness in enhancing language skills. Lin et al. (2017) demonstrated that real-time feedback in web-based tools supports self-directed

learning and skill-building. Write & Improve's immediate feedback feature was highly valued by students because it provided specific guidance for improving grammar, vocabulary, and sentence structure. Furthermore, the motivation to receive instant feedback encourages independent practice, reinforcing SCT's focus on self-regulation and observational learning (Lin et al., 2017)

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While students generally responded positively, some technical limitations were noted, including occasional inaccuracies and delays in feedback. Podburnaja (2021) observed similar issues with Write & Improve, stating that these challenges could impact user engagement and disrupt self-directed learning. Refining the tool's accuracy and responsiveness would enhance its effectiveness in supporting SCT-based learning principles. These findings suggest that combining WBLL tools like Write & Improve with traditional instruction can maximize effectiveness. SCT underscores the importance of guidance, and research by Karpova (2020) supports the idea that teacher-led sessions can help students interpret automated feedback and provide additional context. This aligns with Vygotsky's Zone of Proximal Development (ZPD), where the teacher support bridges gaps in students' understanding. Integrating WBLL tools with guided instruction not only aids comprehension but also sustains student motivation, as teacher-led activities make learning more engaging. The Input and Process stages in CIPP emphasize that structured feedback and teacher involvement are essential to creating a robust learning environment.

To sum up, applying the CIPP model and prior research helps clarify the benefits and limitations of WBLL tools. Though effective, Write & Improve could be optimized with teacher support and technical enhancements to maximize learning outcomes and student engagement across diverse settings.

Implication of the Study

This study offers valuable insights for researchers delving into the integration of technology in language learning, with a particular focus on web-based tools like Write & Improve. By demonstrating this tool's effectiveness in enhancing writing skills, the research supports further exploration of Social Cognitive Theory (SCT) within digital learning environments. Future studies could delve deeper into specific SCT aspects, such as observational learning and self-regulation, within the realm of web-based language learning (WBLL). Additionally, the study highlights the importance of incorporating user feedback to improve digital learning tools, setting the stage for targeted research aimed at optimizing user experiences and educational outcomes.

For student-teachers, the study underscores the potential of integrating digital tools like Write & Improve into their instructional practices. Therefore, by applying SCT principles such as self-regulation and observational learning can be seamlessly facilitated through WBLL platforms. By using these tools, student-teachers can guide learners towards greater autonomy, allowing them to view model answers, receive immediate feedback, and self-regulate their learning processes. The findings encourage student-teachers to embrace technology as a supplement to traditional teaching methods, enhancing their pedagogical strategies and potentially boosting student engagement and achievement

Teachers can derive certain practical implications from this study. The positive impact of Write & Improve on students' writing skills suggests that incorporating such tools can lead to

notable improvements in language proficiency. Furthermore, teachers can motivate students to observe high-quality writing, emulate it, and engage in self-regulated learning through iterative practice and feedback by leveraging SCT principles. The study also emphasizes the need for teachers to be mindful of the limitations and areas for improvement in these tools, such as providing clear feedback and addressing technical issues. Understanding and tackling these challenges can enable teachers to better integrate technology into their curriculum, fostering a more effective and engaging learning environment.

Recommendations for Future Research

This perspective is particularly relevant when considering the effectiveness of Web-Based Language Learning (WBLL) tools like Write & Improve. To optimize such tools for a diverse learner base, it is crucial to evaluate their performance across various demographics. This assessment can help identify how diverse cultural and linguistic backgrounds affect learning outcomes, enabling developers to modify the tool accordingly. When WBLL tools are evaluated with a range of demographic groups, the insights gained can drive inclusiveness in educational technology design. For instance, learners from distinct cultures may have varying expectations about feedback, which can be integrated into the tool to cater to a wider audience. Additionally, language learning strategies that are effective in one context might need adaptation for another, which this testing phase can illuminate.

Social Cognitive Theory (SCT) emphasizes the significant role that knowledgeable individuals such as teachers play in enhancing learning through guidance. Exploring how teacher involvement impacts student writing outcomes when using tools like Write & Improve offers valuable insights into the effectiveness of combining technology with direct instruction. When students use Write & Improve autonomously, the tool can provide instant feedback, helping them identify and correct errors. However, the absence of direct teacher involvement may limit the depth of understanding and the ability to apply feedback beyond immediate corrections. In contrast, when teachers actively engage with students while using Write & Improve, they can offer personalized guidance, clarification, and additional context, allowing students to grasp complex writing concepts more thoroughly. Hence, by comparing these approaches, researchers can identify practices that maximize the benefits of both technology and direct teacher support.

CONCLUSION

In summation, this study delved into the effects of Web-Based Language Learning (WBLL) using the Write & Improve tool on the writing abilities of secondary school students at SM St. Michael, Penampang, within the framework of Social Cognitive Theory (SCT). The research aimed to uncover both the perceptions and advancements in students' writing through structured practice and feedback. Initial challenges with the tool's interface and feedback in the first cycle were noted; however, notable improvements were seen in the second cycle, with students achieving higher CEFR bands and better assimilating the feedback, indicating that increased familiarity with the tool enhances its efficacy. The study underscores the critical role of teacher involvement in conjunction with WBLL tools. As posited by SCT and Vygotsky's Zone of Proximal Development (ZPD), teacher guidance can substantially amplify student outcomes. Surveys indicated robust levels of student satisfaction and perceived effectiveness of Write & Improve, even though some technical challenges and occasional feedback inaccuracies were reported.

The findings imply that WBLL tools like Write & Improve can significantly bolster writing skills when complemented with adequate teacher support. For educators, integrating such digital tools into their pedagogical practices can provide valuable feedback and track student progress, thereby refining writing instruction. Yet, the study acknowledges its limitations, including a modest sample size and brief research duration. Future investigations should examine the prolonged impacts of Write & Improve, its efficacy across varied educational contexts, and the influence of student characteristics on its effectiveness. Larger-scale and longitudinal studies could yield more detailed insights and further validate these conclusions. Addressing these limitations will enhance the refinement and effectiveness of WBLL tools across diverse learning environments.

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TEACHERS' AND STUDENTS' PERCEPTIONS TOWARDS THE USE OF CHATGPT TO IMPROVE WRITING IN THE MALAYSIAN SECONDARY SCHOOL CONTEXT

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Abstract

The use of artificial intelligence in education has gained traction among teachers as well as students in recent years. Artificial intelligence (AI)-powered language models such as ChatGPT have been widely used for various purposes, including producing improved writing. This study sought to investigate the perceptions of secondary school students and English teachers in Malaysian public schools on the use of ChatGPT to enhance students' English writing. This study also investigated how ChatGPT was used by both students and teachers and the factors that influenced their use of ChatGPT. This study employed a qualitative research design. A total of 20 respondents (12 students, 8 teachers) from six schools in Sabah participated in this study. Data were collected using an open-ended questionnaire designed based on the Technology Acceptance Model (TAM), and were analyzed thematically. The findings of the study showed that students and teachers generally believe ChatGPT to be an effective tool to enhance students' English writing proficiency. Among the features of ChatGPT that were lauded by the participants were its ability to provide personalized feedback and perform tasks that are useful for writing, such as proofreading and idea generation. Several challenges were also pointed out, such as difficulties using ChatGPT due to lack of resources and digital literacy. The participants also expressed their concern about the possibility of overdependency on ChatGPT, which can hamper the development of the students ability to write independently. The findings of this study contributed to the current knowledge of the perceptions of the use of ChatGPT among secondary school students and English teachers in Malaysian public secondary schools. This knowledge can guide educators and policymakers on matters related to the integration of AI into English writing instruction.

Keyword(s): *artificial intelligence, ChatGPT, English writing proficiency, language learning, technology acceptance model*

INTRODUCTION

As of August 2024, ChatGPT has over 180.5 million users worldwide (Singh, 2024). The AI-powered language model amassed 100 million users in just two months after it was released publicly in 2022. ChatGPT took the internet by storm with its ability to engage in intelligent and human-like interactions. This was achieved after the language model was trained with a massive

corpus of textual data, which, as of 2022, was estimated to be made up of 300 billion words or 570 gigabytes of data (Iyer, 2022). The versatility of its ability to perform a wide range of textual tasks has made it a potentially useful tool in education.

AI-tools have been increasingly used in education (Chen et al., 2020). An example of such a tool is the AI-powered language model ChatGPT, which is a tool that has been found to be beneficial for education (Kamalov et al., 2023; Zheng et al., 2021) for both students and teachers. Administrative tasks such as grading assignments and recording students' performance is often a very time-consuming task for educators. It often left a teacher with little time to focus on their students and improving their teaching. AI can provide a solution for this problem by assisting teachers on their administrative tasks (Chen et al., 2020). This can save a teacher a lot of time from doing the administrative tasks (Harry & Sayudin, 2023) and will enable them to concentrate on their students.

AI has also been proven to be a very useful tool in improving students' learning achievements (Chen et al., 2020) such as improving STEM education (Xu & Ouyang, 2022) and increasing creativity (Huang et al., 2021). An AI feature that is particularly useful is its ability to provide fast personalized feedback (Su & Yang, 2023; Harry & Sayudin, 2023). The type and amount of assistance required by students vary from each other. Focusing on individual students can be challenging for a teacher who has to divide their attention between multiple students in a class. ChatGPT, with its ability to provide personalized feedback, can assist a teacher to provide personalized feedback to students. This will not only ease the burden of the teacher but will also make learning more efficient and easier as, with the use of ChatGPT, they are able to receive feedback almost instantaneously (Su & Yang, 2023).

Despite the positive outcome and findings, there were also concerns and challenges regarding the integration of AI in education. AI technology has only recently been integrated widely into education and its effectiveness is still largely untested (Su & Yang, 2023). Among the concerns raised regarding the use of AI in education is privacy and security (Akgün & Greenhow, 2022). There are also ethical concerns with regard to the use of ChatGPT in education, particularly on the matter of the fairness of the responses provided by AI (Harry & Sayudin, 2023).

This study sought to investigate the perceptions of Malaysian secondary school students and English teachers about the use of ChatGPT to enhance students' English writing proficiency. In addition to that, this study also sought to understand the factors influencing the tendency of both students and teachers to use ChatGPT to enhance students' English writing proficiency and how they use the AI-powered language model.

Multiple studies have been conducted about the integration of ChatGPT into education, such as on the opportunities that the AI-tool can offer, the possible challenges it can pose (Adeshola & Adepoju, 2023; Grassini, 2023; Memarian & Doleck, 2023), and best practices when using ChatGPT in education (Memarian & Doleck, 2023; Halaweh, 2023). An equally important area of study regarding the integration of AI into education is the perceptions of its users.

Various research has already been conducted on the perceptions of learners and educators on the use of ChatGPT (Rahim et al., 2023; Ali et al., 2023; Iqbal et al., 2022). Most of the research was conducted in the context of higher education. There is a lack of information on the perceptions of students and teachers in secondary schools, which is what this study sought to contribute to

This research was conducted with three objectives:

1. To investigate the perceptions of Malaysian secondary school students and English teachers regarding the use of ChatGPT to enhance students' English writing proficiency.
2. To investigate how secondary school students and English teachers used ChatGPT to improve students' English writing proficiency.

3. To identify factors influencing the adoption of ChatGPT by secondary school students and English teachers for the purpose of improving students' English writing proficiency.

The findings of this study will contribute to the current understanding of the perceptions of secondary school students and English teachers in the Malaysian context. It can also serve as a guide for educators and policymakers on their decisions regarding the integration of ChatGPT into education.

LITERATURE REVIEW

Multiple studies have shown that the perceptions of both learners and educators regarding the use of ChatGPT in education were mostly positive (Phuong, 2024; Bibi & Atta, 2024; Teng, 2024; Zebua & Katemba, 2023; Solovey, 2024). Among the characteristics of ChatGPT that was appreciated by them was its convenience (Bok & Cho, 2023). ChatGPT can be accessed anywhere, provided that the user has a device such as a smartphone or a laptop that is connected to the internet. The user-interface of ChatGPT for both desktop and mobile is intuitive and easy-to-use (Zebua & Katemba, 2023).

ChatGPT is capable of performing various text-based task that are useful to help learners improve. Among the capabilities of ChatGPT that were stated by learners and educators to be helpful for the improvements of English writing include its ability to proofread, translate, and paraphrase texts (Phuong, 2024; Eunim & Youngsang, 2023). Studies have also shown that learners and educators found that ChatGPT can bring a lot of benefits for the improvements of English writing, such as increasing motivation, engagement (Teng, 2024), and improving vocabulary (Phuong, 2024). Despite the mostly positive opinions,

Overall, the perceptions of learners and educators on the use of ChatGPT to improve English writing are generally positive. However, there is still much to be investigated regarding the use of ChatGPT and English writing, such as the area of investigation ventured by the present research, which is the perception of secondary school students and English teachers in the Malaysian context. Various studies were already conducted regarding the perceptions of learners and educators on effectiveness of AI-powered language model to improve writing skills (Jen & Salam, 2024; Lou, 2023; Har, 2023; Azmi et al., 2023; Younes, 2024; Xu & Jumaat, 2024). However, there is a lack of research that focuses specifically on the perceptions of secondary school students and English teachers on the effectiveness of ChatGPT in improving students' English writing.

METHODOLOGY

This study employed a qualitative research design. This design was chosen because of its ability to provide deep insights into the participants' experiences and beliefs, which were central to the research objectives. The data for this study were collected using an open-ended questionnaire. The open-ended questionnaire was conducted to explore the perceptions of Malaysian secondary school students and English teachers on the effectiveness of ChatGPT to improve students' English writing.

The sample for the study was made up of two groups, namely teachers and students. A total of 12 students were involved in this study. The selection of the students was nondiscriminatory. Students across various levels of proficiency were allowed to participate in this study. This diversity is important to gain a better understanding of the general perspective of the

students on the use of ChatGPT to improve their English writing. Students also have different levels of exposure to ChatGPT. The other group consisted of secondary school English teachers. Their insights into the use of ChatGPT to improve students' English writing are invaluable. This study aimed to gather educators' perspectives on the potential benefits of ChatGPT in this area.

Data were collected through an open-ended questionnaire. It allowed the participants the flexibility to respond without being constrained by scheduling conflicts. They could provide answers at their convenience. This promoted more thoughtful and comprehensive responses. It also eliminated the pressure to generate spontaneous answers on the spot, which could potentially lead to inaccuracies.

Participants received the open-ended questionnaire online through a Google Form designed to gather detailed information about their perceptions of ChatGPT's use in improving English writing proficiency. Clear instructions on how to submit responses were provided, and participants were encouraged to seek assistance or clarification if needed. A submission deadline was communicated to ensure timely completion of the study. Additionally, participants had the option to provide supplementary information relevant to the study and could contact the researcher even after submission.

Responses were collected and systematically organized with strict confidentiality protocols in place. Each response was anonymized and securely stored to prevent association with individual participants. Written responses were compiled and stored in a password-protected digital folder accessible only to the researcher.

FINDINGS & DISCUSSION

The study aimed to investigate the perceptions of secondary school students and teachers on the use of ChatGPT to improve students' English writing. Along with that, it also examined how the AI tool was used by both teachers and students.

Perceptions of ChatGPT's Effectiveness

Both students and teachers expressed positive views on the use of ChatGPT to improve students' English writing. They recognized its potential to improve multiple aspects of writing all at once, such as grammar, vocabulary, and quality. ChatGPT's ability to provide instantaneous feedback and personalized learning were also noted and particularly appreciated by both groups.

Students' perspective:

"Yes, because it makes it easier to find information" (S2).

"Yes, ChatGPT can help improve my English writing skills if I need to correct my English writing. Besides that, ChatGPT can also save me time when writing in English" (S3).

"In my opinion, ChatGPT can help improve English writing skills because it can provide feedback on writing, speaking, and listening skills, and it can benefit students learning English" (S9).

Teachers' perspective:

"ChatGPT significantly aids students in improving their English writing. It offers feedback, boosts fluency, suggests improvements, fosters creativity, and provides an engaging learning experience" (T1).

"ChatGPT is very useful in helping students improve their English writing quality as it offers helpful suggestions for creativity in writing" (T3).

"I believe ChatGPT has the capability to enhance students' writing skills. For example, when they use its grammar correction function, they can ask ChatGPT's help to review their grammar. Additionally, students can seek ideas from ChatGPT on various topics, which I find highly beneficial" (T4).

Students' and Teachers' Use of ChatGPT

The study revealed that both teachers and students used ChatGPT in different ways. Most of the students stated that they used ChatGPT to draft as well as revise their essays. They also stated that they used ChatGPT to study grammar and enrich their vocabulary, both of which are important elements necessary for the production of good writing. Teachers, on the other hand, stated that they used ChatGPT in their teaching by using it to produce more personalized lesson materials for their classes.

Students' usage:

"I use ChatGPT to write my first draft and then get suggestions for improvement. It helps me refine my ideas and structure my essays better" (S3).

"ChatGPT only needs one example, and it will turn it into what we want, such as essays, reviews, and so on" (S1).

Teachers' usage:

"I can use the sentences as samples. Another one, it also helps me to check my grammar and sentence structure and learn from it" (T2).

"For example, students can expand their vocabulary range or enhance their writing style when they use ChatGPT to ask how they can improve their original work, or when ChatGPT identifies errors in their writing text, allowing them to make amendments accordingly" (T6).

"I assign homework where students use ChatGPT to write an essay, and we discuss the feedback and improvements in the next class" (T2).

Factors Influencing Adoption of ChatGPT

The use of ChatGPT was influenced by several factors. The factor that was stated the most is access to technology. Those without access to resources like an internet connection and a device that can connect to the internet and access ChatGPT will not be able to even begin using the tool. Access to technology was a major factor that influenced the use of ChatGPT to improve English writing. Another factor that influenced the tendency to use ChatGPT was concerns about the possible drawbacks of using AI, such as the problem of overreliance on the AI tool. However, even though concerns on the use of ChatGPT were expressed, none of the respondents expressed complete opposition to the use of ChatGPT but rather suggested that there should be a balance between the use of AI and the use of traditional teaching methods.

Technological factors:

"It's easy to use ChatGPT on my phone, so I can practice writing anytime, anywhere" (S1).

"Not sure because I have never used it" (S6).

Educational factors:

"ChatGPT encourages students to think critically as they must formulate their own questions or statements to obtain the specific answers they seek" (T4).

"I think using ChatGPT for writing is a very advanced and bold teaching tool. But based on myself, I am not very willing to use ChatGPT for English writing courses. I think it is too comprehensive and sometimes leads to situations that the classroom cannot control" (T5).

Cultural factors:

"Students should be taught that ChatGPT is there to help them generate ideas and suggestions for their personal growth instead of relying on it to do the job for them completely" (T7).

"While ChatGPT is a great tool, it's important to balance its use with conventional teaching to ensure students develop strong foundational skills" (T4).

The findings of this study resonate with existing literature on the use of AI in education. Previous studies have demonstrated the potential of AI tools for enhancing learning outcomes and student engagement. However, the challenges identified in this study, particularly those related to technical issues and digital literacy, underscore the importance of addressing infrastructure and training needs.

CONCLUSION

This study has provided information on the perceptions of secondary school students and English teachers on the use of ChatGPT to improve students' English, how both of them used the AI tool, and factors that influenced the adoption of the AI tool. Should interest in this area of knowledge persist in the future, it is suggested that upcoming research should investigate the long-term impact of the use of ChatGPT on writing skills. It could also be helpful to explore the effectiveness of the use of ChatGPT in different educational contexts. Last but not least, future studies can also examine the role of teacher support and training in incorporating AI in their lesson planning.

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COGNITIVE STYLES ON STUDENTS' ACCEPTANCE OF ARTIFICIAL INTELLIGENCE-BASED TECHNOLOGY (CHATGPT AND KAHOOT!) FOR LANGUAGE LEARNING

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ABSTRACT

The rapid technology evolution has grown other new branches in artificial intelligence particularly chatbots and self-generated output. In order to enhance teaching and learning experiences, the education sector has decided to espouse these advancements for teacher's and student's support. Despite the benefits these AI tools attempt to provide, the perceptions towards these technologies vary individually. Therefore, this study's focal point is to determine the levels of AI-based technologies' acceptance, specifically ChatGPT 3.5 and Kahoot among secondary school students at SMK Takis Papar. Additionally, this study seeks to identify the influence of Kirton's Adaptive-Innovative cognitive styles on the process of decision-making regarding technology reception. Fifty students in Forms 1 and 3 at SMK Takis were given questionnaires as part of the data gathering process. In order to have a deeper understanding of secondary school students' opinions and preferences about ChatGPT and Kahoot integration in English language study, the responses were then analysed using SPSS version 28. By investigating the interconnection between cognitive styles and technology acceptance, this study attempts to propose valuable insights to policymakers, researchers, and educators involved in AI integration into secondary education settings.

Keywords: Artificial Intelligence, Education Technology, ChatGPT, Technology Acceptance, Cognitive Styles.

INTRODUCTION

Malaysia has constantly driven towards education development by embracing the advancement of technology and digitalisation and incorporating technology into teaching and learning. Our government has taken initiatives to execute digital intervention for learning as well as providing technological resources from allocating budgets for school facilities like computer labs, interactive smart boards, to internet infrastructures. However, on an implementation basis, there is an unspoken struggles faced by the teachers to utilise ICT into learning to allow positive response like learning motivation, interest, collaboration, cross-curricular skills, and content comprehension among students due to under-resourced school facilities and even some educators viewed digital implementation as time-consuming and extra workload (Ng & Yunus, 2021). In fact, Cancino and Ibarra (2023) supported that Kahoot, Socrative, Wordwall, Quizzizz, and Mentimeter that are called as online student response systems (OSRS) are regarded by most teachers as user-friendly as well as enhancing students' engagement.

On the other hand, aligned with the rocketing evolution of Industrial Revolution 4.0, Artificial Intelligence (AI) is now noticed to be implemented in the educational sector to accommodate the teaching and learning needs. AI digital tools like ChatGPT and upgraded interactive educational games like Kahoot and Quizzizz are commonly used to assist learning and assess students' understanding towards particular contents of curriculum. On another extended facet of Technology Acceptance Model (TAM), These external

factors are frequently pitched to observe how they influence or trigger the cognitive responses (perceived ease of use and perceived usefulness) to form responses towards technology-using attitudes that eventually causes the acceptance or denial of the technology. Therefore, this study aims to ascertain two research questions.

- i. What is the level of technology acceptance towards the AI-based technology which is ChatGPT and Kahoot! among ELL secondary school students?
- ii. Do cognitive styles affect the acceptance of the AI-based technology of ChatGPT and Kahoot! for English language learning among Malaysian secondary school students?

LITERATURE REVIEW

Technologies Adoption in Language Learning

The hit of COVID19 was the starting point of mass implementation of technology in education and language learning was a part of it. This practice has been continued until post-COVID19. Research conducted by Mustafa et.al. (2020) illustrates that the adoption of Roblox application gained agreement from students that it could develop their critical thinking skills in writing by incorporating real-life issues, narratives, characters, and storyline in the writing activity using the application.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was first introduced by Darvis (1989) to illustrate the factors that anticipate the adoption of technology by potential users. The framework developed in this model contains major factors like perceived usefulness and perceived ease of use as indicators or determinants whether people are going to accept the technology for continuous use or not with the driven external factors as variables in the studies (Tella & Olasina, 2014).

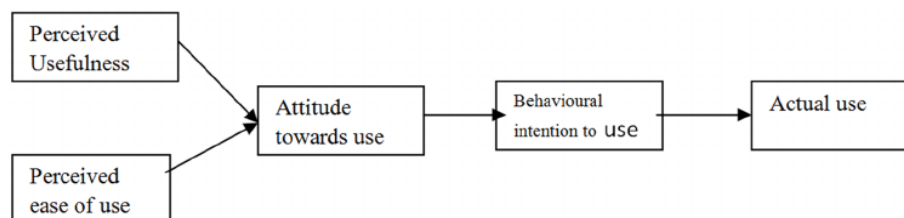


Figure 1: The Original Technology Acceptance Model (TAM) by Darvis (1989).

The pioneer version of Technology Acceptance Model (TAM) postulated that perceived usefulness (PU) and perceived ease of use (PEU) are the key factors to technology reception. In the education context, the previous study portrays these key determinants are translated into beliefs that using a technology tool can improve learning engagement. To define perceived ease of use, Burgess and Worthington (n.d.) describe PEU as the level of one's beliefs that the technology is easy to use. For students, this concept means that the digital learning tool that they are using is user-friendly with straightforward navigation to encourage engagement with course materials and communication features. These two factors—perceived usefulness and perceived ease of use—are crucial in shaping the behavioural attitude that leads to actual technology use. High scores in these factors increase the likelihood of technology adoption.

Technology Acceptance in Educational Settings

Many past research has emphasised the importance of assessing technology acceptance before its adoption. In the TAM model, Wicaksono & Maharani (2020) reported that perceived usefulness (PU) and perceived ease of use (PEU) were formed by the prior experience from using the technology which will

predict the future benefits of the same technology. Hong et. al. (2021) even highlighted the relevance of studying the technology acceptance level among preschool teachers that emerged during the hit of COVID-19 in China. Improvement in education engaged through the loops of feedback; receiving post-response by investigating technology suitability among students and teachers in the classroom setting beforehand allow teachers to make informed decisions by refining and improving technological tools based on real users' experience (Radif et.al. 2016). With some positive perceptions, a negative perception comes from a study conducted by Widianyingtias et al., (2023). It is related to the concerns about how AI like ChatGPT will deteriorate self-dependency, diminish critical thinking, and add academic integrity issues.

Introduction to Cognitive Styles

Garcia and Kennison (2013) define cognitive styles as preferences in thinking, perceiving, processing, and applying information which is different from the intellectual ability, but it is essential in making decisions, solving problems, and conceptual tempo. Understanding this one of individual differences is pivotal for educators, as it attempts to provide insights that would help shaping better learning experiences. In this current study, it aims to observe Kirton's A-I theory that classifies individuals on a spectrum from adaptive to innovative in problem solving. In this framework, it explains that innovators tend to challenge and reframe issues while adaptors only improve existing policies (Kirton, 1989; Kozhevnikov, 2007). Zhang and Sternberg (2006) stated that cognitive styles are malleable to factors like demographic, occupation, and culture. Stenberg and Zhang (2005) magnified the benefit of recognizing students' cognitive styles where it enables teachers to cater students with differentiated instruction and improving classroom performance. Other than that, Arifin et.al. (2020) reported that the way individuals absorb and retain information is largely influenced by cognitive styles. Therefore, addressing these differences can enhance learning outcomes.

Application of AI in Educational Settings

The benefits and drawbacks of AI were thoroughly investigated before it was integrated into the education sector. Al-Tkhayneh et. al. revealed that AI could positively improve learning experience, personalised education, and enhance teaching efficiency. However, some sceptics are concerned that AI might pose threats to learning development by deteriorating decision making skills, increasing overdependence, and encouraging laziness. Ahmad et. al. (2023) corroborated these concerns by investigating the impacts of AI on human loss in decision making, laziness, and safety in education among Chinese and Pakistani universities' students. A plethora of empirical studies have been done towards the impact of digital tools on students especially at the tertiary level and the results on the domains such as learning motivation, level of escalated skills, and technology acceptance are promising. Ali et. al. (2023) reported that utilising ChatGPT positively impacted students' learning, motivation, and autonomy. Additionally, Wang and Tahir (2020) also demonstrated a meta-analysis finding on Kahoot showing positive effects on learning performance, motivation, concentration, enjoyment, and perceived learning. However, other results in the same study portrayed that Kahoot can cause agitation and negatively affect classroom dynamics over time.

Effects of Kirton's Cognitive Styles on Learning

The impact of Kirton's study could be seen in the realm of education where it resonates with the methods of learning particularly in the learning approach. According to the constructivists, effective learning occurs when a problem-solving task is involved in a lesson to allow students to experience mental processing. "Learners are intellectually generative individuals rather than empty vessels waiting to be filled" (Yilmaz, 2008, p.162). Scott and Koch (2010) reported that the way students prefer to learn affects how they analyse, evaluate, and execute actions to solve problems. To reiterate, cognitive styles relate much to the preference of approaching problems and individuals learn better if they were given the liberty to choose their comfort method of learning. In the study conducted by Robinson et.al. (2010), each cognitive style has its own attributes to which it deals with the tasks. Adaptors have important advantages that help them solve problems and make decisions inside pre-existing frameworks. They can competently traverse and

apply current systems and processes because of their dedication to efficiency. Adaptors are frequently collaborators who thrive in cooperative settings where following set policies and procedures is essential. They are dependable and regular contributors because of their tendency for stability and risk aversion, especially in situations where upholding established procedures is essential.

Table 1: Adaptor and Innovator characteristics and behaviors
(Based on Kirton, 2000 (pg. 10-11) and 2003 (pg 53-55) and our classroom experiences).

Problem	Adaptor characteristics and behaviors:	Innovator characteristics and behaviors:
Risk	Adaptors appear to take fewer risks.	Innovators take greater risks.
Nature of solution	Adaptors produce consistent small wins. Adaptors are creative at solving problems within existing organizational rules and norms.	Innovators think in terms of creating the “big win”. Innovators are less constrained by current organizational norms or conditions.
Solutions fit organization	Adaptors solutions may fit well with the organization’s existing capabilities.	Solutions proposed by innovators may require more change in order to implement.
Defining the problem	Adaptors want to be efficient. They focus early and work to clarify the problem.	Innovators will redefine the problem to fit their understanding of the situation.
Problem scope and clarification	Adaptors ask questions to narrow the scope of the problem (e.g. “What do you really mean here?” “Is this how we should think about...?”)	Innovators ask little clarification, ignore instructions, and prefer to answer the problem in the way they think it should be answered.

Figure 2: Characteristics of A-I cognitive styles by Robinson et.al. (2010).

In the same study, Robinson et.al. (2010) encapsulated that cognitive styles differences also bring conflicts towards problem-based learning since the tasks would consist of bias elements that support the characteristics of either adaptive or innovative individuals. People who have an intense preference for innovative cognitive styles may occasionally find it difficult to adapt to conventions or follow established processes. Their tendency to seek out nontraditional techniques may be viewed as a disadvantage in contexts where conformity is required, which might result in resistance or make it difficult for them to adjust to more conventional or rule-bound learning environments. People who have a strong adaptive cognitive style may find it challenging to adjust quickly to changes or to be willing to question accepted standards. Their inclination toward upholding traditional structures and practices may make it more difficult for them to accept creative alternatives or successfully traverse dynamic learning settings. This may be a drawback in situations when flexibility and a willingness to stray from the norm are needed.

Kirton’s Cognitive Styles in Affecting Technology Acceptance

As debated earlier, cognitive styles are considered as individual differences that influence technology acceptance. Zamzuri and WanAdnan (2007) exhibited that cognitive styles do not significantly affect system adoption even though it initially affects perception of ease of use and usefulness. Ma et. al. (2006) also proposed the idea of different cognitive styles is a significant moderator that affects the extent of influence toward the final behavioural intention of using weblog systems. Another study by Zamzuri et.al. (2012) revealed that cognitive styles are the mediator that play a role in pitching the satisfaction of using e-platform, it also mentions that adaptive style individual influence the perceived ease of use of a system due to its adaptability nature and consequently lead to the higher usage of a system which indirectly signals satisfaction. By looking at the inconsistent findings of prior studies, it is uncertain to announce which cognitive style is adaptive or innovative that is more likely to adopt AI in education. Therefore, this study purposely aims to resolve these conflicting results by determining the level of acceptance of ChatGPT and Kahoot among secondary students at SMK Takis and identifying which cognitive style prefers using these AI-based educational tools for English learning.

METHODOLOGY

Research Design

The approach used in this study to obtain samples was through purposive sampling technique, which targeted on choosing 50 lower form students from Form 1 and Form 3 in SMK Takis, Papar, Sabah.

Instrument

This study utilised a questionnaire adapted from Saeed et. al. (2009) that was originally developed by Bagozzi and Foxall (1995) in order to figure out the samples' cognitive styles. Besides that, a questionnaire from Ghani et. al. (2019) was adapted and incorporated to assess the students' technology acceptance level. Merging both questionnaires enabled this current study to make identification of cognitive style categories and its impact on the technology acceptance.

Data Collection and Data Analysis

Initially, consent forms were distributed for the respondents to fill in to gain permission for data collection. A letter of permit to conduct a survey study is going to be submitted to the school principal to avoid the violation of laws and regulations. The questionnaires were handed out for the lower form students from SMK. Takis after accepting technology intervention during classes for 10 weeks. Before they record the response, they were given a briefing on how to answer the questionnaires. The collection of data was examined by using descriptive statistics from the Statistical Package for Social Sciences (SPSS) version 28 to accommodate the research questions of the study which are "What is the level of technology acceptance towards the AI-based technology of ChatGPT and Kahoot! among ESL secondary school students?" and "Do cognitive styles affect the acceptance of the AI-based technology of ChatGPT and Kahoot! for English language learning among Malaysian secondary school students?". Both research questions' data were assessed by percentage and frequency in SPSS system.

RESULTS/FINDINGS

Respondents' Background

There were 50 respondents in this study consisting of 34 female and 16 male students aged 13 and 15 years old selected from Form 1 and Form 3 lower form students in SMK Takis Papar that possess basic to intermediate English proficiency. These students learn English at school by using traditional methods, mainly textbooks and physical handouts, without the interference of technology. This method has been consistently applied since they were in primary school. Nevertheless, most of the respondents own their own smartphones and are technologically savvy. They also mentioned how technology accessibility at home helps them find similarities between ChatGPT and Kahoot with other applications like Siri and Quizziz.

Overview of The Technology Acceptance Among SMK. Takis Students.

Table 1: Level of Technology Acceptance Towards ChatGPT and Kahoot among SMK. Takis Students.

Frequency	Mean	Standard Deviation	Skewness
50	71.8	8.18990	-0.353

The survey included 50 respondents from Form 1 and Form 3. The mean technology acceptance score among these secondary school students is 71.8, indicating a relatively high level of acceptance towards ChatGPT and Kahoot. The standard deviation of 8.18660 shows some variability in acceptance levels, but the scores are not widely dispersed. This means that while most students have similar acceptance levels, there are some differences. The skewness value of -0.353 suggests a slight negative skew, indicating that

most students' scores are above the mean, with a few lower scores bringing the mean down. Overall, this shows that secondary school students are generally willing to incorporate ChatGPT and Kahoot into their English language learning. Therefore, the first hypothesis of the study is accepted: there is a significant difference in the level of technology acceptance towards ChatGPT and Kahoot among ESL secondary school students.

Overview of The Acceptance of ChatGPT and Kahoot! Between Adaptive and Innovative Cognitive Styles

Table 2: The level of ChatGPT and Kahoot Acceptance Between Adaptive and Innovative Cognitive Styles.

	Mean	Standard Deviation	Skewness
Adaptive Style	18.26	2.33701	0.337
Innovative Style	24.48	5.11596	0.337

The descriptive statistics show that students generally exhibit a higher level of innovative cognitive style compared to adaptive cognitive style, with a mean value of 24.48 versus 18.26. The greater standard deviation for innovative cognitive styles (5.11596) indicates more variability in scores. Both adaptive and innovative distributions are positively skewed (0.712 and 0.519), meaning most students scored below the mean, with a few higher scores.

Table 3: Technology Acceptance and Cognitive Styles Interconnection.

	Pearson Correlation (r)	P-Value (p)	Interconnection
Adaptive Style	0.309	0.029	Innovative Style
Adaptive Style	-0.137	0.0343	Technology Acceptance
Innovative Style	-0.259	0.070	Technology Acceptance

The Pearson correlation ($r = 0.309$, $p = 0.029$) shows a moderate, statistically significant positive relationship between adaptive and innovative cognitive styles. The correlation between adaptive cognitive style and technology acceptance ($r = -0.137$, $p = 0.0343$) is weak and not statistically significant. Additionally, the correlation between innovative cognitive style and technology acceptance ($r = -0.259$, $p = 0.070$) is weak and not statistically significant. Therefore, the non-significant p-values ($p > 0.05$) indicate no meaningful relationship between cognitive styles (adaptive and innovative) and technology acceptance.

Table 4: Model Summary.

Technology Acceptance (Dependent Variable)			
Cognitive Styles (Predictors)	R Square	Adjusted R Square	Sig. F Change
Adaptive, Innovative	0.071	0.031	0.179

The model summary shows that adaptive and innovative cognitive styles account for only 7.1% of the variance in technology acceptance, with an adjusted R Square of 3.1% considering the number of predictors. This indicates that cognitive styles explain only a small portion of the variability in technology acceptance.

Table 5: ANOVA Table.

Technology Acceptance (Dependent Variable)	
Cognitive Styles (Predictors)	Sig.
Adaptive, Innovative	0.179

The ANOVA table indicates that the overall regression model (0.179) is not statistically significant, as the significance value exceeds 0.05. This implies that the predictors, collectively, do not significantly predict the dependent variable, which is technology acceptance.

Table 6: Coefficient Table

Technology Acceptance (Dependent Variable)	
Cognitive Styles (Predictors)	Sig.
Adaptive	0.671
Innovative	0.112

The coefficient table indicates that neither adaptive cognitive style ($p = 0.671$) nor innovative cognitive style ($p = 0.112$) are significant predictors of technology acceptance. The p-values are greater than 0.05, suggesting that these cognitive styles do not have a statistically significant effect on students' acceptance of AI-based technology (ChatGPT and Kahoot).

DISCUSSION

Technology Acceptance Among SMK. Takis Students.

The survey with 50 purposive samples from Form 1 and Form 3 students at SMK. Takis Papar shows a significant difference in technology acceptance, as detailed in Table 4.5.6.1 of the Descriptive Statistics chapter. The mean score of 71.8 reflects a high level of acceptance of ChatGPT and Kahoot, indicating a positive attitude toward integrating these tools into English language learning. Students' perceived ease of use, perceived usefulness, and behavioural intention to use these AI tools also highlight high acceptance levels. The standard deviation score (8.18660) suggests that the acceptance levels among these students are partly diverse, the responses are not widely dispersed showing that most students share similar acceptance levels with minor differences. This finding aligns with studies by Ali et al. (2023), and Wang and Tahir (2020) that portrays the benefits of merging AI tools into learning. Other than that, the respondents perceive that AI technology like ChatGPT and Kahoot can give a positive impact to language learning.

The skewness value of -0.353 indicates a slight negative skewness, meaning most students' acceptance scores are above the mean, with a few lower scores. This suggests that while the majority of the students are highly accepting the tools, a small fraction might have lower acceptance levels due to factors like limited access to technology and differing levels of digital literacy, as presented by Rezaipandari et al. (2023). Overall, students at SMK Takis are generally accepting ChatGPT and Kahoot to be integrated into their English language learning as they firmly believe that these AI tools can attract their attention and facilitate vocabulary concepts understanding. Therefore, including AI-driven tools like ChatGPT and interactive platforms like Kahoot in language education could enhance learning outcomes and advance the Malaysian secondary school education system.

The Acceptance of ChatGPT and Kahoot! Between Adaptive and Innovative Cognitive Styles

The finding in the descriptive statistics table shows that the students' inclination is stronger towards innovative cognitive style as compared to adaptive. However, the scores display variability and positive skewness which indicate a wide range of responses that conclude the majority of the students prefer more than one cognitive style. This diversity can be regarded from the adolescent's confusion deciding their own cognitive preferences. In addition to that, higher mean scores in innovative cognitive style does not directly translate higher acceptance to ChatGPT and Kahoot since the Pearson correlation analysis reveals a moderate positive correlation between adaptive and innovative cognitive styles that show overlapping cognitive styles in some respondents. This overlap is normal for adolescents, who are still developing their preferences, as stated by Court (2013). These findings challenge existing literature that encapsulated cognitive styles influence technology reception, as prior studies like Ma et al. (2006), Zamzuri and Wan Adnan (2007), and Zamzuri et al. (2012) involved respondents over 18 who had more experience and clearer preferences.

It is noted that the correlations between cognitive styles and technology acceptance is weak and non-significant scoring only 0.671 and 0.112 for both Adaptive and Innovative styles, highlighting indications that cognitive style alone does not entirely predict one's acceptance towards AI-tools for learning. Therefore, this finding is on a parallel line with a study carried out by Zamzuri and Wan Adnan (2007) that reported cognitive styles do not significantly lead to the system utilisation although it affects the perceptions of usefulness and ease of use. In other words, cognitive style is not a primary key determinant for ChatGPT and Kahoot acceptance in English language learning among secondary school students even though it can affect the decision to adopt or decline the technology as mentioned by Saeed et al. (2009). To strengthen the previous statement, the tabulation data from model summary and ANOVA results exhibit that cognitive styles score with just 7.1% which is only a small subset of the variance in technology acceptance indicating its non-significant correlation. This result confirms that the cognitive styles do not directly predict technology acceptance although it has a small influence in the determination. Even the coefficient table displays that neither both cognitive styles significantly predict technology acceptance and this supports the earlier findings from both descriptive and correlational analyses from this current study.

Implication of the Study

This current research has postulated that the factors which significantly influence students' acceptance towards AI educational technologies are beyond cognitive styles. One of the key determinants is technological literacy. In spite of that, this study also exposes the importance of prior exposure to technology. When the students are familiar with the educational technology, it is much easier for them to accept the new AI-based tools into learning since their confidence is boosted. On a higher level, the government should gradually and seamlessly insert technology integration into the curriculum. Encouragement on early exposure and engagement to educational technologies among students can escalate their confidence and lessen anxiety towards new AI tools. To conclude, while cognitive styles is the central idea of this study, it is advisable not to forget other factors like technology literacy, prior exposure, effective teaching methodology, and perceived usefulness as well as perceived ease of use also share their importance contributing to the students' technology acceptance. Addressing these factors can help create more effective and engaging learning environments with AI-based educational technologies.

Recommendations for Future Research

It is recommended that upcoming research in this area should pay close attention to long-term studies that monitor the technological literacy evolution over time. The relevance of this suggestion is it enables critical phases identification for impactful intervention as well as understanding the influences of prolonged exposure to these technologies on its acceptance if the students' technology familiarity progression is analysed. Another important area is the impact of different technology experiences on students' adoption of AI-based teaching aids. Researchers should explore how exposure to various educational technologies affects students' readiness and adaptability to new tools. This can determine if familiarity with one technology enhances acceptance of another. Future research is suggested to conduct study on the way cultural settings, financial backgrounds, and academic environments affect learners' attitudes and their intentional use of AI-based education resources. Moreover, comparative studies that encompass diverse educational systems and regions can expose how these factors influence technology acceptance and determine best practices for adaptation. Nevertheless, the acceptance of technology among students like ChatGPT is influenced by peer decisions, perceived usefulness, innovation, and usage satisfaction as mentioned earlier in the recent study. Therefore, these factors can be investigated for future research to figure out its influence on technology adoption.

CONCLUSION

This study investigated the acceptance of AI-based educational technology tools, specifically ChatGPT and Kahoot among ESL secondary school students in SMK Takis, Papar. On an important note, cognitive styles

are measured to see the influence it gives on the acceptance level by using a descriptive quantitative approach. Based on the findings, the study reveals that students show a high acceptance of ChatGPT and Kahoot into their English language learning with the majority of them recognising the benefits and ease of use of these tools. Although some feedback indicated some variability due certain factors like limited access and differed digital literacy, the general acceptance was positive suggesting that AI tools could improve learning outcomes if integrated into language learning. The central finding of this study showed that cognitive styles are not a primary indicator that affect technology acceptance. Instead, other key determinants like technological literacy, prior exposure to technology, effective teaching methods, and the perceived usefulness as well as ease of use of AI tools share important roles in ascertaining the acceptance of technology. By addressing these factors, it can assist both educators and developers to facilitate learning by considering these AI tools to be integrated into language lessons which ultimately improve student learning outcomes.

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PRESERVICE TEACHERS' ACHIEVEMENT AND RETENTION OF PROBLEM-SOLVING SKILLS IN PROGRAMMING: A CHATGPT-BASED FLIPPED CLASSROOM ANALYSIS

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ABSTRACT

This pre-experimental study, utilizing a one-group pretest and posttest design, aims to investigate the effects of a ChatGPT-based flipped classroom approach on preservice teachers' achievement and retention of problem-solving skills in programming. The study sample comprised 33 preservice teachers (one intact class) from an Institute of Teacher Education Malaysia in Sabah, Malaysia, selected through cluster sampling. A Computer Programming Achievement Test (CPAT) were used as the research instrument, which were administered during pretest, posttest and delayed posttest. Data analysis was conducted using one-way repeated measures ANOVA. The results showed an increased in problem-solving skills from the pretest ($M=16.84$, $SD=8.35$) to the posttest ($M=31.25$, $SD=13.25$), indicating significant improvement in preservice' teachers achievement. Additionally, retention of problem-solving skills was evident, with the delayed posttest scores ($M=24.43$, $SD=6.68$) significantly higher than the pretest scores, though slightly lower than the posttest scores, suggesting some decay over time but overall retention of the skills learned. This research suggests that integrating artificial intelligence (AI) tools, such as ChatGPT, in educational setting can lead to substantial improvements in learning outcomes, which provides valuable resource for educators aiming to foster advanced problem-solving abilities in their students

Keyword(s): *Flipped classroom, artificial intelligence, ChatGPT, programming, teaching and learning*

INTRODUCTION

Digital technology has become an important component of modern education, especially in fostering an interactive and dynamic learning environment (George & Reddy, 2024) which is able to improve students' performance, improve the effectiveness of teaching and learning and overcome the shortcomings of conventional teaching methods (Wang et al., 2024). At the same time, the presence of artificial intelligence applications such as ChatGPT has revolutionized and transformed the world of education (Bouschery et al., 2023; Yeruva, 2023) by triggering new learning methods that challenge conventional methods (Sarwar et al., 2024).

Problem Statement

Programming is a subject and skill that has been given priority in the national education system since 2016 (Mazlee Malik, 2019) since programming is able to meet the needs of the 21st century job industry as well as Industry Revolution 4.0 (IR 4.0) which requires a workforce with computational thinking skills such as critical thinking and problem solving (Salleh Hudin, 2024) as well as high-level thinking skills (Voon et al., 2022). However, the achievement of Malaysian students in programming is still at a less encouraging level. A study by Quah et al. (2023) found that community college students obtained low scores in the programming test for the Basic Programming subject which involves theoretical and practical evaluation, where the analysis of the Learning Outcomes Course 1 (HPK 1) of the subject showed that students did not reach a score of 80% for two semester. The study of Abdul Rahman et al. (2024) also found that the number of Universiti Teknologi Mara (UiTM) students who failed in the exam involving the Fundamentals of Computerized Problem Solving course with the course code CSC415 containing programming elements was high, i.e. 35.7%. A study by Maskur et al. (2020) also showed that the achievement score of the programming course for polytechnic students was at a moderate level where of the 76 students who sat the test for the course, as many as 62% of the students obtained a B grade, i.e. scored in the range of 64 to 74 percent, with 10% students obtained a grade of C. Furthermore, Yusof et al. (2023) also found that the achievement of Malaysian students in programming was at a low to moderate level.

With that, there is a need to apply teaching and learning strategies that are able to improve the skills and achievement of students in programming considering that the achievement of students who are at a less satisfactory level in programming is due to weaknesses in the implementation of the teaching and learning of programming by teachers (Yusof et al., 2023). In addition, there is a need to improve the skills and achievements of trainee teachers in programming since trainee teachers also experience difficulties in mastering programming concepts and skills (Gökoğlu & Kılıç, 2023).

Research Objectives

The objectives of this study are to identify the effectiveness of ChatGPT-based flipped classroom in enhancing achievement and facilitating the retention of problem-solving skills among preservice teachers in programming.

Research Questions

Based on the objectives of the study, the research questions are : i) Does ChatGPT-based flipped classroom method affect the achievement of preservice teachers in programming compared to conventional methods? and ii) Does ChatGPT-based flipped classroom method facilitates the retention of problem-solving skills among preservice teachers in programming?

Research Hypothesis

H₀1: There is no significant difference between the mean scores of the pretest, posttest and delayed posttest of preservice teachers who were taught using ChatGPT-based flipped classroom involving the achievement in programming

H₀2: There is no significant difference between the mean scores of the pretest, posttest and delayed posttest of preservice teachers who were taught using ChatGPT-based flipped classroom involving the retention of problem-solving skills in programming

LITERATURE REVIEW

Flipped classroom is an instructional method that "flips" the conventional learning environment, where students prepare in advance before attending class by exploring, understanding and learning a topic through self-directed study pre-class. The in-class instructional sessions are then filled with activities designed to strengthen students' understanding and skills related to the topic (Gutierrez-Gonzalez et al., 2023). Students participate in numerous activities promoting active learning, such as discussions, case studies, simulations, hands-on exercises and group projects instead of passively taking in lectures (Ha et al., 2019). According to Güler et al. (2023), the flipped classroom method promotes active learning among students as it fosters student-centered instructional sessions that provide a learning environment that supports autonomy. Autonomy in a flipped classroom refers to the freedom and responsibility given to students to manage and control their own learning processes (Ettien & Touré, 2023). Teachers, on the other hand, do not need to spend much time explaining the topic to be learned by students, but instead, use the in-class sessions to focus on activities that can reinforce and enhance students' understanding and knowledge of the topic. The teacher's role in a flipped classroom changes from that of the single source of knowledge to that of a facilitator or guide, fostering an encouraging and engaging learning environment that enable dialogues, offer feedback and promote greater comprehension of the material (Al-Samarraie et al., 2020). At the same time, the adoption of instructional videos as pre-class learning materials is a widespread pedagogical practice in a flipped classroom environment, also known as video-based flipped learning (Liao & Wu, 2023; Yu & Gao, 2022). However, Mennega and Mawela (2024) found that instructional videos may not provide immediate explanations or feedback if students encounter any questions or issues during self-directed learning, and may not sufficiently facilitate personalized learning. The content of the instructional videos is limited and depends solely on what the teacher provides. Therefore, there is a need to explore the potential of ChatGPT as an artificial intelligence (AI) technology to enhance the implementation of the flipped classroom method, especially to address the limitations of using instructional videos in a flipped classroom environment.

ChatGPT, which stands for Chat Generative Pre-trained Transformer, is a language model developed by OpenAI that uses AI technology to understand and generate text responses based on input provided by users (Roumeliotis & Tselikas, 2023). A language model refers to a program designed to analyze, understand, generate and manipulate human language automatically. This program uses natural language processing (NLP) and machine learning technology to analyze large amounts of human-generated data, such as text and speech, enabling it to understand and respond to the data it receives. Natural language processing allows the program to read and understand natural language input, which enables humans to interact with machines using natural language. ChatGPT is a generative AI technology, which is a form of AI that can produce content such as text, images, audio and video. ChatGPT works by processing user text input and generating relevant responses using machine learning analysis, particularly through deep learning modeling (Jo & Park, 2024). ChatGPT can generate responses in various formats, including short answers, long essays, and dialogue-based interactions (OpenAI, 2023) using human-like text. This ability has enabled ChatGPT to facilitate multiple functions in the workplace (Orrù et al., 2023) such as drafting content, provides answers to queries and aids in brainstorming sessions (Verma,

2023) and this has become evident in the field of education. The use of ChatGPT in education has generated widespread interest and attention due to its potential to enrich students' learning experiences (Rudolph et al., 2023). ChatGPT not only assists in preparing assessments, generating essays, and translating languages but is also capable of answering a wide range of questions, summarizing texts and interacting with users as a peer. However, more in-depth empirical studies are needed on the integration of ChatGPT in flipped classrooms (Dung, 2024), as current research on its impact on learning outcomes are still limited, particularly in the context of computer science and programming education (Keong & JiMei, 2024).

The Digital Education Policy, launched by the Malaysian Minister of Education, Fadhlina Sidek, on November 28th, 2023, is the Ministry of Education's (MOE) proactive initiative which aims to guide all stakeholders in navigating the digital era, recognizing that today's teaching and learning environment is driven by digital literacy (Bahagian Sumber dan Teknologi Pendidikan, 2023). According to Salleh Hudin (2024), the teaching and learning of programming, which is a form of digital literacy, is gaining increased attention, particularly at the primary school level. This shift in focus aligns with the demands of the Fourth Industrial Revolution of Industry 4.0 as well as the widespread influence of AI in daily life. The ability to master programming is essential for students to enhance their digital literacy skills needed to navigate the challenges of the 21st century, particularly among Malaysian students as studies by Yusriza Mohd Yusof et al. (2021), Quah et al. (2023), Abdul Rahman et al. (2024), Maskur et al. (2020) and Yusof et al. (2023) clearly shows that Malaysian students struggle to master programming. At the same time, the challenges faced by preservice teachers in mastering the concepts and skills of programming remains underexplored. Therefore, this study is necessary to identify the effectiveness of the ChatGPT-based flipped classroom method in addressing the challenges faced by preservice teachers in programming especially in regards to achievement and retention of problem-solving skills.

The teaching and learning of programming has become a priority across many countries, driven by the need to prepare students for a future where digital literacy has become essential. Programming is not only a technical skill but also a means of developing problem-solving abilities, logical thinking and creativity. Guzdial & Shreiner (2021) emphasizes that the inclusion of programming in K-12 education is crucial to foster computational thinking, a skill set that is necessary for success in a variety of modern professions. For preservice teachers, achieving proficiency in programming is not just about understanding how to write code; it is about developing the ability to teach these concepts in a way that is accessible and engaging for students.

As educational systems worldwide place a growing emphasis on STEM (Science, Technology, Engineering and Mathematics) education, the ability of teachers to achieve competency in programming is essential. A solid achievement in programming among teachers has a direct impact on their teaching effectiveness as teachers who are proficient in programming are more confident in their ability to deliver content, design meaningful learning experiences and support students in overcoming challenges. In regards to preservice teachers, although Erol and Kurt (2017) stated that achievement in programming among preservice teachers lead to improved effectiveness in teaching coding to students, studies by Quah et al. (2023), Abdul Rahman et al. (2024), Maskur et al. (2020) and Yusof et al. (2023) highlighted the challenges faced by Malaysian students in achieving proficiency in programming. It is therefore crucial to shift the focus towards understanding the programming achievement of Malaysian preservice teachers, who will guide the next generation of students through the complexities of coding and computational thinking in programming.

Problem-solving skills are fundamental in programming, particularly for preservice teachers who will be responsible for teaching these skills to future generations. The ability to achieve and retain these skills is crucial not only for their success as educators but also to pass it to their students. In the context of programming, problem-solving skills are essential for understanding and writing code, debugging and generating solutions, where complex problems are broken down into manageable parts before being solved. For preservice teachers, mastering these skills are important as they will need to teach these concepts effectively to their students. As stated by Dong et al. (2024), problem-solving is a key component of computational thinking, which is an element of programming, and is seen as an essential 21st century skill. Their study highlighted the importance of developing these skills particularly for those who will become educators, as it lays the foundation for teaching programming effectively. Retention of problem-solving skills is equally important as retaining these skills ensures that preservice teachers can continue to apply and teach programming concepts effectively throughout their careers. In regards to programming, teachers who retain strong problem-solving skills are more adaptable to changes in programming languages and technologies (Lionelle et al., 2022), which is essential in a field that is constantly evolving. The ability to retain problem-solving skills also impacts the quality of education that students receive. Adeoye & Jimoh (2023) stated that teachers who retain their problem-solving skills are more likely to create learning environments that encourage exploration, creativity and resilience among students. This is particularly important in programming, where students often face challenges that require persistent problem-solving efforts. However, the dynamic nature of programming and rapid technological advancements pose challenges to retaining problem-solving skills and there is limited research on how these changes affect preservice teachers and their ability to retain problem-solving. Therefore, there is a need to conduct this study to determine the effectiveness of the ChatGPT-based flipped classroom method in addressing the challenges faced by preservice teachers in programming especially in terms of achievement and retaining problem-solving skills.

METHODS AND SAMPLING

This quantitative study uses a pre-experimental one-group pretest and posttest design. 33 preservice teachers from an intact class at the Institute of Teacher Education Malaysia, Sabah campus was chosen as the study sample. According to Kar and Ramalingam (2013), a sample size of around 30 is sufficient for study purposes.

A Computer Programming Achievement Test (CPAT) was used as the research instrument, which was adapted from the study by Omeh and Olewe (2021). The CPAT used in this study contains 35 multiple-choice items which were developed to measure the achievement and retention of problem solving skills of preservice teachers in programming. The instrument was administered during the pretest, posttest, and delayed posttest using the same items to ensure consistent comparison. However, the items in the posttest and delayed posttest were rearranged.

The face and content validity of the research instrument were evaluated through consultation with two lecturers: one an expert in programming and the other an expert in language studies. A pilot test was conducted involving 30 preservice teachers who were not part of the study samples to determine the pretest's reliability. The reliability of the pretest was determined using Kuder-Richardson 20 (KR-20) analysis, which is suitable for evaluating multiple-choice items. KR-20 is specifically designed to measure the internal consistency of tests with dichotomous variables, such as multiple-choice items (Thomas et al., 2022). According to Vrotsou et al. (2018), a KR-20 value of 0.70 or higher indicates a good and acceptable reliability. In this study, the KR-20 value was 0.96, demonstrating that the adapted CPAT has high reliability.

This study was carried out for ten weeks. The pretest was administered in the first week, the posttest in the eighth week and the delayed posttest in the tenth week. Teaching and learning sessions were conducted over six weeks starting from the second to the seventh week, during which the study samples were exposed to the teaching and learning of programming using the ChatGPT-based flipped classroom method.

Data were analyzed using one-way repeated measures ANOVA to determine the differences in mean scores between the pretest, posttest and delayed posttest, evaluating the effect of the ChatGPT-based flipped classroom method on the teaching and learning of programming. This analysis aims to identify the achievement and retention of problem-solving skills among the study samples.

RESULTS/FINDINGS & DISCUSSION

Before the analysis was carried out, the assumptions of data normality must be met. With that, the Shapiro-Wilk statistical test was used to analyze the normality of the pretest, posttest and delayed posttest shown in Table 1.

Table 1

Data Normality Analysis

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.20	32	.06	.87	32	.08
Posttest	.21	32	.06	.86	32	.06
Delayed posttest	.14	32	.19	.93	32	.49

The Sig. value in the Shapiro-Wilk test is .08 for the pretest, .06 for the posttest and .49 for the delayed posttest. Since all three values are greater than the significant value of .05, the data for the pretest, posttest and delayed posttest are normally distributed. With that, one-way repeated measures ANOVA can be used to analyze the data.

H₀1: There is no significant difference between the mean scores of the pretest, posttest and delayed posttest of preservice teachers who were taught using ChatGPT-based flipped classroom involving the achievement in programming

Table 2 shows the pretest mean score (M=16.84, SD=8.35), the posttest mean score (M=31.25, SD=13.25) and the delayed posttest mean score (M=24.43, SD=6.68). Based on the table, the posttest mean score is higher than the pretest mean score and the delayed posttest mean score. This indicates that preservice teachers experienced an improved and optimal achievement score when exposed to the use of ChatGPT-based flipped classroom in the teaching and learning of programming.

Table 2

Statistics of Pretest Mean Score, Posttest Mean Score and Delayed Posttest Mean Score

	Pretest	Posttest	Delayed posttest
N	33	33	33
Mean (M)	16.84	31.25	24.43
Standard deviation (SD)	8.35	13.25	6.68

N = Number of samples

H₀₂: There is no significant difference between the mean scores of the pretest, posttest and delayed posttest of preservice teachers who were taught using ChatGPT-based flipped classroom involving the retention of problem-solving skills in programming

To determine if the ChatGPT-based flipped classroom method can effectively retain problem-solving skills, a homogeneity of variance test needs to be conducted to determine the suitability of using one-way repeated measures ANOVA. Based on the Tests of Homogeneity of Variances in Table 3, the value of $p = .68$, which is greater than the significant value of .05, shows that the data variance is homogenous. This indicates that one-way repeated measures ANOVA can be used to analyze the data and evaluate the effectiveness of ChatGPT-based flipped classroom to retain problem-solving skills.

Table 3
Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Test series	Based on mean	.25	2	39	.68

Based on Table 4, $p = .001$ is lower than the significant value of .05. Therefore, the null hypothesis is rejected. There is a significant difference between the mean scores of the pretest, posttest and delayed posttest. Since the one-way repeated measures ANOVA analysis showed that there is a significant difference between the three test series, further tests were performed to identify those differences based on the combinations of the test series.

Since the variance of the data is homogeneous, the Post Hoc Bonferroni test was used to identify the difference in combination of the test series. Table 5 shows that there is a significant difference in the mean score between the pretest, posttest and delayed posttest since all the Sig. value is lower than the significant value of .05 for each combination of test series. Thus, the null hypothesis is rejected. This indicates that the use of ChatGPT-based flipped classroom in the teaching and learning of programming is able to effectively retain problem-solving skills.

Table 4
One-Way ANOVA Analysis

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	506.11	2	254.03	343.97	.001
Within Groups	29.02	42	.72		
Total	51.91	44			

Table 5*Bonferroni Post Hoc Analysis*

					95% Confidence Interval	
					Lower Bound	Upper Bound
		Mean Difference	Std. Error	Sig.		
Pretest	Posttest	-14.41*	.31	.00	-8.16	-6.59
	Delayed posttest	-7.59*	.31	.02	-1.34	.17
Posttest	Pretest	14.41*	.31	.00	6.59	8.15
	Delayed posttest	6.82*	.31	.00	6.01	7.57
Delayed posttest	Pretest	7.59*	.31	.02	-.18	1.33
	Posttest	-6.82*	.31	.00	-7.58	-6.00

Findings of the study indicate that the ChatGPT-based flipped classroom method shows significant improvements in both increasing preservice teachers' achievement and retention of problem-solving skills in programming, highlighting the potential of integrating AI-based tools into modern educational instructions.

In regards to achievement in programming, this study showed a notable increase in mean achievement scores from the pretest ($M=16.84$, $SD=8.35$) to the posttest ($M=31.25$, $SD=13.25$), indicating that the ChatGPT-based flipped classroom method significantly enhances preservice teachers' achievement in programming. This improvement in achievement aligns with recent research which suggests that AI-supported learning environments can facilitate deeper understanding and better academic performance by providing personalized, adaptive learning experiences (Ray & Sikdar, 2024). The integration of ChatGPT into the flipped classroom environment has further enhanced the effectiveness of personalized learning, providing preservice teachers with instant feedback and tailored support that promotes deeper understanding and engagement in programming concepts, in line with the study by Li (2023). This in turn promotes active learning, such as discussions, collaborative coding and problem-solving activities, which leads to a deeper understanding of programming concepts, thereby boosting preservice teachers' achievement. Furthermore, ChatGPT acts as an effective scaffolding tool by offering tailored hints and guiding questions that help preservice teachers advance from basic to more complex levels of programming concepts. This structured, step-by-step support ensures that preservice teachers develop a solid conceptual foundation of programming, leading to improved achievement, as stated in the study by Lee & Zhai (2024).

Findings of the delayed posttest scores ($M=24.43$, $SD=6.68$) shows that the retention of problem-solving skills, while slightly lower than the posttest scores, remained significantly higher than the pretest scores. This suggests that the skills acquired through the ChatGPT-based flipped classroom were largely retained over time, despite some decay. Programming is basically a problem-solving activity. Retaining problem-solving skills enables preservice teachers to effectively apply their knowledge to new and unfamiliar challenges, ensuring they can adapt and find solutions in various contexts. The ChatGPT-based flipped classroom method facilitates the retention of problem-solving skills in programming by providing personalized practice, instant feedback and scaffolding complex problems. It promotes active learning and continuous reinforcement, ensuring preservice teachers effectively internalize and retain problem-solving abilities over time as proven through the study by Quinstein (2024).

When preservice teachers participate actively in the teaching and learning process, particularly by focusing and paying close attention to the lecturer's instruction, the lecturer can

effectively guide them in solving programming issues that require the use of problem-solving skills. Over time, this active engagement fosters the development and retention of problem-solving skills, which was proven through the findings of the delayed posttest where despite having completed the teaching and learning of programming using ChatGPT-based flipped classroom for two weeks, the preservice teachers were still able to apply the problem-solving techniques they had learned, as proven by their sustained performance in the delayed posttest. This indicates that the skills acquired during an AI-assisted instruction, particularly ChatGPT-based flipped classroom sessions, were not only effectively learned but also retained over time, demonstrating the lasting impact of active engagement and guided instruction on the retention of problem-solving skills as highlighted by Quinstein (2024).

CONCLUSION

To conclude, the ChatGPT-based flipped classroom method has demonstrated significant benefits for preservice teachers in programming instructions particularly in improving achievement as well as enhancing the retention of problem-solving skills. Further research should be carried out to compare and explore how traditional flipped classroom and ChatGPT-based flipped classroom impact preservice teachers' achievement and retention. By comparing and exploring both methods, a clearer understanding of how ChatGPT enhances learning outcomes compared to traditional methods could be achieved. This would provide valuable insights into creating a more supportive and effective learning environments for sustaining preservice teachers' achievement and promoting long-term retention of problem-solving skills.

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FROM PAGE TO SCREEN: EXPLORING MALAYSIAN TEACHERS' PERSPECTIVES ON THE FEASIBILITY OF A MOBILE READING MODULE

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ABSTRACT

Among the significant challenges several Malaysian teachers face, especially those teaching in primary school, is the need for more resources to teach reading comprehension. The implementation of mobile technologies provides favourable opportunities to facilitate teachers' teaching competencies in teaching reading comprehension instructions. Nevertheless, the successful implementation of the mobile reading module depends on the perceptions and contributions of teachers. This study investigates the viewpoints of Malaysian primary school teachers regarding the needs and development of a mobile reading module. A survey with open-ended questions was sent to nine Year 5 teachers in Sabah, Malaysia, to collect their perspectives. All the teachers who participated in the activity provided constructive opinions regarding a mobile reading module, highlighting the potential advantages of using the mobile reading module to facilitate teaching instructions. The findings offer significant viewpoints from Malaysian primary school teachers regarding developing and implementing mobile reading initiatives. These findings may influence the development of mobile reading materials that are both relevant to the context and coordinated with teachers to improve teaching comprehension skills among teachers in Malaysia.

Keywords: mobile learning, reading comprehension, teacher perspectives, primary education Malaysia

INTRODUCTION

English has been emphasised as one of the most important languages to acquire. Despite the changes in Malaysia's curriculum policies over the years, English continues to be a compulsory subject taught at primary and secondary schools (Bakar et al., 2021). According to Sivalingam (2020), the Malaysian education system has undergone many significant changes since it began in 1824. The education system in Malaysia has experienced three significant transformations. The Integrated English Language Syllabus for Primary Schools (KBSR) was introduced in 1982, followed by the Standard English Language Curriculum for Primary School (KSSR) in 2002. The current policy, Malaysian Education Blueprint 2013-2025, introduced in 2012, lays out the vision and plans to shape the future direction of education in Malaysia (C. Alih et al., 2021). The nation's aspirations are for a better future learning system, holistic development of students, and better English proficiency.

The changes in the education system in Malaysia include reform initiatives and rising realities of future endeavours (Bakar et al., 2021). The current changes in our education system, especially in the changes in syllabus and framework for primary school students around the country, have influenced the pedagogical approach. There have recently been more changes in textbooks used for Year 5 students. The usual textbook produced by our

Ministry of Education (MOE) is then changed to another new textbook produced through collaboration with Cambridge University. Deputy Education Minister Datuk. P Kalamathan mentioned that only imported textbooks have been used since 2018. This change must be clarified among the teachers since this new framework is new. By referring to the second shift of the Preliminary Report Malaysia Education Blueprint (2013-2025), every student who studies in Malaysia should be able to master the English Language and Bahasa Malaysia.

Fluency is a solid foundation in reading skills that develops readers' comprehension skills. According to Connor et al. (2022), fluency is a benchmark for reading achievement, and research has been conducted to show the connection between reading fluency and reading comprehension. To summarise, proficient reading comprehension is essential for primary school students as it enables them to achieve academic excellence and thrive throughout their lives. Therefore, developing this skill early in literacy with the teachers' relevant teaching instructions and materials is crucial.

Educational administrators have conducted many courses to teach teachers how to drive lessons pedagogically as the curriculum landscapes change. However, there are limited courses and studies regarding the pedagogical impact of integrating mobile phones as a medium of learning sessions to learn the English language in our country (Kassim et al., 2020). Therefore, this paper is for needs analysis purposes to help teachers with suitable teaching materials to enhance teaching instruction of reading comprehension for Year 5 primary teachers. In a case study by Ahmad and Abd Samad (2018), Teaching English to Young Learners (TEYL) Teachers in Malaysia, the researchers identified teachers as knowledge providers because of young learners' curiosity. Participants in this study emphasised the importance of having the necessary applications using a smartphone to get quick answers within seconds. As a knowledge provider, the teacher's primary function in the learning session is to make the students trust the teacher's credibility as their most crucial reference while learning the language. The study shows the importance of having practical mobile phone applications that guide teachers during English lessons. Occasionally, a suitable platform will help the teacher as a knowledge provider to give the students experience in real-life situations by providing the knowledge and guidance required to assist the lesson.

LITERATURE REVIEW

It is necessary to utilise abundant study materials to enhance our language skills. According to Crompton et al. (2020), some scholars suggest that mobile devices can be implemented to modify the learning process. The technology used in this era implied the changes in our education system as it parallels modernisation. This freedom to find more knowledge and information with fewer restrictions through the internet has helped students from various stages of the learning process (Lehman, 2020). The learning process was more smoothly conducted than in the past. Thus, it is another advantage for today's generation to learn anywhere as long the devices are connected to the internet.

The similarity between m-learning and e-learning is the practicality of learning that can occur anywhere or anytime. Ozdamli and Cavus (2011) listed the essential elements of mobile learning as teachers, learners, content, assessment, and environment. Meanwhile, the characteristics of mobile learning include blended learning, interactive, collaborative, private, and portable mobile tools to carry around. If all the elements and attributes are fulfilled, the learners can experience authentic learning anywhere or anytime.

A study conducted by Hussin et al. (2020) on the effectiveness of web systems and mobile applications for their end-users describes that mobile applications are more effective in terms of end-users effectiveness compared to web systems. The participants of the study state that the web system has too many items, making it more crowded than mobile applications. However, they also feel exasperated due to the need to install mobile applications

that take quite a large amount of storage. Therefore, it is essential to develop mobile applications with less storage and simple items for this study to reach end-user effectiveness.

The accelerated progress of mobile technology has created new opportunities for language learning, especially in English as a Second Language (ESL) instruction. Mobile-based ESL modules are an appealing resource for teachers to improve their teaching methods and help students improve their language skills. Despite the increasing interest, substantial gaps exist in the current literature about mobile-based ESL courses for teachers. Kamal et al. (2021), in their study to assess teachers' perspectives on using guided mobile learning using the Mobile Intervention Module (MIM) in English language instruction, found that all instructors positively perceive assisted mobile learning through the MIM, as indicated by the results. This study suggests that guided mobile learning can help transition teaching methods from traditional to technology-assisted, incorporating interactive activities in learning, improving language abilities, and increasing engagement. As for future research suggestions, it is advised that mobile learning should be incorporated into lessons in a guided approach for optimal outcomes. This study suggests a well-structured module integrating the curriculum with mobile applications is required.

METHODOLOGY

This study was conducted as a qualitative study to find the answer to a research question: *What is needed to develop an m-reading ESL module for the Year 5 primary ESL teachers?* This study aims to explore the need to develop an m-reading ESL module for Year 5 primary school teachers. A qualitative study was employed as the research methodology to focus on teachers' points of view. A questionnaire consisting of open-ended questions was distributed through Google Forms to a group of primary school teachers in Sabah, Malaysia. The items are as the following:

1. What is your opinion on developing an m-reading module for year five primary ESL teachers to support reading comprehension instruction?
2. What gadgets are suitable for developing m-reading modules for Year 5 primary ESL teachers?
3. What features or components would you like to be included in an m-reading module to support reading comprehension instruction effectively?
4. What kinds of training, support, or resources would you need to use an m-reading module for teaching reading comprehension effectively?
5. How could an m-reading module be integrated into your reading comprehension curriculum or instructional approach?
6. Would you prefer the topic based on the Year 5 textbook or random topics?
7. What types of assessments should be included in an m-reading module for students?

According to Creswell (2018), open-ended questions encourage participants to generate responses, allowing the researcher to understand the investigated subject more deeply. The participants' contribution was significant in determining the components and features needed for an efficient mobile reading module intervention.

Purposive sampling is a method researchers use to deliberately choose individuals who have direct experience with the significant occurrence or concept being investigated in the study (Creswell & Plano, 2011). Hence, this study employs a purposive sampling of nine primary school teachers in Sabah, Malaysia, who were responsible for teaching English to Year 5 students. Table 1 displays the demographic characteristics of the sample.

Table 1: Demographic characteristics of participants

No.	Characteristic	Percentage (%)
1.	Gender	
	Female	33.3
	Male	66.7
2.	Age Group	
	25 - 34	33.3
	35 - 44	11.1
	44 - 54	55.6
3.	Highest Academic Qualification	
	Bachelor's Degree	77.8
	Master's Degree	22.2
4.	Teaching Experience	
	0-5 years	22.2
	6-10 years	11.1
	16 years and above	66.7

The participants were selected using a purposive sampling method. Based on purposive sampling methods, participants in a research study were selected when the researcher intentionally chooses individuals based on specific needs (Etikan et al., 2016). Teachers who teach Year 5 students in primary schools in Sabah are the main selection criteria for this study. Therefore, the sample approach was selected to ensure that the participants acquired the skills and knowledge required to offer valuable insights regarding the feasibility of a mobile reading module for Year 5 ESL teachers. Based on the table above, most participants (66.7%) were male teachers willing to answer the survey. As for the age range, most of the participants with 55.6% of the participants are between 44 to 54 years old. Parallel to this, the highest percentage of teaching experience is 66.7%, which shows more than 16 years of teaching experience. By examining the demographic table, 77.8% of the participants earned a Bachelor's Degree as their highest qualification, while only 22.2% earned a Master's Degree.

FINDINGS AND DISCUSSIONS

It is imperative to ask teachers' opinions regarding the relevance of the module, whether there is a need to develop any module that will help the teachers with teaching instructions or merely just for an additional intervention. Table 2 below summarises participants' feedback on the open-ended questionnaires.

Table 2: Findings from the open-ended questionnaire

Feedback Theme	Participant Quotes
Needs to Develop Mobile Reading Module for Teachers	<p><i>"This can facilitate teachers with teaching instructions to guide them."</i></p> <p><i>"It is truly a great idea as the module able to ease as well as improve the teaching and learning process for ESL teachers. It helps ESL teachers to determine which learning style is suitable for the students."</i></p> <p><i>"Good idea."</i></p> <p><i>"Interesting apps or activity."</i></p> <p><i>"Should be developed."</i></p> <p><i>"It's an effort to support other teachers."</i></p>

	<i>"Its compulsory to cope with current challenges in education and to get in line with rapidly developing technologies."</i>
Suitable Gadgets	<i>"Mobile phones, tablets, laptop." "E-reader and books." "Ipad" "Mobile phone, tablet, iPad and laptop."</i>
Features or Components in The Module	<i>"Lesson plan with instructions provided." "Videos." "Audio." "Lesson plan and supporting from meddle leader." "Reading text." "Lesson plan, videos, reading text, flash cards and exercises" "Visualise materials." "Suggestion text of different level of students, video or audio of related topics, suggestion worksheet."</i>
Resources to Implement The Module	<i>"Courses, video explanation, complete modules." "Digital training." "Courses." "Ebook." "Teacher's training about m-reading contents."</i>
Mobile Reading Module Integration	<i>"By using the module as additional or main activities in classroom." "The module should integrate with local culture of Malaysians." "Incorporate reading and writing instructions." "Learn about skill on instructional." "Using multimedia reading materials." "Broaden the topic." "By adding some materials from the DSKP." "I will have the idea on how to choose the suitable instruction to teach reading comprehension."</i>
Module's Topics	Based on Year 5 topics – 55.6% Random topics – 44.4%
Types of Assessments	Differentiated level of worksheets – 77.8% Online based assessments – 22.2%

The participants' responses were analysed using a thematic analysis approach to identify the key themes that emerged from the open-ended feedback. By referring to Table 2 of participants' feedback, there is a need to develop a mobile reading module for teachers as it is aligned with current challenges and educational needs. The teachers acknowledged the mobile reading module as a timely and pertinent project that may efficiently cater to the changing requirements of ESL teaching methods in the digital era. Participants stressed the significance of creating technical solutions that may address current educational challenges and align with rapidly shifting educational technologies. All this feedback supports Shofi and Wardatul (2022), who believe teachers should implement mobile applications to teach reading comprehension.

Moreover, integrating the m-reading module with existing curricula is essential for its relevance and applicability. Participants expressed a strong desire for the module to reflect local cultural contexts and incorporate instructional elements that support both reading and writing skills. This integration not only makes the module more relatable for students but also

ensures that it complements the Malaysian education framework (DSKP). By aligning the module's content with national standards and incorporating culturally relevant topics, the module can significantly enhance its effectiveness as a teaching tool.

The choice of technology is a critical component in the development of the m-reading module. Feedback from participants indicated that a variety of devices—such as mobile phones, tablets, laptops, and e-readers—should be supported. This diversity is crucial, as it allows for broader accessibility among both teachers and students, accommodating different levels of technological access within classrooms. By ensuring compatibility across multiple platforms, the module can facilitate more effective learning experiences, allowing educators to engage students in meaningful ways regardless of the devices they have on hand. Participants also expressed enthusiasm regarding the potential of the mobile reading module to incorporate engaging and interactive features, such as lesson plans, videos, reading text, audio, visual materials, and worksheets. For the resource to function as the module's reference for the teachers, the participants suggested that the researcher provide related courses, training, or e-books to explain how to use the module.

A mobile reading module could also provide opportunities for continuous improvements for ESL teachers to facilitate suitable teaching instructions and guide them in the implementation process. Moreover, integrating the m-reading module with existing curricula is essential for its relevance and applicability. Participants expressed a strong desire for the module to reflect local cultural contexts and incorporate instructional elements that support both reading and writing skills. This integration not only makes the module more relatable for students but also ensures that it complements the Malaysian education framework (DSKP). By aligning the module's content with national standards and incorporating culturally relevant topics, the module can significantly enhance its effectiveness as a teaching tool.

Other feedback on module integration is that it should be relevant to Malaysia's cultural context and diversity. In line with the statement from Hernandez et al. (2020), teachers and students had favourable thoughts regarding the importance of acquiring cultural knowledge to acquire the English language. The study's findings may encourage teachers to incorporate culturally-oriented resources into their instructional practices. There is a slight preference for basing the module's topics on the Year 5 curriculum (55.6%), but a significant portion also supports including random topics (44.4%). For assessments, most participants (77.8%) preferred using differentiated-level worksheets as an appropriate evaluation approach for the mobile reading module. Participants also suggested the incorporation of essential elements such as comprehensive lesson plans, multimedia resources (including videos and audio), and interactive exercises.

The emphasis on visual materials and differentiated content highlights the importance of catering to various learning styles and abilities, ensuring that all students can engage meaningfully with the reading materials. Additionally, providing clear instructional support for teachers is vital, enabling them to implement the module effectively within their classrooms and enhance their overall teaching strategies. The teachers strongly prefer assessment products that may be customised to meet the students' different learning needs and competence levels.

CONCLUSION

By referring to the feedback summary, teachers significantly support the development of a mobile reading module, acknowledging its potential to improve learning and instruction, specifically for English as a Second Language (ESL) teaching. They perceive it as an essential instrument to tackle existing educational barriers and endure technological progress. As for device compatibility, it will be best to be compatible with a range of devices to ensure accessibility for all users. The participants prefer a comprehensive module encompassing

lesson plans, instructional videos, audio content, reading texts, and interactive exercises. Next, in order to effectively implement the module, teachers require adequate training and support. The emphasis should be on aligning the content with local Malaysian culture and incorporating reading and writing instructions. The majority of the participants voted for differentiated worksheets to cater to students' different levels of proficiency. In order to successfully deploy the module, it is necessary to carefully examine device compatibility, complete features, sufficient training materials, and strategic integration into existing curricula. Additionally, it is essential to ensure that the content is relevant and that proper assessment methods are used.

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EFFECTS OF QUIZLET AND PODCAST IN VOCABULARY ACQUISITION OF LOWER SECONDARY SCHOOL STUDENTS

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Abstract

This study investigates the influence of Quizlet and podcasts on the acquisition of vocabulary in students attending lower secondary school. The study aims to examine the influence of various digital tools on pupils' ability to acquire and retain new language. The study employed mixed-method study by combining quasi-experimental design and qualitative focus group discussion. This study involved a sample of 54 form 3 students separated into three groups. Two groups were responsible for learning vocabulary using Quizlet and podcast respectively, while the third group used the traditional method to learn vocabulary. The data collection involved evaluating vocabulary proficiency before and after the intervention through the utilization of Quizlet and podcasts. The findings indicate that while Quizlet and Podcasts contributed to vocabulary learning, traditional methods significantly impacted vocabulary acquisition ($p= 0.005$), as students demonstrated remarkable enhancements in their ability to remember and understand unfamiliar concepts. The study highlights the importance of technology in language learning, suggesting that digital tools might improve student independence, motivation, and involvement. However, it is crucial to acknowledge the constraints of this study, including the limited number of participants and the challenges in extrapolating the results to different educational environments. Hence, further investigation is needed to examine these matters across a broader spectrum of educational settings. The results of this study have significant ramifications for instructors seeking efficient strategies to enhance language instruction.

Keyword(s): *Vocabulary acquisition, Quizlet, podcasts, digital tools, lower secondary education.*

INTRODUCTION

Nurdiansyah et al. (2019) and Kim et al. (2021) have noted that young students need to accumulate vocabulary knowledge to achieve language development. The students also ought to be involved in immersion and direct instruction, including pre-teaching activities and talk instruction by the teachers that makes overall learning more successful. Unfortunately, obtaining academic success, according to the authors, presupposes understanding of academic language,

therefore, vocabulary development should be supported by teachers. According to researchers, applying technology means attention and participation, getting sources and even individual help; examples are Quizlet or podcasts rather than traditional. However, only a few investigations exist on their efficacy in the learning of second-alphabet words. This study aims at establishing the effects of these tools on the vocabulary and linguistic performance of secondary school students in English classes particularly during their learning interactions.

As practitioners have suggested, the skill of acquiring vocabulary as pointed out by researchers entails the understanding of language issues and engagement in activities such as observing and editing. Paralinguistic vocabulary is used when expressing oneself in speaking and writing is necessary. ICT policy for 21st-century classroom serves to support the learner by offering accurate information as well as promoting partnerships with native speakers. Apps modify the content of vocabulary along with providing facilities like text translation and multimedia images in Quizlet to help students process ideas and podcasts that offer linguistic knowledge and ideas. These tools help the learners in vocabulary learning but motivational and instructional strategy deficiencies remain a major drawback. According to Sulaiman et al. (2017), curriculum modernization does not correlate with the improvements of the teaching techniques since outdated techniques are still in practice.

According to current online tools and CALL mentioned by Bueno Alastuey (2020), vocabulary learning and motivation improvement is rather positive. There is little prior research available on the results of using Quizlet and podcasts in teaching and learning, and that is why this study compares its relevance for secondary students. Here are the research questions that shall guide this study: (i) which of the two tools, the Quizlet and Podcast, is more effective for students in lower secondary level in the acquisition of vocabulary, and (ii) which tool is preferred by the students? (iii) The perception of students in the use of the two tools in the acquisition of vocabulary. Therefore, the purpose of this study is to, first, establish the current student preference; second, help teachers and learners to enhance vocabulary instruction.

LITERATURE REVIEW

Technology-Assisted Language Learning

In the language teaching particular studies has indicated that technology has enhanced the learning of the vocabulary since it engages most student and makes them to achieve most. Digital platforms establish interesting contexts that contribute to the improvement of the retention of vocabulary since the students interact with the material in an interesting way. According to Al-Malki (2020), with using tools like Quizlet, facilitates a better understanding of words beyond the conventional; students find sense making with points and levels, which promotes language vocabulary a lot. Practical interaction with such content is said to help when it comes to remembering information. However, investigations into the differences between different tools within the same educational setting are somewhat scarce, although using podcasts and Quizlet is still under investigation. This gap is important in the analysis of the combined effect of these methods that will enable teachers to identify the best strategy for vocabulary learning.

The Role of Quizlet and Podcasts in Vocabulary Acquisition

Language learners are drawn to Quizlet because it features learning aids such as flashcards and games that promote use of active recall and spaced repetition — practices proven to strengthen the memory. According to Václavík (2020), these aspects enhance the brain connection to more

extended vocabulary storage. The flashcards feature of Quizlet gives the learners an option to create flashcards according to their curriculum or pick ready-made sets to study, Vaccálki observed that this makes it more versatile.

However, little research exists to help teachers decide how effective Quizlet is compared to other related technologies for secondary education. In this research, I explore how Quizlet and podcasts can be used to support vocabulary learning and the correction of pronunciation among junior high school learners.

According to Indahsari (2020), podcasts provide materials obtainable in auditory learning and help students listen to natural, fluent speech, language proficiency and comprehension of real-life materials. In contrast to the other tools, podcasts involve different types of media availability which can teach different types of learners, including the auditory, the kinesthetic, and the visual learners. Because both Quizlet and podcasts provide useful variation in learning support for planning language acquisition, more studies comparing their efficacy could help elaborate different approaches to support vocabulary gain.

Comparative Analysis of Digital Tools

Quizlet and podcast research has surfaced but has failed to evaluate how they affect vocabulary learning. Researchers can combine tools to enhance language learning through this gap. Instructors need to grasp how well Quizlet and podcasts work to find optimal vocabulary training strategies. Each instrument has advantages: With podcasts' focused listening format users receive language input alongside context while Quizlet enhances retention with engaging interactions. By directly assessing tools educators can identify the best combination for improving vocabulary memory.

Obtaining feedback from students regarding these tools helps to uncover their interest and inspiration. Research indicates that how students perceive learning tools influences their learning results. If a tool is enjoyable for students, they are more prone to utilise it properly and see enhanced learning results. This study analyses the effectiveness of Quizlet and podcasts and gathers information on students' preferences. This combined method will clarify the impact of these tools on language acquisition.

The Importance of Student Engagement and Motivation

A study on Quizlet states that the approach used by Quizlet of games enhances student motivation due to competition as well as achievement point system and levels. It helps to spend time for an interesting study and to reinforce the information, which is actively used for retention in further studies, as Aziz et al., (2019) notes. Through the study they found out that more than seventy-five percent of their students value these forms of evaluations in early literacy underscore the value of games as an assessment tool.

Nurisma et al. (2021) state that teaching through podcasts enhance educational engagement as well as interest in language and culture as genuine listening involves demonstrations by native speakers which makes vocabulary come to learning terms in real live context. For those students who are apt learners of the auditory kind, podcasts are useful to provide real-life practice of language use and tie learning with Students' Interest. The purpose of this research is to evaluate the melioration of vocabulary instruction through Quizlet and student perceptions of podcasts. Teachers can use student responses for choosing and adapting beneficial learning resources and facilitate the integration of Quizlet and podcasts as ways to address the preferences of various learning types.

METHODOLOGY

The methodology section of this research article provides a detailed description of the research design, data collection techniques, characteristics of the sample, and steps taken to assure the study's validity and reliability.

Research Design

This study used a mixed method design, i.e. the quasi-experimental design (quantitative) with qualitative focus group discussions to assess the extent that which Quizlet and podcasts outperform traditional teaching methods in improving vocabulary acquisition. Fifty-four Form 3 students (aged 12 to 15) from SMJK ShanTao were assigned to three groups: Group 1 (Podcast intervention) - Experimental Group included 18 students, Group 2 (Quizlet intervention) - Experimental Group included 18 students, and Control Group (traditional teaching) with 18 students. This grouping ensures ecological validity; i.e., it avoids random assignment and allows making comparisons in a naturalistic classroom context. Pre and post-intervention standardised vocabulary testing was used to measure vocabulary acquisition, while focus group discussions on students' perceptions of the tools were used as qualitative approaches. This mixed method approach provides a rich view of how digital and traditional teaching methods are differentially affecting vocabulary learning.

Qualitative data includes student conversations in focus groups from each group. These conversations want to gain insights into how students perceive learning tools. Quantitative results helped to gain clarity by examining how students perceive benefits and challenges from these tools. This will reveal the effects these tools have on vocabulary acquisition. This two-sided strategy realises that grades and students' feelings and enthusiasm determine educational impact.

Sample

The study sample consists of secondary school form 3 students who are currently attending Sekolah Menengah Kebangsaan Shan Tao in Sabah, Malaysia, studying English in their English language studies. Through this study, we are aiming for them to improve to the B2 level. 54 students who have the same (homogeneous) level of language fluency were purposively sampled so that each one was selected with the intention of being different from the others. The criteria of selection include students enrolled in upper intermediate level English teaching. Three student groups receive instruction through distinct methodologies: Some group uses Quizlet as another way to learn, while others use podcasts. Additionally, 18 pupils are given instruction with conventional methods in a control group. Intact courses are selected in order to minimise any confounding variables and to allow any discrepancies in student involvement and vocabulary acquisition to be unlinked to differences in student backgrounds.

Group	Podcast	Quizlet	Control Group	Total
Number of Students	18	18	18	54

Research Procedure

Experimental Group 1 (Podcast Intervention):	Experimental Group 2 (Quizlet Intervention):	Control Group (Traditional Teaching Methods):
<ul style="list-style-type: none">• Participants listen to designated podcast episodes.• Podcasts are chosen for their popularity, versatility, and dynamic auditory learning potential.• The goal is to enhance vocabulary through auditory exposure and engagement.	<ul style="list-style-type: none">• Participants use Quizlet and contains the same vocabulary found in Podcast audio, an online learning platform with interactive flashcards.• The focus is on active recall and word retention through customizable and gamified learning features.• The aim is to provide an engaging and effective vocabulary learning experience.	<ul style="list-style-type: none">• Participants receive standard in-person teaching, using textbooks and other instructional tools to teach the same vocabulary.• This group serves as a benchmark for comparing the effects of the experimental interventions.

Table 1: Three student groups receive instruction through distinct methodologies

The study's methodology guarantees that any noted disparities in vocabulary acquisition may be ascribed to the utilization of Quizlet and podcasts rather than any other unrelated factors. The study establishes a baseline for measuring the effectiveness of the digital tools by having a control group that receives traditional teaching. This comparison will assess whether the interactive and gamified elements of Quizlet, or the contextual and auditory depth of podcasts, provide notable benefits compared to traditional teaching techniques.

Data Collection Methods

This investigation looks into the role of Quizlet and Podcasts in boosting vocabulary in emerging ESL learners. The study employs terms and active exercises specifically created for kids in that age range. The Vocabulary Levels Test (VLT) measures the vocabulary of learners. The five VLT sections include 30 items apiece showcasing different levels of vocabulary, by making six words connect with three definitions keeps the assessment lively and appealing to lower secondary learners. Users remain stimulated and motivated to learn in this structure. To measure vocabulary progress from using Quizlet and Podcast tools before and after class the VLT will be provided both times. Having knowledge of the learners' environment the teacher guided the test for comfort. The investigation applies age-related resources and techniques to boost vocabulary growth and optimise enjoyment in the study for students of lower secondary ESL.

Each group joined in a focus group to explore how Quizlet and podcasts contributed to vocabulary learning. The focus group discussions based on ChatGPT include questions and tasks related to Research Question 3. The protocol was outlined as follows:

Introduction (5 minutes)	Greet the students, explain the purpose of the focus group.
Icebreaker Activity (10 minutes)	Students share positive or challenging experiences related to learning new vocabulary.
Main Discussion (25 minutes)	<ul style="list-style-type: none"> • Introduction to Tools: Brief explanation of Quizlet and Podcasts, inquiry about previous usage. • Discuss usage of Quizlet and Podcasts: Frequency, helpful features, specific examples. • Compare experiences with both tools: Determine preferences and situations where one tool is more effective. • Invite suggestions for improvement: Address challenges faced
Conclusion (5 minutes)	Summarize major points, thank participants, and explain how the information will be used.

Table 2: The focus group discussions based on ChatGPT

By incorporating these structured activities, the study seeks to gather comprehensive insights into the effectiveness of Quizlet and Podcasts, enhancing the understanding of vocabulary acquisition methods and enriching the learning experience for ESL students.

Validity and Reliability

The validity and reliability of the Vocabulary Level Test (VLT) were assessed through various approaches. The validity of the VLT was confirmed by establishing a correlation between its outcomes and the frequency levels of English vocabulary, thereby emphasizing the importance of the terms in language usage (Schmitt, 2019). Two linguistics specialists examined the test items to verify their lucidity and pertinence. Conversely, the dependability of the VLT was evaluated utilizing Cronbach's alpha coefficient. The pre-test and post-test assessments showed strong internal consistency, as indicated by Cronbach's alpha values of 0.92 and 0.94, respectively. These methodologies validate the VLT as a dependable instrument for evaluating students' vocabulary proficiency, guaranteeing precision and uniformity in study results.

Data Analysis Techniques

While the research utilized both quantitative and qualitative data analysis for different reasons. Data quantitatively overarchingly described participants' demographics, scores on the VLT, and feedback on the intervention. The comparison of differences checked whether experimental group outperforms the control group by using paired-sample t-test and identified the size of the intervention by using the Cohen's d.

To answer the second research question concerning understanding of vocabulary and language exposure out of classroom environment, correlational significant test was applied. Exploratory qualitative analysis analysed participants' impressions of Quizlet and podcasts for language growth, and scatter plots were provided. Descriptive statistics, correlational analysis, and inferential statistics involved using the test of significance set at 0.05 throughout the study. Information presented the results of the statistics analyses according to the APA guidelines. In order to make the qualitative input more valuable, transcripts of focus group discussions were reviewed for themes. This qualitative approach was useful in progressing the study where vocabulary acquisition of lower secondary students using Quizlet and podcasts were compared.

FINDINGS & DISCUSSION

This part provides an overview of the data analysis results, explains the significance of the findings in respect to the research questions, and explores their implications in the context of previous literature.

Participants' background

At the study's 54 participants were 15-year-old Form 3 students from SMJK ShanTao in English language B1 proficiency. In the 3rd grade at Berdikari school students achieved the highest overall academic success. We structure our English language curriculum around the comprehensive and organised textbooks called "Close-Up." By using projectors as tools for video and audio sources traditional lessons gain benefits that suit various learning styles while raising student involvement and awareness. A lot of students utilise projectors to find digital resources in combination with the textbooks to cultivate a vibrant experience with English. Learning with various media enhances understanding and memory in language. Current teaching requires ICT tools that make it easier for students to utilise in school.

In classes students utilise applications like YouTube and Kahoot for both learning and entertainment away from school. The platforms present engaging material that aids students in grasping concepts outside of standard practises. Upon encountering the Quizlet and Podcasts study elements students felt confident with the tools and were excited to engage actively seeing how it could help their vocabulary and listening.

Results of Data Analysis

The analysis looked into how Quizlet and Podcasts aided vocabulary learning for lower secondary school students and found which method was more effective. Researchers evaluated if Quizlet or Podcasts raised the average score on vocabulary tests. In the post-test the scores for the Quizlet group rose slightly to 426.61 from 418.89. In the Podcast group's case post-test scoring (437.61) grew to surpass pre-test marks (428.67) and showed lower variability. The scores of the traditional method group increased more across pre-test (354.39) and post-test (379.89), but there was an increase in variation.

Method	Test	Mean Score
Quizlet group	Pre-Test Score	418.89
	Post-Test Score	426.61
Podcast group	Pre-Test Score	428.67
	Post-Test Score	437.61
Traditional group	Pre-Test Score	354.39
	Post-Test Score	379.89

Table 3: Paired Samples Statistics for Pre-test and Post-test Scores

The results of pre- and post-tests on Quizlet were not linked according to research findings. This shows that Quizlet lacked an effect on the development of vocabulary skills. A strong positive relationship appeared in the Podcast group (0.738; $p < 0.001$). No significant vocabulary score changes were noted for Quizlet and Podcast using paired samples t-tests ($p = 0.519$ and $p = 0.321$). The effect sizes for both Quizlet and Podcast came in small ranges with

Cohen's d values of -0.155 and -0.241. The control group achieved a marked boost ($p = 0.005$) with a large effect size (Cohen's $d = -0.752$), suggesting that traditional classroom techniques outperform digital learning platforms.

Method	Mean Difference	Standard Deviation	t-value	p-value (Sig. 2-tailed)	Cohen's d
Quizlet	-7.72	49.80	-0.66	0.519	-0.155
Podcast	-8.94	37.15	-1.02	0.321	-0.241
Traditional	-25.50	33.91	-3.19	0.005	-0.752

Table 4: The results of pre- and post-tests between three groups

Most Effective Tool Between Quizlet and Podcast for Vocabulary Acquisition

In pre- and post-test evaluations the Quizlet and Podcast groups ranked above the Control group. Podcast users achieved an average of 437.61 in their post-test outcomes with Quizlet achieving 426.61 and the Control group making 379.89. Although the Podcast group obtained better results the statistical tests found no meaningful distinction between Quizlet and Podcast ($p > 0.05$). Both methods appeared to elevate vocabulary learning in a comparable way. An ANOVA detected a meaningful variation in outcomes between study groups ($p < 0.05$). Post-hoc analyses showed that both the Quizlet and Podcast groups achieved better scores than the Control group ($p < 0.05$).

Group	Mean	Std. Deviation	Comparison	Mean Difference (I-J)	Sig.	95% Confidence Interval
Quizlet	426.61	50.50	Control vs. Quizlet	-46.72	0.005	[-80.59, -12.85]
Podcast	437.61	41.37	Control vs. Podcast	-57.72	<0.001	[-91.59, -23.85]
Traditional	379.89	32.47	Quizlet vs. Podcast	-11.00	>0.05	Not Significant
Source		Sum of Squares	df	Mean Square	F	Sig.
Between Groups		33814.93	2	16907.46	9.543	< 0.001

Table 5: Most Effective Tool Between Pre-test and Post-test Scores

While Quizlet and Podcasts support vocabulary learning this study revealed that conventional strategies produced more substantial results. Additional analysis on unifying these strategies to improve vocabulary acquisition could benefit further.

Exploring Students' Perceptions of Quizlet and Podcasts in Vocabulary Acquisition

The focus group discussion aimed to explore students' experiences and perspectives on using Quizlet and podcasts for vocabulary development. The session, involving lower secondary school students who had used these tools for five weeks, gathered feedback on their effectiveness, challenges faced, and suggestions for improvement. An intelligent transcription method was used to accurately capture the students' insights. The discussion covered various aspects, including

general vocabulary learning experiences, specific feedback on the tools, and recommendations for enhancements.

i. General Vocabulary Learning Experiences

My study found that flashcards, videos, and reading materials were all effective ways that students to acquire vocabulary. Dual coding theory suggests that visual and verbal integration supports learning and memory and thus these strategies fit well with that particular science. Al-Malki (2020) argues that using media aids, as part of multimodal approaches, improves recollection and comprehension, and our findings confirm this. They also mentioned difficulties in matching the video content with the pace, failing to grasp and memorise new vocabulary without drilling, which speaks to the need for the use of spaced repetition. For further confirmation that spaced intervals between learning sessions promote stronger long-term retention, as the spacing effect suggests, this finding also emerged.

Participant 1: "I like learning new words through reading. When I see a word in context, it's easier to remember. But sometimes, there are too many new words at once, and it can be overwhelming."

Participant 2: "I enjoy watching videos in English, like on YouTube. It's fun and I get to hear how words are used in real life. My challenge is that sometimes the speakers talk too fast, and I can't catch all the words."

ii. Usage and Features of Quizlet and Podcasts

As shown from my study, students experienced different things when using podcasts vs. Quizlet. Quizlet's flashcards and matching quizzes (active recall and spaced repetition) are most effective, according to most students. This agrees with Václavík's (2020) conclusion that active recall and spaced repetition strengthen neural connections for long term memory. Quizlet games make use of students' natural proclivity for play, and even generate a bit of friendly competition among them.

Listeners of podcasts described using the tool about once or twice a week to bring to mind contextual insights from stories as conversations. This is a situated learning theory approach that advocates learning within context. Yet, students reported that podcasts enhanced both vocabulary acquisition and comprehension, but not enough structured listening practice where new words were tucked away into a working memory. These results imply that the use of podcasts to provide contextual learning is useful, but additional practice is needed to lock in vocabulary retention and spoken language improvement.

Participant 3: "I used Quizlet frequently, almost every day. The repetition and the tests on Quizlet really helped me remember the words. I also liked that I could track my progress."

Participant 4: "Teacher! I listen to Podcasts sometimes for fun, but I hadn't used them specifically for learning vocabulary before."

iii. Effectiveness and Preferences

Quizlet proved to be a favourite among students as a relief from difficult language that is also very effective in helping prepare for tests, which has been shown in my study. Regarding its quantification, students found Quizlet's structured and repetitive activities quantified to mimic the techniques that have been shown to boost memory, such as retrieval practice, where activating

one's existing knowledge to remember information. This is also in line with what Indahsari (2020) and Nurisma et al. (2021) found that structured review methods support procedural memory, so more automatic recall of vocabulary over time. Students also showed appreciation for the qualitative role of podcasts in developing listening skills and vocabulary while being more difficult. The research evidence supports these responses, and results show that authentic materials, such as podcasts, include real-world examples of vocabulary use, which helps with comprehension and retention of new words. Additionally, podcasts help listening proficiency by giving learners exposure to different accents and natural speaking paces that are needed for adapt to real conversations.

Participant 5: "I used Quizlet about three times a week. The flashcards and the matching games were really helpful. For example, I learned a lot of new adjectives and could recall them easily during the tests."

Participant 6: "I liked Podcasts for listening practice and understanding words in context, but for quick memorization, Quizlet was better."

iiii. Challenges and Suggestions for Improvement

As part of my study, students have suggested adding additional interaction elements to Quizlet, like videos and animations. This recommends the multimedia principle which states that the use of multiple sensory inputs can greatly increase learning effectiveness. Students also suggested use of custom word sets in correspondence to certain lessons to add relevance and contextual significance that can aid retention and utility.

Students suggested that transcripts to aid hearing for podcasts was a good idea, which aligns with Kim's (2020) claim that transcripts support listening activities. As they enable students to follow spoken content more closely, transcripts are being seen as remarkable scaffolding tools. Additionally, students suggested a list of podcasts specially crafted to each subject in order to provide content both in the appropriate level and linked to students' language proficiency. Such an approach is consistent with more recent research contending for the value of sustained engagement, capturing and retaining motivation while encouraging constant improvement in listening and comprehension skills.

Participant 7: "For Podcasts, having a transcript available would be great. For me, it was challenging to catch every word, and a transcript would help with that."

Participant 8: "It would be helpful if Quizlet had more interactive elements, like videos or animations, to make learning more engaging. Participant 9: "Sometimes the vocabulary on Quizlet wasn't relevant to what we were studying. It would be better if we could customize it more to our specific lessons."

Limitations of the Study

This research revealed interesting insights about how well Quizlet and podcasts work; however, it had several drawbacks. The study's limited sample could restrict its use to a larger group. Observations might become more trustworthy and reliable with a bigger sample of participants. Only one school contributed to the sample size and it could not reflect outcomes for students in lower secondary settings. Varying strategies in education and pupil attributes can reshape results. The limited time period of the study probably did not permit a complete analysis of the effects of Quizlet and podcasts on vocabulary retention and learning. Studying these methods repeatedly could reveal their future effects.

Data from focus group interviews depended on students sharing their experiences and views. Student characteristics and upbringing likely influence the effectiveness of vocabulary learning along with study reliability.

Implications of Findings

The study underlines the potential of podcasts and Quizlet in supplementary focused vocabulary learning for lower secondary students and encourages language education leaders, curriculum developers and instructors to include these forms of media. Thereby inferring that when harnessed optimally, technology could enhance the student's engagement and even their interactivity particularly of the diversity. Thus, the study calls for the integration of face-to-face teaching with other access to the computerised materials, which promote independent, individual learning. According to the analysis, practicum intervention training programs should be provided to facilitate the competencies for using Quizlet and podcasts incorporated into practice.

To curriculum developers the study has a suggestion of using technology in teaching modern learners regarding terminology which can be applied in virtual learning. They lay down a foundation for subsequent studies with an emphasis on the effects of podcasts and Quizlet on the learning of vocabulary and its retention over time in diverse learners. These insights should guide educational technologies, to blend conventional learning with e-learning for enhanced learner performance and faculty improvement in delivery techniques.

RECOMMENDATIONS FOR FUTURE RESEARCH

It is therefore recommended that future research explore technology led development of additional lists of vocabulary comprehensiveness. Studying the learning curves of the students, researchers should look at the residual effects of Quizlet and podcasts in vocabulary retention. All the more, research studies with broader samples of participants are essential to generalise these findings. Podcasts and Quizlet lessons can help explain how cultural and environmental aspects are linked to developing vocabulary. Educationalists and linguist should work to further develop these and related tools for improving teaching of words and language competencies oral and written.

More studies should be done about how student characteristics, such as age or family background, could affect the usage of these instruments and how they might be tailored to suit the students. Educator perceptions of Quizlet and podcasts can inform the direction of ed-tech design and teacher professional learning. Studying how implemented gamification elements in these sites can engage a learner might also enhance learning resources. Last but not the least, introducing the use of technology in teaching learning independent may promote development of the vocabulary among languages learners.

CONCLUSION

The study indicated that lower secondary school students gain better vocabulary from Quizlet and podcasts. The research indicates that digital assets boost vocabulary recall and increase the interactivity and excitement associated with education beyond standard approaches. The results from statistical analysis demonstrated that students leveraging these resources scored higher on the end test proving their efficiency in language learning. The current dialogue surrounding creative language teaching adds relevance to this research. The research supports active and engaging learning by focusing on the limitations of memorising without context and passive

instruction. Innovative technology in vocabulary instruction satisfies contemporary educational demands and supports different learning approaches. At this time of high importance on digital literacy and student familiarity with interactive content this is crucial. The results of this study influence space beyond the classroom. According to educators and policymakers learning materials must include Quizlet and podcasts in language education. These resources connect conventional and contemporary teaching styles to foster an interactive learning atmosphere that enhances educational results.

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THE EFFECTS OF USING DIGITAL VOCABULARY JOURNAL IN MUET WRITING PERFORMANCE AMONG PRE-UNIVERSITY STUDENTS: AN ACTION RESEARCH

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Abstract

In learning English as a second language, the importance of vocabulary competency has long been recognized for its significance. An area where vocabulary knowledge has demonstrated significant promise is in the realm of writing as the breadth and depth of students' vocabulary are reflected in the general quality of their writing. Hence, the introduction of vocabulary journal is essential as it has been used to create interactive and immersive learning experiences that help learners acquire and retain new words more effectively. This classroom-based action research investigated the impacts of keeping digital vocabulary journal towards writing performance of ten pre-university students in a pre-university center in Sabah. It sought to find out whether there is any difference in the students' writing scores prior to and after keeping vocabulary journal as well as to assess the students' attitudes toward maintaining a digital vocabulary journal. This action research used a mixed-method approach. Pre-test and post-test writing scores comprised the study's quantitative component, while the qualitative approach used semi-structured interviews and product analysis. The results indicated significant difference with large effect size and positive students' attitudes towards digital vocabulary journal. As a result, the assertions regarding the advantages of digital vocabulary journals were empirically supported by this action research study. By engaging in this type of research, teachers can gain valuable insights into how to optimize their use of digital vocabulary journal in the classroom, and ultimately improve the effectiveness of their teaching practice.

Keyword(s): *action research, digital vocabulary journal, writing performance, MUET, pre-university students*

INTRODUCTION

Vocabulary acquisition is a crucial factor for academic excellence and societal achievement (Santillan & Daenos, 2020; Jambari et al., 2021). Without a sufficient vocabulary, comprehension of written materials and precise expression of their thoughts and ideas may fail (Javed & Ghani, 2019). The breadth and depth of one's vocabulary immediately affect their writing descriptiveness, accuracy and general quality (Nor et al., 2019). Susanto (2017) and Aisyah (2017) concur that vocabulary acquisition is crucial to learning a second language. The way that new words are processed also affects how well they are remembered; more in-depth and sophisticated processing yields higher word retention. However, vocabulary learning can be a

daunting task for language students, especially when they have to learn this through the four skills (Nation, 2011). Memorizing long lists of words can be boring and frustrating, and students may find it challenging to remember what they have learned (Chong & Kee, 2019).

In the context of this action research, at the beginning of every academic year, prior to actual classroom teaching and learning activities, a debriefing session is held to discuss the strengths and weaknesses of previous teaching and learning activities and areas for further development of those activities. At the session conducted with pre-university students at the beginning of 2024, those who experience difficulties in their writing regarded vocabulary as their main obstacle. One major issue brought forward by the students was the limited exposure to the language of instruction, which makes it difficult for them to understand the nuances of the language, hinder their ability to learn new vocabulary and negatively affect their writing. The hesitancy to employ new vocabulary in their writing is mainly due to their fear of making mistakes or sounding unnatural. Besides, students also reported that they often struggle to understand how words are used in context when they are presented with words in isolation. Some students highlighted the part where they tried to memorize newly learned words without fully understand its meaning, which lead to further confusion and incorrect usage. Moreover, students' lack of motivation to learn new words is mainly due to their inability to recall and retain the words.

Reflecting on ways to improve instructional practices in teaching vocabulary resulted in the realization that although the improvement in their vocabulary knowledge is parallel with the enhancement in students' writing abilities, there is no assurance that this will occur automatically. The nature of vocabulary learning itself complicates the learning process. There is no set of rules governing vocabulary formation and acquisition, in contrast to syntax, phonology, and grammar. (Alqahtani, 2015). Therefore, the vocabulary mastery relies on students' own motivation and interest on the words.

However, in a class of diverse learning abilities and varying levels of English proficiency, conventional ways of teaching vocabulary such as memorizing long list of words or relying on their bilingual dictionary, might not result in satisfying educational gains. The intervention method ought to be able to provide sufficient repetition and reinforcement of the new words to assist the students to retain the new information, thus, the researcher resorted to vocabulary journal. Several benefits ascribed to the use of vocabulary journal include increase in students' awareness of the vocabulary acquisition (Chong & Kee, 2019; Lai, 2019), convenient revisitation and review (Lewis, 2000; Pinter, 2006), and growth in self-assurance, participation and proficiency that helps to promote students' autonomy (Fowle, 2002; Nation, 1990).

Although there are myriad techniques related to the teaching of vocabulary, the main concern of this action research is to ensure successful comprehension and memorization of the new words. Coupled with the insightful feedback derived from the debriefing session with the pre-university students, one effective solution to their predicament is through vocabulary journalling. This is a technique in which students keep track of their newly learned vocabulary by listing the word, its definition, example sentence and sometimes a picture or other mnemonic devices. Consequently, this action research sought to investigate the impacts of keeping digital vocabulary journals towards the writing performance of pre-university students in Sabah. These research questions guided the implementation of the action research.

RQ1: To what extent does keeping vocabulary journal improve students' writing scores?

RQ2: What are students' attitudes towards keeping vocabulary journal?

LITERATURE REVIEW

Definition and Concepts of Vocabulary Learning

Vocabulary is defined by Alfaki (2015) and Alqahtani (2015) as the words either individual or phrase, that are used to express ideas and communicate intended meanings. Wilkins (1972) highlighted the value of vocabulary when he advocated that vocabulary is the catalyst to communication because nothing can be communicated without vocabulary. Similarly, Afzar (2019) pointed out that meaningful communication in a second language is difficult without words that can convey a wide variety of meanings

A substantial body of research indicates that vocabulary provides the foundation for understanding all aspects of the English language, including speaking, writing, reading, and listening (Aisyah, 2017; Lestariningsih, 2008; Iriyana, 2007). Insufficient vocabulary competence can hinder language mastery (Nor et al., 2019; Marlina & Nurdini, 2017). Furthermore, Arikan and Alemdari (2012) emphasized that understanding spelling, pronunciation, word category, antonyms, synonyms, contextual usage, connotative and denotative meanings, and register are all components of comprehensive vocabulary knowledge.

Four major guidelines for teaching vocabulary were presented by Blachowicz and Fisher (2000). This first principle emphasizes the importance of word categorisation using semantic mapping, morphological and contextual signals. The second principle allows customisation of their vocabulary acquisition by selecting words to study and use mnemonic devices to help them remember new meanings. Immersion in a word-rich environment through reading or listening (Benati, 2020) is the third principle of vocabulary instruction. The last principle highlights language acquisition through repeated exposure. Definitional explanations coupled with writing (Duin & Graves, 1987), contextualization (Rapaport, 2003), or deep engagement with words (Beck & McKeown, 1983) are among the effective measure for vocabulary retention.

Vocabulary Journal and Its Effects on Writing

Previous research investigated the relationship between second language learners' writing performance and vocabulary knowledge resulted in favorable reaction to writing proficiency (Nor et al., 2019). The more vocabulary knowledge the students have, the more effectively they can express themselves in writing. Although a stronger vocabulary can improve students' writing skills, this improvement is not guaranteed to occur automatically.

Corona et al. (1998) posit that vocabulary enhancement positively impacts writing skills only when the learning environment supports the development of writing. Several strategies can foster a writing-focused classroom environment. One approach is to share vocabulary-rich literature. Sloane (1996) describes how she selected books that serve as excellent models of writing to help her students become better writers. Teachers can introduce new words and encourage discussion by assigning students to read books, poems, and stories.

Another strategy for leveraging vocabulary to enhance writing involves encouraging students to search for and become mindful of interesting words. This can be accomplished in various ways. Students could, for instance, collaborate in pairs to identify appealing words in novels and compile a list of potential replacements. Additional strategies include having students display words they discover on an "Interesting Word Wall" (Sloane, 1996, p. 268); build a word bank by introducing "word-of-the-day" terms drawn from class readings (Corona et al., 1998, p. 25); act out dynamic verbs; or document unfamiliar words in "literature-response journals" for further exploration (Manning, 1999, p. 3).

According to research, students can improve their awareness of vocabulary learning by keeping a vocabulary journal (Chong & Kee, 2019; Lai, 2019). Students who maintain a vocabulary journal are required to record new terms along with definitions and any pertinent information, including synonyms, antonyms, collocations, and example sentences. According to Chong and Kee (2019), a vocabulary journal can be a useful tool for vocabulary acquisition because it is accessible to all students and does not rely heavily on expensive resources or high-tech equipment (McCrostie, 2007). However, students require additional support and instruction when starting their own vocabulary journals. As a result, maintaining a vocabulary notebook triggers a complex thought process.

Vocabulary journals can take various forms; notebooks, or leaflets (Turnuk, 2017). Participants of this action research were required to keep digital notebooks as their vocabulary journals. At the end of the intervention, their journal can serve as language glossary for their own reference. Furthermore, the participants had all the freedom to choose the types of words to be entered into their vocabulary journal. The pace of obtaining vocabulary knowledge was set by the teacher by making it compulsory for the participants to keep at least 100 words a month in their vocabulary journal.

The primary justification for resorting to vocabulary journaling is that it requires students to write down unknown terms along with their definitions and any pertinent information, including synonyms, antonyms, collocations, and sample sentences. This cognitive activity raises their awareness of vocabulary acquisition by triggering a complex mental process that occurs during word recording (Chong & Kee, 2019; Lai, 2019).

Additionally, vocabulary journal is an accessible tool to all students (Chong & Kee, 2019) and is not too dependent on high technology or expensive resources (McCrostie, 2007). Consequently, it enables students to revisit each word and make full use of the new words they have just learned (Lewis, 2000). Fisher et al. (2019) suggested that while students can rapidly learn new vocabulary, they often struggle with long-term retention. However, by allowing students to revisit the content at any moment, digital vocabulary journals can help to mitigate this issue. Hence, keeping digital vocabulary journal seems to be an effective intervention as it helps students not only to retain and recall previously learned words but also enhances their ability to use those new words in their writing.

METHODOLOGY

This study utilised Kemmis and McTaggart's (1982) cyclical model of action research - plan, act, observe, and reflect – to investigate the impacts of keeping digital vocabulary journal towards pre-university students' MUET writing performance. This action research employed purposive sampling method. In the preliminary vocabulary test, a total of 32 students in that pre-university class took the test. Out of these 32 students, ten students were selected to participate in this action research. There were only three female students among these ten students. All of them came from non-English speaking background and were of intermediate language proficiency level. They were informed that this vocabulary journaling is a program conducted by the researcher who is also their subject teacher to help them with their vocabulary mastery and writing performance.

Research Implementation - Problem Review and Problem Review Analysis

Table 1: Problem Review

Date	Target Group	Purpose	Instrument
21 May 2024	32 students	To determine the participants' vocabulary size	Vocabulary Test (30 marks)
23 May 2024	10 students	To assess the participants' writing scores	Pre-test (60 marks)

Table 2: Problem Review Analysis

Date	Action	Analysis
21 May 2024	Vocabulary Test (30 marks)	10 students were unable to answer the MCQs correctly. They obtained below 15 marks for this test.
23 May 2024	Pre-test (60 marks)	10 students were unable to obtain good scores in their writing paper. Out of 60 full marks, their scores fall in between 27 and 32 marks.

Actions Taken- Implementation Plan

Preliminary evaluation in the form of vocabulary test (Appendix A) and CEFR writing pre-test were conducted at the end of May 2024. Ten students who were unable to do well in both tests were selected to be participants in this action research.

The implementation stage began after both tests (preliminary vocabulary test and CEFR writing pre-test), within a duration of three months (June to August). A short briefing session on expectations and vocabulary learning strategies were shared with the participants. They are allowed to choose the types of words to be entered into their vocabulary journal. However, the pace was set by making it compulsory for the participants to keep at least 100 words a month for a duration of three months, totaling to 300 words at the end of August.

Table 3: Implementation Plan

May	Vocabulary Journal			Sept
	June	July	August	
• Vocabulary Test • Writing Pre-test	100 words	100 words	100 words	• Writing Post-Test • Self-reported Survey

The post-test writing scores were obtained after the three-month intervention period, hence was conducted in September. Effect size was used to analyze the difference in the writing scores between the results of pre-test and post-test. Besides post-test, the researcher also used semi-structured interview to elicit participants' perceptions on their attitudes and outcomes of the program. This method was employed to obtain firsthand and more in-depth information from the participants. As the semi-structured interviews (Appendix B) are open-ended, participants can freely express their views in their own terms, thus providing rich, detailed responses that can provide insights into their experiences and perspectives.

FINDINGS & DISCUSSION

Writing Scores – Pre-test and Post-test

The table below presents pre-test and post-test writing scores, standard deviation, and effect size of both writing scores.

Table 4: Effect Size of Pre-test and Post-test Writing Scores

	Scores (60 marks)		
Students	Pre-test Scores	Post-test Scores	Differences
1	29	33	4
2	30	32	2
3	31	34	3
4	31	35	4
5	30	34	4
6	32	36	4
7	30	33	3
8	27	31	4
9	29	32	3
10	28	32	5
Mean	29.7	33.2	3.5
SD	1.49	1.54	-
Pooled SD	1.52		-
ES	2.31		Large

The mean of the all the pre-test writing scores were compared against the mean of the post-test writing scores. Both means were utilized to calculate the effect size of the difference in the writing scores between pre-test and post-test via the formula:

$$\text{Effect Size (ES)} = \frac{\text{Mean of the post-test scores} - \text{Mean of the pre-test scores}}{\text{Pooled standard deviation}}$$

Effect size measures the strength of the relationship between variables. Cohen suggested that $d = 0.2$ be considered a “small” effect size, 0.5 represents a “medium” effect size and 0.8 a “large” effect size. In another words, a large effect size means that the finding has practical significance, while a small effect size indicates limited practical applications. As indicated in Table 4, with Cohen’s d of 2.31, the finding indicated practical significance after the intervention of Digital Vocabulary Journal.

Product Analysis

Apart from pre-test and post-test writing scores, product analysis was conducted. This analysis was conducted three times throughout the three-month program. Participants’ vocabulary journals were collected at the end of June, July and August for monitoring and checking purposes. Some samples of participants’ vocabulary journals are as below:

Figure 1.1 Sample of Digital Vocabulary Journals

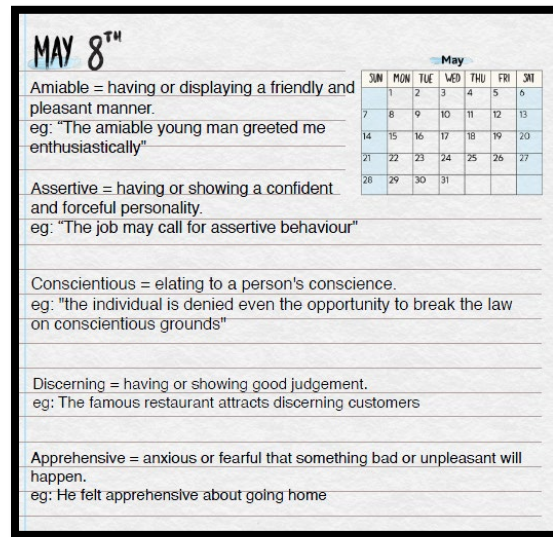
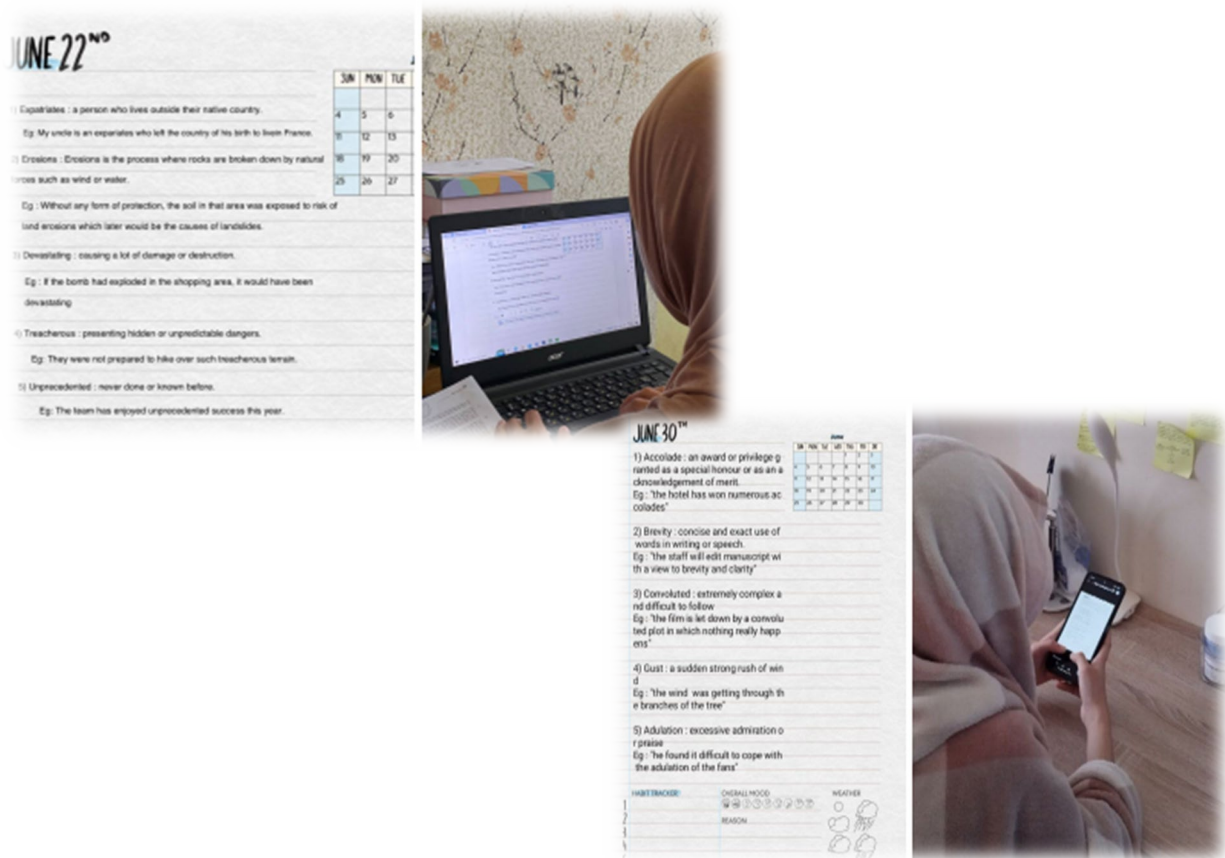


Figure 1.2 Participants' Keeping Digital Vocabulary Journals



The checking indicated that at the end of June, 90% of the participants managed to enter at least 100 words into their journal. However, there was one participant who only managed to reach up to 85 words. July and August saw very satisfying results with all the participants managed to have at least 200 words in July and 300 words in August in their Vocabulary Journal (Table 5).

Table 5: Product Analysis (June to August)

	June	July	August
Students Reaching Targeted Number of Words	9	10	10
Students Unable to Reach the Target	1	0	0
Students Exceeded the Targeted	2	3	3

The product analysis also found out that three participants exceeded the required number of words needed each month. There was also an increase in the number of participants within those three months. In June, 20% of the participants exceeded 100 words. An additional participant joined this group in July and all the three of them exceeded the required number of words in August.

When questioned on their reasons for exceeding the required number of words, they reported:

- *I get excited when I know many new words so I keep on looking for more words. [S1]*
- *I feel happy because I learned many new words....so I want to learn more. [S6]*
- *It is exciting to learn new words and I enjoy searching for the words. [S10]*

When cross-checked with their pre-test and post-test writing scores, the researcher found out that these three participants were among the participants who achieved the largest increase in their writing scores, which were an increase of either four or five marks in their post-test writing scores.

Semi-structured Interview

In the attempt to achieve the second research objective, semi-structured interview was another instrument used in this action research. Ten semi-structured questions (Appendix B) were used to invite the participants to provide answers in their own words, thus providing qualitative data for this study. Although these questions are more difficult to analyze, they can produce more in-depth responses, and the researcher was told by the participants what was in their mind and not being restricted by rating scales or categories.

Table 6: Students' Attitudes towards Keeping Vocabulary Journal

Self-Reported Survey	
Positive Attitudes	Negative Attitudes
8 participants (80%) - Like the vocabulary journal - Happy with vocabulary journal - Very good idea - Encouraging idea	2 participants (20%) - Tedious task for them - Stressful to keep 100 words per month in the journal - Lazy to do the journal

Based on the semi-structured interviews, eight participants reported having positive attitudes towards keeping a vocabulary journal. They reported that they like keeping a vocabulary

journal and were happy with it. They also reported that vocabulary journal is a very good and encouraging idea. When questioned about the reasons behind the positive attitudes, all eight of them reported that keeping vocabulary journal enables them to learn new words. Six participants reported that the program improves their writing whereas another seven of them mentioned that the program improves their English.

When the participants were questioned on how this program helped to improve their writing performance and English, they reported that:

- *I can use the new words that I learned in my essays. [S4]*
- *I found many new adjectives...so I used them in my essays to describe something...or someone. [S5]*
- *I feel that the words in my essays now are better words...and I have so many words now...of course I want to show off a bit when I write. [S7]*

In Table 6, two participants showed negative comments towards keeping vocabulary journal. According to them, keeping a vocabulary journal was a very tedious task as it is stressful to keep 100 words per month in the journal. When further questioned on this aspect, their responses were:

- *100 words are too many. I need to do homework on Monday to Friday...can only do this on Saturday...Sunday I want to rest [S2].*
- *I like this vocabulary journal actually...but I have many things to do. I cannot focus on other things because I keep on doing this [S9].*

They also reported that they were unable to memorize or use all the words they keep in the vocabulary journal. According to them:

- *I cannot remember all the words. Until now, I have more than 100 words in the journal, but I still don't know how to use all of them [S2].*
- *I just write the meanings but I don't really understand them...so cannot use [S9].*

Discussion of the Findings

The study emphasizes the importance of vocabulary mastery and its impacts on writing performance. The pre-test and post-test writing scores revealed that there was a significant increase in the students' writing performance after the intervention of vocabulary journal. It is intriguing to learn that students' writing abilities can be improved by having a larger vocabulary. However, it should be noted that automation of this transformation is not guaranteed. Therefore, teachers must create a conducive writing environment for the students in order to ensure improvement in writing skills (Deane, 2022).

Another research objective of this action research is to find out how students feel about keeping digital vocabulary journals. The findings revealed that although they considered the time and effort needed in keeping digital vocabulary diary to be difficult, the results showed good sentiments regarding the value of vocabulary journal. Additionally, students seemed to take pleasure in utilizing the digital vocabulary journal during class activities.

Therefore, the strengths of this intervention lie mainly in students' positive attitudes towards keeping vocabulary journal. As they perceived this task as positive, they were more intrinsically motivated to learn new words, be more competent in the language and be more confident in using it. The positive sentiments shown in this study mirrored the opinions of Thompson and von Gillern (2020) as well as Mahdavy (2021). One could also argue that the students gained an appreciation for and useful training in the application of an efficient vocabulary acquisition method. This is a good feature that could influence language learning generally, especially when combined with the favourable sentiments regarding the vocabulary journal.

The data analyses also identified some detrimental effects of keeping vocabulary journal. The most prominent adverse consequence is the inability to sustain their interest to keep vocabulary journal. This

could probably be due to the reason that the task was tedious and burdening for low proficiency students. However, this detrimental effect can be mitigated with the aid of the four vocabulary teaching concepts proposed by Blachowicz and Fisher (2000). This is because the researcher had observed that students are more inclined to devote their time and energy to learning vocabulary at their own pace when they are actively creating their own understanding of the words, are aware of how to learn them, and can customize their word learning experience. Hence, teachers should make sure that all students have access to the immersion in word-rich environment. This ensures that students are given constant exposure from multiple information sources.

Another weakness of keeping vocabulary journal that has been identified was the inability of the students to recall the new words they have learned. This is also put forth by Pinter (2006) who stated that many students learn quickly but also forget quickly. This point was also being discussed in Uzun's (2013) study on vocabulary learning and retention. The results revealed that additional information about unfamiliar terms and frequent teacher feedback had favourable effects on vocabulary acquisition.

Suggestions for Future Research

As this action research only dwelt ten pre-university students in a pre-university center in Sabah, it is envisaged that the second cycle or future research can include more students from other classes. Larger sampling in future studies can cater for context generalization. Further and larger scale study might provide more comprehensive results. Another possible improvement to this study is the number of targeted words. In this cycle, as the students were given the freedom to choose the types of words that they wanted to learn, perhaps, in the next cycle, students can also have the autonomy to determine the number of words they prefer to learn in a month. Close monitoring, however, is necessary in order to ensure students achieve the minimum required number of words per month.

CONCLUSION

Conclusively, vocabulary journals have been advocated for many years, yet their benefits have been largely descriptive or speculative. This action research has demonstrated empirical support for those claims on the benefits of vocabulary journals in terms of vocabulary acquisition. Furthermore, students have exhibited positive attitudes not only towards vocabulary journals themselves, but also towards their inclusion into activities in the language classroom, nurturing the students to become autonomous learners and helping them develop other skills as well.

As keeping a vocabulary journal has positive effects towards students, it is therefore recommended to include this in the language yearly plan or school-based project to be made compulsory for all the students in this school. It is also hoped that this evaluation provides useful insights to all the stakeholders and offers encouragement for future researchers who are interested in researching into vocabulary instruction and learning.

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APPENDICES

APPENDIX A

VOCABULARY TEST

1. One day, I want to climb Mt. Everest. That's a goal I want to ____ .
a) achieve c) respect
b) invent d) acquire
2. Jack ____ did a thing at work today day. He spent most of his time chatting with the secretary.
a) seldom c) rarely
b) hardly d) slightly
3. Weather experts have ____ that next summer will be extremely hot.
a) reflected c) included
b) predicted d) prescribed
4. Lisa is ____ buying a pet but she's not sure what kind to get.
a) recalling c) considering
b) regretting d) counting
5. It is very ____ to shop on the Internet. All you need is a credit card.
a) polite c) convenient
b) enthusiastic d) foolish
6. Diamonds are ____, which is probably one of the reasons they are valuable.
a) broad c) flexible
b) talented d) rare
7. John recently changed his ____ . He used to be an accountant, but now he's a real estate agent.
a) source c) mood
b) profit d) career
8. For a company to succeed, good management is ____ .
a) tough c) essential
b) broad d) affordable
9. I take the stairs in my apartment building because the elevators aren't ____ .
a) behind c) regular
b) honest d) reliable
10. Jean has a red stain on her carpet where she ____ wine.
a) spilled c) acquired
b) blamed d) baked
11. The Louvre is a famous museum in Paris that was designed by Chinese ____ I.M Pei.
a) plumber c) mechanic
b) architect d) interpreter
12. Forest fires can start naturally; for example, when ____ strikes the ground during a storm.
a) thunder c) gasoline
b) rubbish d) lightning
13. There is still some doubt among scientists about the ____ of global warming.
a) review c) cause
b) effort d) flood
14. Tim's job ____ communicating with newspapers and magazines about his company's products.
a) appreciates c) adores
b) regards d) involves
15. After two hours of hard training, the coach felt that his players ____ a break.
a) deserved c) encouraged
b) identified d) wasted

Appendix B

SEMI-STRUCTURED INTERVIEW

1. How do you feel about vocabulary journal?
2. Why do you feel such way? Please elaborate.
3. Do you use monolingual or bilingual dictionaries? Why?
4. How do you look for new words?
5. What are the advantages of keeping vocabulary journal?
6. What are the disadvantages of keeping vocabulary journal?
7. Does vocabulary journal help you to improve your vocabulary knowledge?
8. Are you able to use the words you learned in your essay?
9. Are 100 words a month too much for you to handle? Why? Please elaborate.
10. Will you continue to do this in the future? Why?

EFFECTS OF GAMIFICATION ON ESL STUDENTS' COMMUNICATIVE COMPETENCE AT SMK PEKAN TELIPOK

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ABSTRACT

The present study aims at finding out how the integration of gamification influences the ESL learners' communicative competence in SMK Pekan Telipok, Sabah. This study sought to establish the effects of gamification; specifically, Role-Play and Charades on students' engagement, motivation, and language acquisition than conventional ESL teaching approaches. Using a pretest and posttest with 40 Form Four students, the researcher randomly assigned students to an experimental and a control group. The data was collected by means of observation, pre and post-tests, and semi-structured interviews. Based on the study, students in the experimental group who were exposed to gamified learning had a significantly enhanced level of learners' engagement and communicative competence compared to students in the control group. The experimental group had a significant gain in fluency, accuracy, and interaction, thus supporting the use of gamification in language learning. Students of both high and low proficiency levels showed positive feedback during the interviews; the students enjoyed the gamified activities and felt less anxious and more motivated. The finding of this study indicates that the incorporation of gamification in ESL teaching and learning can enhance the learning process and bring better results. The findings of the study also have implications for curriculum, teacher education, and policy change that point to the need for new classroom practices that address the learners' variability.

Keyword(s): *gamification, ESL speaking, communicative competence.*

INTRODUCTION

In the last few decades, the language of instruction, the approaches to teaching, as well as the tools used in teaching have greatly changed especially in the case of ESL. The use of technology in education has gone beyond the conventional methods, creating new frontiers as to how language can be taught and how learners can be made more involved (Yaccob et al. , 2022). Thus, in the changing world of language learning, communicative competence, an integral part of language learning, is not confined to grammatical mastery. It encompasses the linguistic competence which enables people to employ language in different situations, comprehend and engage in communication, and comprehend and manage social and cultural factors (Canale & Swain, 1980). In Malaysia, speaking and listening are still considered to be critical areas of development for secondary school students; speakers of English are considered competent if they are able to meet the criteria set out in the Aziz and Kashinathan study (2021). English language has received significant attention from researches over the years and still, students face challenges in attaining reasonable mastery of the language, which causes

demotivation and reduced language usage in tertiary institution and work place (Rafiq et al., 2019).

It can be argued that motivational factor remains of utmost importance in the process of language acquisition as it pushes students to hurdle language difficulties and become more involved in the process. One of the most daunting tasks for the ESL teacher is the issue of motivation, especially as the student moves from one level to another. This is because, the learning of language has been on the rise and the English language stands to be one of the most difficult to learn (Rafiq et al. , 2019). To these problems, gamification has been proposed as a solution as a pedagogical strategy. Gamification refers to the process of applying game characteristics in non-game contexts in order to improve the level of engagement and motivation (Yaccob et al. , 2022). Challenges, rewards, and interactive experiences serve as tools of engaging the learners through the use of gamification therefore making the process to be enjoyable than the conventional method of teaching.

This paper seeks to find out the effects of gamification on the English language learning of the students of SMK Pekan Telipok. The emphasis is on the analysis of the impact of gamification on the formation of the speaking and listening skills of students. The relevance of this work is that it can help to resolve the issues with ESL teaching by means of motivating students and their active engagement with the use of game elements in the learning process. Being aware of how technology affects teaching and learning is important for the design of instructional strategies that include gamification for language learning.

Analyzing the current literature, the authors note that is possible to state that gamification has a positive effect on learning outcomes, as it uses such elements as competition, collaboration, and feedback in the learning process (Cruz et al., 2023). Nevertheless, the effects of gamification in increasing motivation and engagement have been established though the impact on communicative competence in ESL contexts has not received much attention. Earlier research has shown that gamification can be beneficial for language learning and language use and application, yet there is a lack of research on how such environments affect the communicative competence in qualitative terms (Yildirim & Cirak-Kurt, 2022; Yunus & Boicu, 2023). Considering these observations, this study will address the following research questions:

1. How do ESL students perceive and experience the impact of gamification on their communicative competence?
2. How does gamification influence the qualitative aspects of communicative competence among ESL students?

As a result, this study seeks to answer the following questions with a view of creating a link between conventional approaches to teaching ESL and the current needs of learners to help understand how gaming might be harnessed in order to boost language teaching and learning in the present era of technological advancements.

LITERATURE REVIEW

In this present study, the researcher provides a literature review on the current trend and utilization of gamification in ESL classrooms as well as its effects on the students' communicative competence. The chapter starts with the description of the current practices in the application of gamification in ESL and how contemporary educators adopt game features into language classes. Currently, gamification is an exciting and promising approach in language learning, which uses various platforms and tasks. In the view of Yunus and Hua (2023), applications such as Quizizz are new forms of shifting away from the conventional teaching approaches and encouraging active engagement of students.

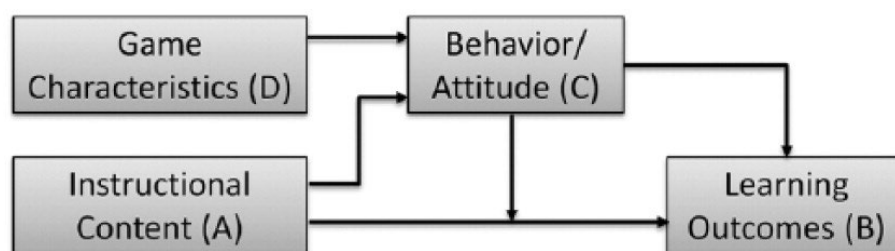


Figure 1: Gamified Learning Theory

Gamification Learning Theory (GLT)

The theoretical framework for this study is grounded in two primary theories: The theories that are to be used in the study include; Gamified Learning Theory (GLT) and Communicative Competence Theory. GLT, as advanced by Bedwell et al. (2012) and endorsed by Zaric et al. (2021), is concerned with the effect of game design on actions and dispositions in non-game contexts. GLT asserts that gamification has the potential to improve the learning outcomes because of increased engagement and motivation that comes with game design elements. Also, Nathan and Hashim (2023) pointed out that gamification can help in the development of communication and collaboration among students, which is in line with GLT's focus on the active and participative learning process.

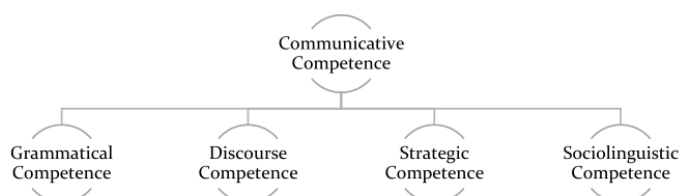


Figure 2: Canale and Swain's (1980) Communicative Competence Model

Communicative Competence Theory

According to Canale and Swain (1980), Communicative Competence Theory goes beyond the mere language mastery to the practical application of language. This theory identifies four components: These are grammatical, sociolinguistic, discursive and strategic competence. The present research is more specifically concerned with strategic competence, defined as the ability to employ communication strategies to bypass difficulties and enhance interaction. Grosser (2023) stresses the role of strategic competence in social interactions and, thus, the significance of the present study for exploring how gamification can improve such competence.

Gamified ESL Learning

The review also identifies the research gaps that are existing in the present literature. To the extent of the present author's knowledge, there is a plethora of research proving the effectiveness of gamification in various learning settings, yet, the detailed understanding of the impact on communicative competence, and specifically in the context of ESL, is scarce. Research works done by Yildirim and Cirak-Kurt (2022) and Yunus and Boicu (2023) reveal that gamification enhances motivation and engagement; however, there is limited evidence on how it affects language learning.

Consequently, this literature review presents the main findings that connect to gamification and its consequences in the context of ESL learning. Thus, the review aims at providing a strong theoretical background for the subsequent analysis of the positive impact of gamification on communicative competence based on GLT and Communicative Competence Theory. This research seeks to fill the gaps by examining the effects of gamification on ESL learners in detail to afford recommended approaches in language learning.

METHODOLOGY

To achieve the purpose of this study, the research used both quantitative and qualitative research methods to establish the impact of gamification to the ESL learners' communicative competence of SMK Pekan Telipok, Sabah. We chose the research methodology that would help to describe the specific effects of gamified learning activities on students' engagement and their linguistic development in detail. To this end, the study apply qualitative data collection methods such as systematic observation, pre and post test and structured interviews.

The study was conducted for several days to be able to record the on-going activities and the level of participation of the students when they are engaged on gamified and traditional ESL activities. This method allowed for discovering how specific elements of gamification, e. g. , role-playing, interactive games, influenced the level of students' engagement, motivation, and communication during classes. The detailed data of the student's behaviour such as their level of participation, the frequency of their participation and the quality of their interaction were documented and thus the impact of gamification was well understood.

Furthermore, a pre- and a post- test were used to analyze the quantitative shift in the students' communicative competence. These assessments aimed at finding students' language abilities, including fluency, accuracy, and interaction, during the beginning and end of the intervention. The major research question of the study was therefore to determine if there was any enhanced communication skills as a result of the gamified learning experience as indicated by the assessments.

Interviews were carried out to the students of the experimental group to get their feedback and perception on the application of gamified instruction. These interviews were meant to ascertain the students' opinions on the gamification activities used in class, the level of enjoyment they got from the activities and the extent to which these activities boosted their confidence and motivation to use English. The data obtained was analysed thematically in order to determine common trends in terms of student engagement, motivation, and perceived shifts in language competence.

The study had a population of 40 Form Four students selected through purposive sampling with the aim of having a sample size of ESL learners. This approach made it possible to recruit participants who had direct experience of the gamified learning environment thus offering important data on the success of the intervention.

To establish the credibility and dependability of the data, the study used standard proficiency tests and standardised procedures in data collection. To analyse the data collected from the interviews and observations, this study employed the technique of Thematic Analysis in order to determine how and in what ways the aspect of gamification influenced the improvement of the students' communicative competence. This methodological framework gave a strong foundation for assessing the efficacy of gamified learning and explained the ways it can be useful for the improvement of ESL teaching.

In conclusion, the mixed-method approach used in the study enabled an effective examination of the effects of gamification on the ESL students' CC as it captured both the changes in the qualitative data and the change in the behaviour of the students.

FINDINGS & DISCUSSION

The present work aimed at investigating the effects of gamification on the ESL learners' communicative competence, and the findings were as follows. The interviews with the students and the observations made by the educators showed that the students were more motivated and engaged when the ESL lessons were incorporate with gamified elements. Some of the activities that the students found helpful include digital quizzes and interactive games; this is

in agreement with the work of Yunus and Hua (2023) who revealed that tools such as Quizizz could transform the traditional teaching methods into more engaging forms of learning.

Apart from the increased interest, the students pointed out that they had also gained in communicative proficiency. They gained more confidence in applying English in different activities especially group tasks and different activities. The teachers also noted that the use of gamified activities improved the students' skills of cooperation and communication. This is in accordance with Nathan and Hashim's (2023) work, which noted that gamification of learning environments can improve the students' communication and collaboration. The positive effect on the communicative competence is in accordance with the Communicative Competence Theory since it is based on the effective usage of language in actual contexts.

This was also borne out by the classroom participation, which rose due to gamified activities. Those students who in the past had come to class without the desire to learn and participate were able to actively participate in the class, in discussions, and in group activities. This shift in participation highlights the opportunities that are presents by gamification that can change the classroom from a passive learning environment to an active one.

When trying to relate these findings with the existing literature, several similarities can be identified. In the present study, the enhancement in motivation and engagement is consistent with the findings of Yunus and Hua (2023) and Cruz et al. (2023), where they also experienced the same positive effects of gamification. This improvement in the communicative competence, is in sync with the observations made by Nathan and Hashim (2023) about the effectiveness of gamification in improving the communication skills. However, this study offers new findings on how the use of gamification impacts on the strategic competence of ESL learners; thus, it extends the understanding of the effects of gamification beyond the general motivation and engagement.

An assessment consisted of a pre-test and a post-test was also applied to measure communicative competence. These tests were essential in gathering data on participants' proficiency levels before and after the gamification intervention. The pre-test, conducted during Week 6 established a baseline, while the post-test Week 14 evaluated their results in speaking and listening abilities following the gamified learning activities for the experimental group and traditional classroom activities for the control group. The assessment administered was a standard speaking test where each pair of students would have to create a conversation based on the topic given to them. They are later scored according to their fluency and coherence, pronunciation and intonation, grammar and vocabulary, and interactive communication.

In the pre-test, the experimental group exhibited scores ranging from 33% to 83%, with an average score of approximately 55%. The control group displayed a similar range of scores, from 30% to 83%, with an average score of about 60%. These initial results indicated that both groups started with comparable levels of communicative competence. The post-test results, however, revealed significant differences between the two groups. In the experimental group, scores ranged from 37% to 100%, with an average improvement of about 20%. Therefore, the changes that were observed indicate a rather positive impact of the gamified learning activities on the students' communicative proficiency.

Experimental Group			Control Group		
Participant	Result		Participant	Result	
P01	25/30	83%	P21	25/30	83%
P02	25/30	83%	P22	23/30	77%
P03	24/30	80%	P23	23/30	77%
P04	22/30	73%	P24	22/30	73%
P05	20/30	67%	P25	22/30	73%
P06	20/30	67%	P26	20/30	67%
P07	20/30	67%	P27	20/30	67%

P08	17/30	57%	P28	18/30	60%
P09	17/30	57%	P29	18/30	60%
P10	16/30	53%	P30	16/30	53%
P11	15/30	50%	P31	15/30	50%
P12	15/30	50%	P32	15/30	50%
P13	15/30	50%	P33	15/30	50%
P14	15/30	50%	P34	14/30	47%
P15	12/30	40%	P35	14/30	47%
P16	11/30	37%	P36	12/30	40%
P17	11/30	37%	P37	11/30	37%
P18	10/30	33%	P38	10/30	33%
P19	10/30	33%	P39	10/30	33%
P20	10/30	33%	P40	9/30	30%

Table 1: Pre-Test Assessment Results

Experimental Group			Control Group		
Participant	Result		Participant	Result	
P01	30/30	100%	P21	26/30	87%
P02	28/30	93%	P22	23/30	77%
P03	28/30	93%	P23	23/30	77%
P04	25/30	83%	P24	24/30	80%
P05	25/30	83%	P25	23/30	77%
P06	23/30	77%	P26	20/30	67%
P07	22/30	73%	P27	23/30	77%
P08	22/30	73%	P28	20/30	67%
P09	22/30	73%	P29	18/30	60%
P10	20/30	67%	P30	15/30	50%
P11	19/30	63%	P31	15/30	50%
P12	18/30	60%	P32	17/30	57%
P13	19/30	63%	P33	19/30	63%
P14	19/30	63%	P34	19/30	63%
P15	17/30	57%	P35	17/30	57%
P16	15/30	50%	P36	11/30	37%
P17	15/30	50%	P37	11/30	37%
P18	15/30	50%	P38	11/30	37%
P19	13/30	43%	P39	10/30	33%
P20	11/30	37%	P40	10/30	33%

Table 2: Post-Test Assessment Results

On the other hand, the control group had only a slight change in the scores. The scores of this group in the post-test were 33 to 87% with an average gain of about 5%. While there were some improvements, for instance, Participant P21 grew from 83% to 87%, and Participant P24 improved from 73% to 80% these were not as significant as those of the experimental group.

The analysis of the results of the pre-test and post-test shows that the group of students who studied with the use of gamified activities had higher gains in communicative competence than the group of students who used traditional learning approach. This implies that the use of gamification is a very useful method for developing language proficiency since it seems to enhance students' motivation and participation, which in turn effects better learning.

Based on the pre and post test results of the experimental group, one can conclude that when teaching a language through games there is better improvement in the language competence of the learners. Furthermore, the findings from the semi-structured interviews helped in giving a better understanding of the students' experiences. This is because high proficiency students enjoyed the competitiveness and cooperation elements of gamification which created the students' interest and gave chances to perform at a higher level. The low proficiency students however felt that they had less anxiety and were more willing to engage in the activities when they are in a non-threatening, game environment. This result is in agreement with Krashen's Affective Filter Hypothesis that holds that the affective factor might play a pivotal role in determining the acquisition of language (Krashen, 1982).

To get more detailed information about the students' perception, experience, and concern about the gamified ESL learning, the semi-structured interviews were used. The interviews were conducted with 10 students of the experimental group, five students with the intermediate level of proficiency and the other five students with low English proficiency. Also, the interviews were conducted in a one-on-one manner in order to make them comfortable with the interviewer and therefore be able to give their opinions freely. The interview questions were designed to explore both perceptions of gamification and its impact on communicative competence to answer the first research question.

Participant	Category/Characteristics
P01	Experimental group. Intermediate level of proficiency in English.
P02	
P03	
P04	
P05	
P06	Experimental group. Lower level of proficiency in English
P07	
P08	
P09	
P10	

Table 3 : Semi-structured Interview Participants

The students in the higher proficiency group expressed positive experiences with gamification as it has made learning more enjoyable and effective in improving the communicative competence. They enjoyed the role-play activity as they believe it helps them to enhance their communicative competence for real-life conversations. P01 stated *"I like that the role-playing game a lot because we received marks for like every correct sentence we used in the different scenarios. Then we can know exactly what to say when we go through the same thing in real life"*. Additionally, they found the competitive elements of the games motivating, as earning points for correct answers turned learning into a challenge rather than a routine task. P02 commented *"I'm competitive so the games we played made me feel excited. It wasn't boring because we wanted to win"*. Other than that, the students highlighted the benefits of team-based activities, which improved their collaborative skills and effective communication in group settings. P03 said *"When we played the games in groups, we all wanted to win so we talked a lot. Like Charades game, it was so funny because we talked like rappers to explain the word"*. P04 also added *"Charades was fun, and I remember like I need to talk a lot because the words are very hard to explain"*. Finally, felt that gamified lessons made learning more enjoyable and reduced stress, contributing to increased enthusiasm for attending classes. P05 said *"Teacher, actually before this English was just meh, just okay but because we play games a lot in your class, it's more fun"*.

Low proficiency students also reported positive impacts from gamification, though their experiences differed slightly. Firstly, they expressed how gamification can reduce anxiety and create a more comfortable setting for practicing English, which is particularly beneficial for low proficiency students. P06 said *"It is less nervous feeling. I can practice with more fun with Charade and less nervous with many people in class"*. It is also important to point that the low proficiency students preferred the visual and interactive components which underlines the fact that gamified tools increase the learning motivation and make the process less stress for the students who have difficulties with the language learning. P07 said in support, 'Many picture and video so it easy to understand English'. Finally, the research also shows how the use of gamification enhance learning to make it fun and exciting thus increase the participation and motivation of the low proficiency learners. P08 reported, *'In game Charades, everyone have to play so I talk more English and practice speaking'*. In conclusion, they discovered that the low pressure condition of the games enhanced their volibility and their usage of English.

In sum, the interviews suggested that gamification can help both high and low proficiency learners: the former – because it offers them more challenges and opportunities to engage in advanced practice, while the latter – due to the increased confidence and the development of basic communicative competence. These results are in support of the theory that gamification greatly improves both motivation and competence in the ESL classroom.

The second research aim is to explore the effect of gamification on the rhetorical feature of communicative competence among ESL learners. This was assessed through observations and pre and post test assessments. The experimental group enhanced fluency, accuracy, and interaction in the study. The data showed that students were more active and participated more during the gamified activities hence proving that gamification has a positive impact on the qualitative aspects of communicative competence.

Limitations

Several weaknesses of the study should be noted. The present study had a small sample size of students and educators, which may not be generalisable to all students and teachers of English as a Second Language. Also, the study used interview data, and the participants may have provided socially desirable responses to the questions and, hence, not give an accurate account of their experiences. These constraints suggest that the results should not be overextended to all ESL situations.

Recommendations

Possible directions for future research include the use of a larger and more heterogeneous sample to increase external validity of the study. To build a more robust profile of the effects of gamification, self- reports could be supplemented with other information, like teachers' and students' observations and evaluations, as well as achievement results. Longitudinal studies could provide information on how gamification impact on communicative competence in the long run. A combination of qualitative and quantitative data can be used in the analysis to give a detailed account of the effects of gamification. In addition, the analysis of different types of the gamified activities and their consequences on the development of particular aspects of the second language learners' communicative competence can contribute to the development of the effective prescriptions for the integration of the gamification in ESP classroom.

CONCLUSION

The purpose of the study therefore was to establish the effectiveness of gamification on the ESL students' communicative competence at SMK Pekan Telipok, Sabah. Applying the mixed-

methods research design, it was established that gamified learning activities positively impacted on students' engagement, motivation, and language learning than in the traditional classroom setting. This study used observations, pre-test and post-test assessments, and semi-structured interviews to reveal that while, the experimental group, which was exposed to gamified activities, had a better improvement of their communication skills than the control group. High proficiency students enjoyed the challenging and competitive aspect of the task while low proficiency students liked the low pressure and non-threatening environment. These findings show that gamification has the ability to enhance the interest and success of ESL teaching and learning. Consequently, the research indicates that the incorporation of gamified activities into the ESL lesson plans is effective in enhancing engagement for both high and low proficiency learners. This can be effective in catering for the different learning needs of the learners as well as enhance the overall achievements thus making it important for teachers and other stakeholders in the education systems. Nonetheless, the study has the following drawbacks: the participants were few, and the period of the research was short, thus limiting the applicability and durability of the results. Further research should consider these limitations and extend the previous studies by investigating the durability of gamification, by comparing it across different levels of education, as well as by considering the roles of different students' characteristics in the process of learning. The present work could be extended by exploring other types of gamified activities and different technological tools to increase the knowledge about the use of gamification in the context of ESL education.

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FIGGERITS APPLICATION FOR MALAYSIAN SECONDARY SCHOOL STUDENTS' VOCABULARY DEVELOPMENT AND MOTIVATION

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ABSTRACT

This study examines the influence of Figgerits on vocabulary enhancement and student motivation in a secondary school in Sabah, Malaysia. The study centres around 36 Form 3 Alnair students with different English proficiency levels. Its objective is to explore students' perceptions and experiences on the impact of Figgerits in an *ESL classroom*. The study used qualitative methods through semi-structured interviews. The findings indicate that students perceive Figgerits to substantially improve their vocabulary acquisition and classroom engagement. The study highlights the significance of integrating *digital game-based language learning* (DGBLL) with educational theories like *Vygotsky's socio-constructivist theory* and the *Zone of Proximal Development* to guarantee accuracy and dependability. Although there are limitations due to technology, the application promotes a cooperative and inspiring atmosphere for learning. The challenges that have been recognised include the need to address technology accessibility and to maintain a balanced level of difficulty to preserve student motivation. Future research should prioritise more significant sample numbers, longitudinal investigations, and the investigation of adaptive learning systems. This study offers valuable insights into the incorporation of gamified learning technologies in ESL instruction, highlighting their capacity to enhance language learning results and student motivation.

Keywords: *vocabulary, motivation, ESL classroom, digital game-based language learning (DGBLL).*

INTRODUCTION

Digital Game-Based Language Learning (DGBLL) integration is a dynamic educational strategy (Chen et al., 2015). This approach is especially applicable in Malaysia, where a wide range of linguistic difficulties necessitate innovative resolutions. The potential of digital games to enhance language acquisition has been acknowledged (Rankin, 2002), and research highlights the need to incorporate game-based components to optimise learning outcomes (Sung, 2015). Figgerits coincides with this trend by providing a pleasurable experience for enhancing one's vocabulary and using advanced technologies to customise the learning process (Chik, 2019).

This study examines the influence of Figgerits on the enhancement of vocabulary and student motivation in secondary schools in Malaysia. Conventional approaches frequently struggle

to captivate students who are used to using digital technology, resulting in disinterest and a restricted expansion of vocabulary (Gardner, 2001; Sung, 2015). Figgerits seeks to close this divide by providing an interactive platform and tailored learning experiences. The research aims to determine the efficacy of Figgerits in enhancing vocabulary acquisition and its influence on motivation levels in English language schools.

The study focuses on the essential aspects of vocabulary development and motivation in secondary education in Malaysia. Acquiring a solid vocabulary is necessary for achieving academic achievement (Beck et al., 2002), and maintaining student motivation is vital for the process of learning a language (Deci & Ryan, 1985). The study enlightens educators and policymakers about the effectiveness of incorporating DGBLL principles in education by offering valuable insights into the advantages of Figgerits. The personalised learning strategy is in line with current educational trends and has the potential to provide customised language training that caters to the various needs of students (Hattie, 2009).

In Malaysian secondary schools, the challenge to effectively enhancing students' vocabulary and maintaining their motivation in language learning remains as a notable concern. Despite the increasing integration of DGBLL tools, a significant gap exists in adjusted solutions for Malaysian students' linguistic challenges (Chen et al., 2015). Traditional methods frequently fail to engage students, while limiting vocabulary development and motivation (Gardner, 2001). This research aims to address this essential gap by examining the efficacy of Figgerits, in enhancing vocabulary acquisition and sustaining motivation.

A problem that usually observed is the disconnect between conventional language teaching approaches and the preferences of students, who are essentially digital natives (Rankin, 2002). Traditional methods may need to align with modern students learning styles, leading to boredom and decreased motivation in language learning (Sung, 2015). Notably, Figgerits as a DGBLL tool, has the potential to tackle this gap by providing an interactive and engaging platform, by such mean addressing the challenge of students' detachment in language learning.

Furthermore, the lack of individualised learning experiences in vocabulary development worsens this problem. Conventional approaches often use a one-size-fits-all approach, overlooking the diverse linguistic needs of students (Hattie, 2009). Above all, Figgerits application introduces adaptive algorithms that adapt vocabulary exercises based on individual proficiency, aiming to reduce the challenge of limited personalisation in traditional language learning methods. This research investigates whether personalised approaches can effectively address the main development and motivation issues.

In essence, the central problem addressed in this research is the need for more current and modern language teaching methods in Malaysian secondary schools to cater to the evolving needs of students, resulting in poor vocabulary development and motivation. Therefore this study attempts to answer the following question: How do students perceive the impact of Figgerits on their vocabulary development and motivation?

The research acknowledges limitations such as the exclusive emphasis on secondary school students in Malaysia and the dependence on self-reported indicators of motivation. These factors can influence the applicability and understanding of the results. Acknowledging these limitations emphasises the necessity for additional investigation using varied samples and approaches to fully comprehend the influence of Figgerits on vocabulary acquisition and motivation.

LITERATURE REVIEW

Digital game-based language learning (DGBLL) has emerged as a promising educational strategy, effectively engaging students and facilitating language acquisition. Researchers have highlighted the benefits of integrating gamification elements, such as goal-oriented and rule-based activities, into educational contexts. McGonigal (2013) defines gamification as a structured and enjoyable activity designed to teach academic content (Mayer, 2015). Studies indicate that using games to teach vocabulary fosters enjoyment and interest, making it easier for secondary school students to learn new words (Bakhsh, 2016).

Vocabulary instruction is often challenging, requiring students to memorise unfamiliar words and spellings. Teachers must create effective materials to capture students' attention and motivation. Digital technologies can enhance classroom interactivity and productivity, as evidenced by Peterson (2013), who found that children learning vocabulary through digital games performed better than those using traditional methods. Other studies corroborate these findings, showing that students using gamified approaches score higher and are more engaged (Yudintseva, 2015; Calvo, 2017).

Gamification in education creates engaging learning environments that motivate students. The concept, popularised in 2002 by Nick Pelling and further developed by Kapp (2012) and Marczewski (2013), involves using game-based mechanics to engage and motivate learners. The Malaysian National Higher Education Action Plan 2017-2020 emphasises integrating technology in education, aligning with Deterding et al. (2011), who highlight the motivational benefits of gamification. Studies show that gamification improves student engagement, knowledge retention, and cooperation (Hakulinen & Auvinen, 2015; Garland, 2015).

While gamification has many benefits, concerns exist regarding its competitive nature and potential to induce pressure and reduce motivation (Burguillos, 2010). Poorly planned gamification can lead to confusion and negatively impact students' confidence and attention (Phung, 2020; Rom, 2014). Therefore, careful planning and alignment with lesson content are essential. Gamification has proven effective in enhancing motivation and vocabulary skills. Keller's ARCS model (Attention, Relevance, Confidence, Satisfaction) links motivation with learning. Studies show that gamification can significantly enhance vocabulary skills and interest in learning (Boyinbode, 2018; Bal, 2019; Kijpooonpol & Phumchanin, 2018). Research also indicates that gamified language learning applications improve motivation and vocabulary proficiency (Chen et al., 2015; Sung, 2015; Hamari et al., 2014).

Studies on Malaysian secondary school students highlight factors influencing vocabulary acquisition, such as language anxiety and teacher-student interactions (Abdullah & Ismail, 2016; Roorda, 2011). The use of mobile applications for vocabulary acquisition has shown promise, aligning with the current study's focus on Figgerits' effectiveness (Lei et al., 2022). Insufficient vocabulary knowledge hampers communication quality and reading comprehension (Alqahtani, 2015; Coxhead et al., 2010). Effective vocabulary acquisition is essential, requiring students to master a significant number of word families to function effectively in language skills (Laufer, 1997; Subon, 2013).

Vygotsky's socio-constructivist theory emphasises the importance of social interaction and scaffolding in cognitive development. According to Vygotsky (1978), students can achieve more with guidance and support. The Zone of Proximal Development (ZPD) further supports this, highlighting the role of scaffolding in learning. This study applies these theories by encouraging collaborative learning and providing personalised feedback through Figgerits.

The Figgerits application integrates DGBLL and gamification strategies, offering interactive puzzles and contextual clues to enhance vocabulary skills. By examining its impact on motivation

and vocabulary acquisition, this study aims to contribute to innovative language education approaches. Theoretically grounded and empirically driven, the study seeks to address the challenges and opportunities in leveraging digital technologies for language learning.

METHODOLOGY

This research adopts a qualitative design to explore students' perceptions and experiences on the impact of the Figgerits application on their vocabulary development and motivation. The participants are 36 form 3 Alnair students from SMK Takis, Papar, Sabah, Malaysia. Mostly, the students are monolingual, meaning they are proficient in only one language, which they speak fluently at home and in their everyday activities. The population comprises students adhering to CEFR standards to represent critical stages of language development. Convenience sampling was used to ensure representation across different CEFR proficiency levels, capturing a comprehensive view of the intervention's impact.

A semi-structured interview was used to gather qualitative data from the participants to provide meticulous data related to students' experiences and perceptions of Figgerits. There are five questions in total that participants must answer. In this part, participants were chosen based on their performance in class after utilizing Figgerits application. Thus, the selection also takes into account students CEFR level, six participants were chosen (3 female and 3 male students). Moreover, the flexibility of the interview in investigating the students' perspectives on the Figgerits application's influence on their motivation also applied. In addition, each participant was interviewed one-by-one in English room. Overall, the interview seeks to explore participants' reflection on motivation, personal perception and experiences, aiming to uncover the nuances of individual responses. To analyse the qualitative data, thematic analysis is employed to identify and interpret key themes such as "motivational factors" and "new vocabulary words" (Braun & Clarke, 2006). This methodological technique offers educators an understanding of how the application influences students' learning experiences (Creswell, 2013).

RESULTS

These are the findings from the six participants in the semi-structured interviews organized according to questions.

Question 1: How do you feel when you use the Figgerits application during English class?

During the interviews, participants regularly expressed that Figgerits is both challenging yet enjoyable, greatly boosting their motivation to acquire additional knowledge. Participant 1 expressed a desire to expand her knowledge of the English language through Figgerits, while Participant 2 regarded it as an enjoyable method to enhance his cognitive abilities and engage in mental stimulation. This topic emphasizes that integrating difficulty and pleasure in Figgerits cultivates a heightened degree of involvement and drive among 3 Alnair students. These are some of the extracts:

- *"Figgerits sometimes can be challenging and sometimes can be fun at the same time. And make me want to learn more about English vocabulary as I used to be. It makes the English class more fun than usual. Especially when you teach us."*(Participant 1)
- *"Emm yes it makes the class more interesting for me and it's a fun way to practice or challenge my mind to answer some vocabulary questions, and grammar."* (Participant 2)

Another prevalent topic among the responses was that Figgerits enhances the enjoyment and engagement of the English class. Participant 3 emphasized that Figgerits is enjoyable and educational, while Participant 4 succinctly said that it adds an element of interest to the session. This topic suggests that integrating Figgerits into classroom activities enhances students' overall satisfaction and enthusiasm for the subject. Participants 5 and 6 highlighted the cognitive advantages of utilizing Figgerits. They noted that it stimulates the mind to generate replies and compels the brain to discover unfamiliar phrases. This topic demonstrates that Figgerits presents a substantial cognitive challenge, necessitating students to engage in critical thinking and enhance their vocabulary as in the following extracts:

- *"Yes, it does, because Figgerits stimulates your mind to think of the answers"* (Participant 5)
- *"It makes the class interesting for me because it forces my brain to find the words that I haven't heard before."* (Participant 6)

Question 2: Do you feel more motivated to learn English vocabulary when you use Figgerits? Can you explain how it affects your willingness to study?

Concerning motivation, participants conveyed ambivalent sentiments regarding their inclination to acquire vocabulary using Figgerits. Participant 1 stated that Figgerits assists her in actively participating in vocabulary activities, even if it is not her preferred subject. Participant 3 emphasized that Figgerits enhances her lexicon and facilitates her acquisition of novel word connotations. Participant 5 discovered that Figgerits was a helpful instrument for acquiring new English vocabulary, particularly words often used in the United States. These following comments suggest that Figgerits can boost motivation by offering a pragmatic and captivating method for acquiring new words.

- *"Yes, because sometimes I'm not really interested to learn vocabulary as it not my favorite subject."* (Participant 1)
- *"Yes, because it expands my vocabulary and some new meanings of words."* (Participant 3)
- *"Yes, I do because Figgerits is a free and fun way to learn any English words you did not know. Or English words that only commonly use in America."* (Participant 5)

In contrast, certain individuals perceived Figgerits as difficult and discouraging. Participant 4 confessed to having a mild level of motivation due to his lack of proficiency in playing Figgerits. Participant 6 conveyed that the challenging nature of Figgerits can be discouraging, leading to a sense of dejection due to the demanding tasks. These responses indicate that Figgerits can be a useful educational tool for certain individuals but can also provide difficulties that may discourage other students.

- *"A little bit. Because I don't really know how to play it."* (Participant 4)
- *"Not really as Figgerits involve your brain to find the answer. But for me, it just makes me feel down as how hard it can be."* (Participant 6)

Question 3: Do you find Figgerits to be challenging or fun? Why?

Most participants indicated that the Figgerits application is both challenging and enjoyable. Participant 1 characterized it as a dual experience, acknowledging that the challenge might amplify the enjoyment. Participants 4 and 6 indicated that the application offers a balanced blend of difficulty and fun, referred to as a "half-half" or "50-50" experience. Participant 5 succinctly expressed that the activity was simultaneously demanding and enjoyable. This theme implies that

the inherent duality of Figgerits, encompassing both challenging and enjoyable parts, is a fundamental factor in its attractiveness to students.

- *"It was both at the same time. Because sometimes I want to challenge to be more fun and Figgerits is the proof."* (Participant 1)
- *"Hmm, half-half. It's challenging and also fun"* (Participant 4)
- *"I couldn't decide on that. But I would say 50-50. It depends on the person"* (Participant 6)

Additionally, certain individuals highlighted the educational advantages and motivational elements of the challenges posed by Figgerits. Participant 2 noted that the presence of foreign English words in the application adds difficulty but also recognized it as an excellent tool for learning. In addition, Participant 3 emphasized that the difficulties posed by Figgerits serve as a source of motivation for her further to enhance her knowledge of English vocabulary and grammar. Thus, it suggests that the demanding characteristics of Figgerits can function as a catalyst for students, compelling them to enhance their vocabulary and language proficiency.

- *"Sometimes it can be more challenging and sometimes it can be more fun. But it's a great way to learn English more. If I never heard some of the English words, it can be challenging."* (Participant 2)
- *"It is quite challenging because some words I don't know. And I think it give me more motivation about the English vocabulary and grammar."* (Participant 3)

Question 4: How has using Figgerits changed the way you participate in English class? Do you feel more involved or eager to join class activities?

Regarding class participation, most participants reported that utilizing Figgerits has heightened their engagement in class activities. Participant 1 expressed that it enhanced her level of engagement in classroom activities. Participant 3 expressed heightened engagement by discovering words and numbers in Figgerits. Participant 6 also conveyed enthusiasm for engaging in classroom activities as a result of Figgerits. This theme emphasizes that Figgerits positively impacts students' involvement and active participation in classroom activities.

- *"It's made me more involve in the class activity."* (Participant 1 and Participant 3)
- *"Yes, it does make me eager to involve in class activity."* (Participant 6)

Furthermore, some participants also highlighted that using Figgerits in the ESL classroom promotes a cooperative learning atmosphere, motivating students to collaborate and engage in discussions to find solutions to difficulties. Participant 5 observed that Figgerits facilitates his collaboration with his peers. Participant 2 observed that although Figgerits aids his engagement in class, he finds other activities to be more beneficial. While Figgerits may be advantageous for certain kids, others may find alternative activities more captivating and beneficial for their class participation.

- *"I do feel more involve in class when using Figgerits. For instance, Figgerits can also help to cooperate with my classmates"* (Participant 5)
- *"Not really because Figgerits also helps me involve in class but for me other activities will helps me more than Figgerits."* (Participant 2)

Question 5: How does Figgerits help you achieve your learning goals in English? Can you give an example of a time when the application motivated you to improve your vocabulary or language skills?

Participants commonly emphasized that Figgerits aids in their acquisition and practical application of new English terminology. Participant 1 observed that Figgerits acquaints her with unfamiliar vocabulary that she can employ in exams to attain superior grades. In addition, Participant 2 noted that the program sparked his curiosity about unfamiliar words, driving him to acquire their definitions. This, in turn, aids him in composing essays and responding to examination questions. Participant 3 expressed similar opinions, affirming that Figgerits enhances her lexicon and aids her in responding to examination inquiries. This theme emphasizes the role of Figgerits as a beneficial instrument for acquiring and using vocabulary in academic settings.

- *"Learn some more English words than I know as far as I learn. Sometimes it surprises me to learn new words. Sometimes what I learn from Figgerits I can use it in exam and achieve more marks."* (Participant 1)
- *"This application helps me by shows me some words that I never heard before and it make me more curious, and it make me find some of the meanings of the words. Plus, it also helps me during my essay and answering exam questions."* (Participant 2)
- *"There are sometimes objectives in exam. So, I can use the knowledge to answer the questions."* (Participant 3)

Several participants emphasized that Figgerits enhances their confidence in conversing in English. Participant 4 stated that the program enhances his knowledge of the English language and boosts his confidence in conversing with his acquaintances. In addition, participants also highlighted that Figgerits acquaints them with intricate and refined vocabulary. Participant 5 expressed gratitude for acquiring a "complex and sophisticated" vocabulary that may be utilized in everyday situations, enhancing their sense of intellectualism. In addition, Participant 6 highlighted that Figgerits offers sophisticated terminology that aids her in attaining her objective of enhancing her essay writing skills. This suggests that Figgerits provides kids with a sophisticated language, which enhances their intellectual and academic development.

- *"Speaking English with my friends and talk more confident in English with my friends"* (Participant 4)
- *"Figgerits help me learn English words that are complex and expensive. The words that I can apply in daily life make me be a more intellectual person."* (Participant 5)
- *"The Figgerits application really help me in real life. My learning goal in English to write a better essay. So Figgerits provide me more complex and advance words that could help me in my writing."* (Participant 6)

DISCUSSION

Based on the results, Figgerits was helpful for enhancing class 3 Alnair learning experience. According to Lim and Yunus (2021), to improve students' language proficiency, self-assurance and creativity, educators must integrate technology in the ESI classroom. This study shows evidence that the implementation of gamification has a positive impact on students' academic achievements and behaviour toward English language. Moreover, Yusoff and Jamil (2020) study also discovered that incorporating game elements into lesson plans led to greater student involvement and collaboration. These factors have been shown to enhance vocabulary retention and motivation, as supported by studies conducted by Chun and Heng (2018) and Wong and Tan

(2019). A study conducted by Kaur and Singh (2022) examines students' perceptions of gamification in ESL classrooms. The findings indicate that students value the organized and enjoyable learning environment facilitated by gamification. They also report enhanced collaboration and increased overall engagement in language learning activities.

Based on the interview responses, Figgerits does improve students' engagement and enjoyment in ESL classroom. Significantly, Figgerits boosts their motivation to learn as most participants described Figgerits as challenging and fun. Indeed, the challenging nature of Figgerits does stimulate cognitive engagement, making the learning process enjoyable. Evidently, numerous participants do acknowledge that Figgerits allure both challenge and enjoyment as the fundamental elements. Tan and Wong (2020) discovered that students exhibited a high level of engagement with DGBLL. This is because students found the interactive characteristics of digital game is interesting and motivating them. Additionally, the research conducted by Nguyen et al. (2022) and Ali and Bakar (2023) highlighted that the interactive features of DGBLL proven to reduces the stress associated with the learning process. To conclude, Figgerits enjoyable and participatory elements enhance ESL classes and increased students' motivation and involvement.

Participants however had mixed opinions about their desire to acquire vocabulary through the integrate of Figgerits. While some students found Figgerits to be advantageous for their vocabulary development such as opportunity to learn new words and use them in practical contexts, the complexity of Figgerits could possibly discourage certain students especially if they encountered difficulties in comprehending Figgerits. Guidance and supplementary assistance may be needed to ensure that all students acquire maximum value of the utilisation of Figgerits. A study by Smith and Johnson in 2018 founded those students had varied reactions to DGBLL. Some might claim DGBLL increase motivation while other feels overwhelmed by the captivating nature of technology. Although, technology indeed can potentially enhance motivation and engagement, it is also important to note that technology cannot be universally beneficial in inspiring everyone to learn vocabulary. Therefore, it depends upon individual preferences and prior experiences in technology to gain the technology's usefulness.

Many participants found that the fun and challenging activities creates a balanced and engaging learning experience. Thus, this motivates students to engage more deeply with the content, and unconsciously will driving them to improve their vocabulary and language proficiency. Moreover, the challenges presented in Figgerits provided educational benefits to the participants, where they highlight that these challenges motivate them to not only improve their English proficiency but to learn more. Zainal and Hashim (2021) revealed that gamified can be a motivating and enjoyable learning application. At the same time, it can helped maintain students' motivation and interest which leading to positive improvement in learning outcomes. Undoubtedly, the gamified features significantly enhanced students' motivation and learning outcomes (Hassan and Ismail, 2023).

There is positive impact upon integrating Figgerits on class participation. Participants reported feeling more involved and eager to join class activities which attributed to the nature of Figgerits being an interactive and collaborative language learning tool. Furthermore, Figgerits encourages students to work together and discuss the solutions together in pair and group. Yet, some students found that other activities more helpful than Figgerits for their involvement, overall the findings indicates that Figgerits does fosters a collaborative and engaging classroom environment that enhance students participation in ESL classroom. Huang et al. (2019) studied indicated that students enjoy the interactive and competitive features in gamified which contributes to students willing to participate in discussion and activities. Aligned with Ali and Rahman's (2023) that found team-based competitions and digital badges in gamified elements created a more engaging and inclusive learning experience for students.

Implication of the study

The study highlights that in classrooms without individual student access to laptops or tablets, teachers adapt by using an LCD projector to display Figgerits on a whiteboard, with students writing answers on paper. This adaptation may affect the learning experience, indicating the need for low-tech or offline versions of Figgerits to ensure equitable access and engagement for all students (Gee, 2018; Sykes et al., 2019).

The study suggests Digital Game-Based Language Learning (DGBLL) enhances student engagement and enjoyment. However, writing answers on paper due to lack of devices may reduce the game's interactive nature. Maintaining interactivity is crucial for student motivation and engagement, even in low-tech environments (Keller, 2016; Ryan & Deci, 2019; Deterding, 2020). Students have mixed feelings about their motivation to learn vocabulary with Figgerits. This suggests the need for additional support to help all students benefit from the tool. Providing adequate scaffolding can enhance motivation and the tool's effectiveness in vocabulary building (Vansteenkiste et al., 2020; Wu, 2022).

Suggestions for future research

The analysis of Figgerits in enhancing vocabulary and its effectiveness in ESL classrooms highlights several areas for future research. First, while the current study shows no significant gender differences in vocabulary improvement, engagement, and effectiveness, future studies should explore the nuances behind these trends. This could be achieved through larger sample sizes or longitudinal designs, examining how gender, age, socio-economic background, and prior exposure to English influence outcomes.

Additionally, future studies could explore balancing Figgerits' difficulty to maintain student motivation without causing frustration. Adaptive learning technologies adjusting difficulty based on performance might ensure all students benefit. Research could also evaluate support strategies such as instructional scaffolding, peer tutoring, or teacher-led interventions to optimize Figgerits' use in the classroom. Finally, investigating the broader educational implications of gamified learning tools on other language skills and conducting longitudinal studies on their long-term benefits could provide deeper insights for ESL education.

CONCLUSION

The study aimed to evaluate the impact of the Figgerits application on vocabulary acquisition and student motivation in Malaysian secondary schools. The findings indicate that Figgerits significantly enhances student engagement, enjoyment, and vocabulary skills, achieving the primary research objectives. However, challenges related to technological accessibility and varying levels of student motivation were identified, suggesting that while the tool is effective, additional support and low-tech solutions are necessary.

The research question was largely addressed, demonstrating that Figgerits can improve vocabulary acquisition and student motivation in ESL classrooms. However, the study also highlights the need for future research to explore demographic influences, understand gender-specific preferences, and evaluate support strategies to optimize the application's impact. Overall, Figgerits shows promise in transforming language learning, but further studies are needed to fully realize its potential across diverse educational settings.

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THE DEVELOPMENT OF A SPOC PLATFORM FOR EFL LISTENING INSTRUCTION IN HIGHER EDUCATION

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ABSTRACT

This study focuses on the design and development of a Small Private Online Course (SPOC) specifically created for the *English Listening 1* course, addressing the needs of non-English major students at a private language university in China. Hosted on the Umooc platform, the course is designed with interactive modules, multimedia resources, and task-based activities to facilitate listening comprehension and encourage student engagement. The study has two main objectives: (1) to explore the key features and functionalities of the SPOC platform, and (2) to assess how the platform's modules align with the pedagogical goals of EFL listening instruction. Through a detailed analysis of the platform's design, including resource sharing, task allocation, and collaborative learning opportunities, the study examines how these features are intended to enhance student engagement and support listening skill development. Additionally, the alignment of the platform's modules with the specific pedagogical objectives of EFL listening instruction is explored to evaluate their potential for improving listening comprehension. By providing insights into the integration of digital learning into EFL instruction, this research aims to contribute to the discourse on improving student listening proficiency and engagement in higher education contexts.

Keywords: *SPOC, EFL Listening, Umooc Platform, digital learning, student engagement*

INTRODUCTION

Listening comprehension is widely acknowledged as a fundamental skill in language acquisition, yet it presents significant challenges for EFL learners (Vandergrift & Goh, 2012). At my institution, a private language university in South China, non-English major freshmen often face difficulties such as limited vocabulary, challenges in processing rapid speech, and lack of correct listening

skills. Moreover, their minimal exposure to authentic English listening environments outside the classroom exacerbates these challenges, hindering their listening development. Traditional listening instruction at the university, which predominantly relies on teacher-centred methods and passive listening exercises, often fails to foster active engagement or address the diverse needs of students (Gilakjani, 2011). While these conventional approaches provide basic listening practice, they do not adequately help students overcome the specific barriers they encounter. As a result, there is an increasing need for innovative instructional strategies that promote student engagement and facilitate more effective listening practice.

In recent years, advancements in information technology have significantly transformed teaching methods, giving rise to hybrid teaching models that combine various instructional strategies to achieve diverse educational goals. While Massive Open Online Courses (MOOCs) gained rapid popularity worldwide starting in 2012, they also revealed several limitations, including high costs, lack of course relevance, resource waste, and high dropout rates. These shortcomings prompted educators to seek alternative solutions, leading to the emergence of Small Private Online Courses (SPOCs). Unlike MOOCs, SPOCs are smaller, more targeted online courses with restricted access, typically involving a few dozen to several hundred students. SPOCs integrate the high-quality resources of MOOCs with traditional classroom instruction, marking a significant development in the “post-MOOC era” of blended learning. This model recognizes that while online education offers distinct advantages, it cannot fully replace in-person teaching (Liu, 2021; Guo, 2021; Xie et al., 2021). By combining the flexibility of online learning with face-to-face interaction, SPOCs provide a more balanced and effective educational experience.

Despite the potential of this hybrid model, its application remains limited, especially in English listening instruction, where traditional methods continue to dominate. Furthermore, the use of SPOCs in EFL listening instruction has been insufficiently explored, particularly within the context of Chinese higher education. Most existing studies on technology-assisted listening instruction have concentrated on general language skills or large-scale online courses. Limited research has explored the potential of SPOC-based approaches to address the specific needs of non-English major students in listening skill development.

This study aims to design and develop a SPOC to meet the specific needs of non-English major students in the *English Listening 1* course at a Chinese private language university. Hosted on the Umooc platform, the course integrates authentic listening materials and interactive tasks designed to improve students’ listening comprehension and proficiency. Key features of the platform include resource sharing, task allocation, and collaborative learning opportunities, aimed at encouraging student engagement and active participation. This research investigates the potential of SPOC-based models to enhance English listening education in higher education settings, leveraging digital technologies to address contemporary learning needs.

The primary objective of this study is to analyze the design and functionalities of the *English Listening 1* SPOC, with a specific focus on how its modular structure aligns with instructional goals. The study explores how the interactive and collaborative features of the SPOC platform contribute to student engagement and support the development of listening skills, specifically in alignment with the pedagogical goals of EFL listening instruction. By addressing these aspects, the research aims to provide both theoretical insights and practical implications

for improving listening instruction in higher education, leveraging digital technologies to meet contemporary learning needs.

To achieve this objective, the study aims to fulfil the following two specific objectives:

- To examine the key features and functionalities of the SPOC platform for EFL listening instruction.
- To evaluate the alignment of the platform's modules with the pedagogical goals of EFL listening instruction.

LITERATURE REVIEW

Concept and Applications of SPOC

SPOC (Small Private Online Course) is a small-scale, selective online learning model that emerged in the post-MOOC era, combining online education with traditional teaching methods. It addresses the limitations of MOOCs, such as large class sizes, low participation, and the inability to cater to individual learning needs. SPOCs are characterized by smaller class sizes, selective enrollment, and interactive features, including micro-lectures, quizzes, peer assessments, and discussion forums, which facilitate personalized and engaging learning experiences.

In educational practice, SPOC is implemented in two main ways. One approach, proposed by Piccioni et al., integrates SPOC as a supplement to traditional classroom instruction, where students engage with online materials after in-class lessons. Another approach, advanced by Sébastien et al., blends SPOC with a flipped classroom model, where students first study materials online and then apply them during face-to-face sessions. Several prestigious universities globally have adopted SPOCs. For example, UC Berkeley's *Software Engineering* course, Harvard's *Architectural Hypothesis* course, and MIT's *Python Programming* course have all successfully utilized the SPOC model. In China, Tsinghua University introduced SPOC in 2013, implementing UC Berkeley's *Cloud Computing and Software Engineering* course. After a trial semester, students showed comparable performance to their Berkeley peers, with increased engagement (Han, 2017).

Scholarly research on the pedagogical impact of SPOC has emerged globally. Professor Bao of Harvard University suggests that SPOC's effectiveness and high completion rates underscore its potential (Zhang et al., 2014). Fox (2013) argues that SPOC enriches teaching methodologies and boosts student engagement. The integration of SPOC with the flipped classroom model has been shown to improve learning outcomes. Peng and Wang (2024) found that the SPOC-based flipped classroom significantly boosts student engagement, course appeal, and learning effectiveness. Additionally, Liu et al. (2019) conducted a meta-analysis revealing that this model outperforms traditional classrooms in key areas such as exam performance, knowledge application, and student motivation.

In conclusion, SPOC has a transformative impact on education by fostering student engagement, improving learning outcomes, and redefining teaching methods. Its potential for personalized learning makes it particularly suitable for addressing the diverse needs of students in higher education.

Benefits of the SPOC in Language Instruction

The integration of SPOC in EFL instruction has gained significant attention for its potential to enhance learning outcomes and promote active engagement. Liu (2022) highlights the effectiveness of the SPOC hybrid model in improving student performance and engagement in English listening courses, suggesting that SPOC platforms foster active participation, which is essential for language acquisition. This finding aligns with broader research supporting SPOC's positive impact on language learning. Zhu and Wang (2021) further demonstrate that SPOC models address challenges in traditional teaching, such as resource limitations and low engagement. By offering personalized learning tailored to students' proficiency levels, SPOC increases motivation and participation while enhancing interaction between students and instructors. Jiang and Liang (2023) identify key factors for sustaining engagement in SPOC-based courses, including students' initial motivation, course design, and teacher involvement, highlighting the importance of both intrinsic and extrinsic motivators in fostering long-term engagement. Xi and Chen (2018) explore the transformative potential of SPOC in flipped classrooms, noting that integrating SPOC with mobile technology creates a dynamic, student-centered learning environment that enhances autonomy and language acquisition. Zhang et al. (2018) emphasize the role of SPOC-based flipped classrooms in providing flexible, interactive learning environments, fostering active student engagement, and supporting personalized learning.

Similarly, Chen (2020) illustrates the effectiveness of SPOC in interpreting courses by promoting independent learning and continuous assessment, enabling instructors to adapt teaching strategies as needed. Finally, Zheng and Lee (2023) investigate the impact of SPOC-based blended learning on first-year English majors, showing significant improvements in listening, reading, writing, and translation skills, though speaking skills remained unaffected. In conclusion, while SPOC has been widely recognized for its ability to enhance engagement and personalize learning in EFL contexts, its application specifically in English listening instruction remains under-researched. Most studies focus on general language skills, leaving a gap in understanding how SPOC platforms can be effectively designed for listening practice. This highlights the need for further exploration into SPOC-based platforms tailored to improve listening comprehension. By addressing the unique challenges of listening instruction, such platforms could offer significant benefits in enhancing student outcomes and engagement. This study aims to fill this gap by focusing on the design and functionality of a SPOC platform specifically for EFL listening instruction in higher education.

THEORETICAL FRAMEWORK

This study draws on Social Constructivism, a theoretical framework that emphasizes the active, collaborative, and student-centered nature of learning. According to this perspective, knowledge is not passively received but actively constructed through social interactions and the collaborative engagement of learners. Three central concepts within this framework—student-centered learning, the Zone of Proximal Development (ZPD), and the role of the More Knowledgeable Other (MKO)—serve as the foundation for developing a SPOC platform tailored for EFL listening instruction.

Vygotsky (1978) contended that learning is a dynamic process in which students engage in constructing meaning through interaction with their environment and peers. In this view, learners are active agents, and the learning environment must foster autonomy and promote engagement. The SPOC platform facilitates these principles by providing interactive, personalized learning experiences. These experiences are designed to align with students' individual proficiency levels, offering tasks that are within their ZPD and gradually advancing their listening abilities (Tharp & Gallimore, 1988). By presenting tasks that challenge students without overwhelming them, the platform supports their cognitive development and listening skill improvement, allowing them to progress beyond their current capabilities.

The role of the More Knowledgeable Other (MKO), as introduced by Vygotsky, is integral to this process. In the SPOC environment, the teacher acts as the MKO, providing guidance and scaffolding to students as they navigate the complexities of English listening. Additionally, peer interactions within the platform further facilitate learning, enabling students to learn from each other's insights and experiences. This peer-to-peer collaboration is particularly crucial for enhancing social engagement and fostering a deeper understanding of listening materials.

Moreover, the SPOC platform's design allows for iterative feedback loops, where both instructor feedback and peer input contribute to students' ongoing learning. These elements create a learning ecosystem that supports both independent and collaborative cognitive development, enhancing students' listening skills and their ability to engage with the language in a meaningful way.

In summary, this study applies the principles of Social Constructivism to create a dynamic, interactive learning environment that supports EFL listening instruction. By incorporating the key concepts of ZPD and MKO, the SPOC platform not only nurtures students' cognitive growth but also empowers them to take ownership of their learning, fostering both individual and collective engagement in the language acquisition process.

DESIGN AND FEATURES OF THE SPOC PLATFORM

Course Overview---College English Listening 1

College English Listening 1 is a compulsory foundational course for first-year undergraduate students majoring in non-foreign language disciplines at a private language university in South China, where the researcher is employed. The primary aim of this course is to equip students with essential listening skills that are critical for both academic and professional communication. The course is structured around the *New Horizon College English: Listening and Speaking Course 1*, which serves as the core teaching resource. This textbook provides a systematic framework of listening exercises and tasks that are designed to improve listening comprehension, offering a rich array of authentic listening materials that reflect real-life contexts. In addition to enhancing language skills, the course also aims to develop students' cognitive frameworks and cultural awareness, while fostering critical thinking abilities. By focusing on both linguistic and cognitive growth, the course contributes to students' overall development, preparing them for both academic success and professional environments where English proficiency is crucial.

Platform Overview

The researcher leveraged the Umooc platform to design a SPOC tailored specifically for the *College English Listening 1* course. Developed by the Educational Technology Research Institute of Tsinghua University, the Umooc platform has been implemented by the researcher's institution since 2016 to facilitate online learning. This platform provides comprehensive support for instructors, enabling them to create and modularize course content, upload a variety of instructional resources, and conduct diverse interactive activities such as Q&A sessions, discussions, assessments, assignments, feedback, and announcements.

Equally, the platform addresses the learning needs of students by allowing flexible access to course materials, active participation in instructor-led learning activities, and engagement in collaborative group tasks. Its dual access system, via both a mobile application and a web-based interface, ensures compatibility with various devices, including smartphones, laptops, and desktop computers. This technological flexibility enhances connectivity and ensures accessibility for all users, including students, instructors, and teaching assistants.

As depicted in Figure 1, the web interface of the SPOC platform provides an organized presentation of essential course elements. These include teacher details, a course introduction, course-related notifications, updates, and instructor-designed modular units. Additionally, the course information section (see Figure 2) provides detailed metrics such as the number of enrolled students, course access frequency, notifications, available resources, and discussion topics. These features collectively illustrate the platform's ability to integrate and present comprehensive data to support teaching and learning objectives.

Design and Functionality of the SPOC Platform for Listening Instruction

Key functionalities of the platform include the dissemination of announcements, resource sharing, task allocation, and the facilitation of interactive and collaborative learning activities. To foster active engagement and learner interaction, Umooc integrates advanced classroom projection technologies and implements diverse assessment approaches, including inter-group and intra-group evaluations. Both synchronous and asynchronous feedback mechanisms are embedded to ensure dynamic instructor-learner communication.

Furthermore, Umooc employs a data-driven approach to monitoring student performance. The platform systematically tracks and records learners' online activities, including login frequency, total time spent on the platform, video engagement duration, assignment submissions, contributions to discussion forums (both posts and replies), and performance on unit tests (see Figure 3 and 4). These detailed analytics enable instructors to conduct formative assessments by providing comprehensive insights into learners' progress and engagement, supporting evidence-based evaluations of academic performance and instructional effectiveness. The platform also incorporates social media-inspired features, such as upvoting and emoji reactions, to sustain student interest and stimulate active participation. Unit-specific discussion boards, available in advance of scheduled classes, serve as forums for collaborative learning, enabling students to exchange ideas, provide peer feedback, and collectively explore course content.

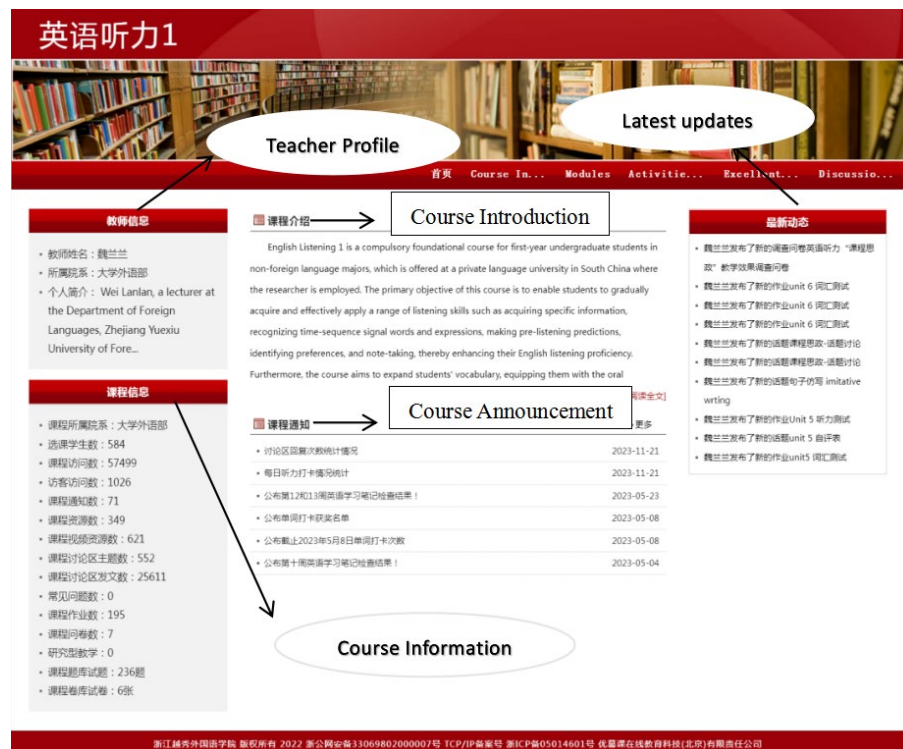


Figure 1: Screenshot of the Platform's Web Interface

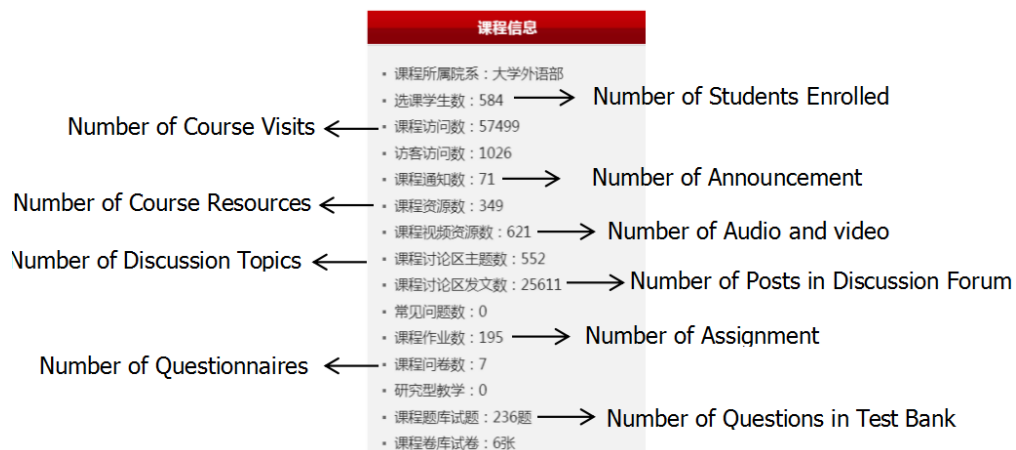


Figure 2: Description of the Course Information Section

In summary, the Umooc platform offers features such as resource sharing, interactive activities, advanced assessment tools, and detailed tracking of student online learning behaviors, including login frequency, engagement time, and activity participation. These capabilities provide instructors with data-driven insights to support English listening instruction effectively.

Student name		Frequency of Course Logins		Login Duration (in Minutes)
学生姓名*	学生用户名*	登录课程次数	登录时长(分钟)	上次访问时间
濮婷婷	2233658	250	1089	2024-04-11 09:50:52
徐蕾	2233659	709	525	2024-06-24 21:00:21
尤雨洁	2233660	222	760	2024-03-26 15:25:04
陈安可	2233661	503	772	2024-05-20 11:38:54
蔡万旭	2233662	142	238	2023-12-28 09:56:56
柳舒航	2233663	70	109	2024-11-08 18:30:06
夏冰馨	2233664	1077	1966	2024-09-20 20:14:24
倪鑫怡	2233665	171	299	2024-11-08 22:27:36
平一恒	2233666	443	1249	2024-07-05 15:35:08
曹雅岚	2233667	500	2057	2024-06-26 00:28:27

Figure 3: Statistics on Student Logins and Duration

		①	②	③	④	⑤	⑥
学生姓名	学生用户名	课程讨论区回文次数	阅读课程通知次数	阅读教学资源次数	上交课程作业次数	进入播课次数	学习播课视频时长 (分钟)
胡泽鹏	201931209020015	101	10	88	52	127	100
洪艺菲	202130502070053	235	7	214	50	144	216
邢瑞	2233653	203	15	91	80	226	281
顾恒坦	2233654	57	0	93	79	173	156
孙紫鑫	2233655	274	27	105	83	198	420
蒋倩	2233656	491	35	120	84	289	336
杨宇波	2233657	114	2	66	74	94	39
濮婷婷	2233658	114	4	92	63	162	383
徐蕾	2233659	544	24	119	74	155	103
尤雨洁	2233660	110	14	88	50	140	219
陈安可	2233661	297	32	129	79	193	188

Note: ① Number of Posts in the Discussion Forum; ② Number of Course Notification Views
 ③ Number of Accesses to Teaching Resources; ④ Number of Assignments Submitted
 ⑤ Number of Video Views; ⑥ Video Watching Duration (in minutes)

Figure 4: Statistics of Students' Online Learning Behavior

Alignment of SPOC Learning Modules with EFL Listening Instruction Goals

The SPOC platform is structured around a central Learning module (see Figure 5), which forms the core of the learning experience. This module comprises eight distinct units, each containing six submodules designed to address key aspects of English listening instruction (see Figure 6).

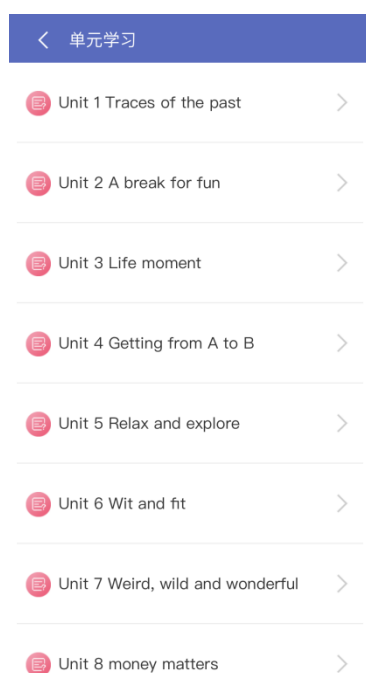


Figure 5: Learning Module on APP Interface

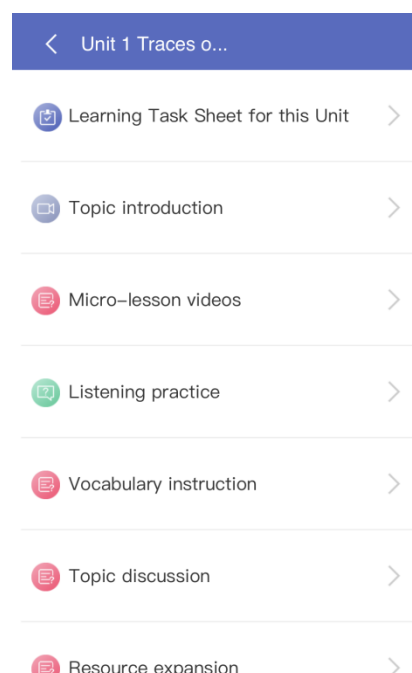


Figure 6: Submodules of Unit 1

Topic Introduction Submodule (see Figure 7): Each unit begins with the “Topic Introduction” submodule, which serves to activate students’ prior knowledge and stimulate interest in the forthcoming content. Drawing on Constructivist principles, this phase helps learners link new information to their existing knowledge base, thus facilitating a smoother transition into the more complex listening tasks ahead. Additionally, this step aims to enhance motivation by making the content more relevant and engaging.

Micro-Lesson Video Learning Submodule: In this submodule, concise instructional videos focus on core listening strategies, such as note-taking, identifying main ideas, and recognizing discourse markers. Created by the instructor or sourced from existing MOOC resources, these videos foster independent learning and reinforce listening skills. Rooted in Constructivist Learning Theory, this submodule encourages active engagement and self-paced learning, empowering students to apply strategies, strengthen their language proficiency, and develop critical thinking.

Listening Practice Submodule: This submodule presents students with a series of video-based listening tasks designed to simulate real-world contexts. By completing these tasks, students can apply listening strategies learned in previous submodules, which promotes active engagement with the material. The design of this submodule aligns with Task-Based Language Teaching (TBLT), emphasizing comprehension and task completion based on video content. These tasks provide students with opportunities to practice listening in authentic contexts, enhancing their ability to navigate various communicative situations and fostering critical listening skills.

Vocabulary Learning Submodule: The “Vocabulary Learning” submodule equips students with essential vocabulary, ensuring they are prepared to process and understand the listening material. By targeting key lexical items relevant to each unit, this module helps learners expand

their vocabulary and deepen their comprehension of spoken language. The integration of vocabulary development within the listening practice ensures students have the necessary linguistic resources to improve their listening skills.

Topic Discussion Submodule (see Figure 8): In this submodule, students collaborate with peers to discuss the unit's theme in greater depth. Rooted in Social Constructivism, this submodule highlights the importance of peer interaction in knowledge co-construction and language refinement. By engaging in these discussions, students can clarify misunderstandings, exchange ideas, and strengthen their understanding of the content.

Resource Expansion Submodule: This submodule provides supplementary materials that encourage further exploration of the topics covered in the unit. These resources promote independent learning and critical thinking, offering students the opportunity to extend their learning beyond the classroom. This feature aligns with the modern emphasis on self-directed study and lifelong learning, further supporting students' academic development.

In summary, the Learning module represents a comprehensive, pedagogically grounded approach to EFL listening instruction. By integrating diverse teaching strategies and structuring content in a modular format, the platform creates a flexible yet focused learning environment. It fosters active engagement, autonomy, and collaboration among students, while aligning with the broader goals of contemporary TESOL pedagogy. The design of the platform ensures that students not only enhance their listening proficiency but also develop skills that will support their long-term academic success.



Figure 7: Topic Introduction Module of Unit 1

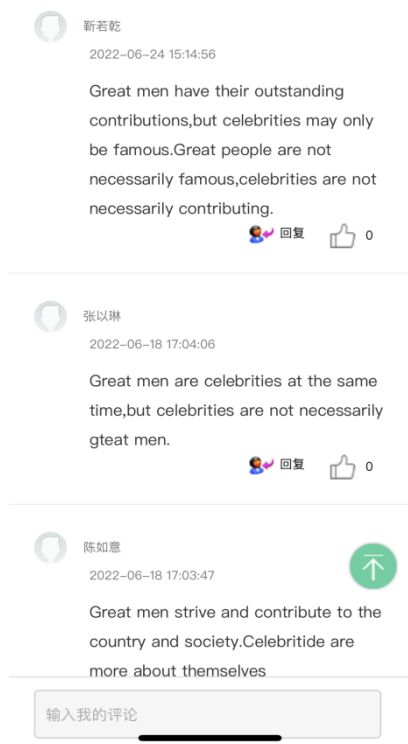


Figure 8: Topic Discussion in the Forum

CONCLUSION

This study has introduced the development and functionality of a SPOC platform designed to enhance EFL listening instruction in higher education. By integrating structured unit-based learning modules with interactive tasks and resources, the platform fosters autonomous learning and active engagement. As its construction nears completion, the next phase will focus on assessing its impact through a rigorous mixed-method approach. Quantitative analysis of student behavior data collected via the platform will examine the relationship between online engagement patterns and listening comprehension performance. Concurrently, qualitative insights derived from student interviews will illuminate their perceptions, attitudes, and experiences with the SPOC-based learning model. These findings will inform refinements to the platform and contribute to the broader discourse on technology-enhanced language learning by uncovering the dynamics between digital engagement and language acquisition. This research not only aims to validate the pedagogical potential of SPOC platforms in EFL instruction but also seeks to offer a scalable and evidence-based framework for integrating technology into language education. It underscores the transformative role of digital tools in fostering adaptive, student-centered learning environments and advancing the efficacy of contemporary language teaching practices.

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