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ESTABLISHING A MALAYSIAN MODEL OF PICTORIAL VOCABULARY FOR VIRTUAL LEARNING

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Abstract

The key English Language skills underlined by the Standards-Based English Language Curriculum (SBELC): reading, writing, listening, and speaking, are only indirectly interwoven with vocabulary development. Students learning English as a Second Language (ESL) with limited English vocabulary find it challenging to acquire and utilise English regularly. This research seeks to build a Malaysian model of pictorial vocabulary that would assist students in acquiring vocabulary through virtual learning. In this research, 30 ESL students from Malaysian secondary schools will utilise this approach to assist them in learning the SBELC's target words. These students did not have the required word level to continue their tertiary studies. A mixed methods study design will be used, including a sequential explanatory approach. Students have completed an evaluation form after utilising the suggested vocabulary learning model, which has evaluated descriptively in terms of its mean scores and standard deviation. Content analysis is used to transcribe, categorise, and code the qualitative data from the student interview sessions. The model is anticipated to improve their vocabulary knowledge significantly. The findings of this study confirm the viability of using the Malaysian model of pictorial vocabulary to acquire target words. This research provides value to the field of vocabulary acquisition since it may be utilised to conduct further research to improve students' capacity to acquire new words.

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1. Introduction

Learning vocabulary is a component that has only been indirectly integrated into the four core skills of reading, writing, listening, and speaking that make up the Standards-Based English Language Curriculum (SBELC). As such, students with a limited range and knowledge of vocabulary will find it challenging to learn and utilize English regularly.

This study aims to resolve this issue by proposing a Malaysian model of pictorial-based vocabulary learning that will aid students in their vocabulary learning online or remotely. This model is also designed to create a sustainable method for students to participate in the virtual learning of vocabulary.

The developmental focus of this proposed model is threefold: to create a pictorial-based learning model, to optimize the said model specifically for vocabulary learning, and to ensure that it allows for sustainable open distance learning of vocabulary, especially considering the disruptions inflicted by the COVID-19 pandemic to regular face-to-face, teacher-centric classroom instructions. As such, this model is developed and designed around the shift in education and learning methods that would be the most suitable for students in the current situation, which revolve around fostering independent learning and student-centeredness.

2. Problem Statement

Words are vital in communication, irrespective of language. Take English, for example. Communication happens via sentences or phrases, where words are combined and arranged to form meaningful structures. These words are known to us as vocabulary, the building blocks of communication.

However, the COVID-19 pandemic has significantly affected all aspects of our daily lives, including how education is delivered. Schools and educational establishments were forced to close, hoping social distancing would flatten the infection curve and minimize the overall fatality count from the pandemic (Di Pietro et al., 2020). This measure has resulted in a severe disruption of standard teaching and learning practices, thus giving way to online classes conducted from remote locations instead of face-to-face learning. Educators and students face unprecedented challenges navigating through virtual learning (Garcia & Weiss, 2020). Naturally, the traditional ways of learning English vocabulary have also been rendered redundant in the face of the current situation.

These circumstances resulted in the option of using technology as a viable pedagogical tool in the learning of English vocabulary. Many studies have attempted to ascertain the impacts of technology or digital tools in vocabulary learning, with the majority yielding favorable results. This matter is especially true regarding enhancing vocabulary acquisition Shokrpour et al. (2019), improving vocabulary retention, increasing long-term memory, and motivating young learners to learn vocabulary (Leong et al., 2019).

However, all the above expose the gaps that this study seeks to address. Firstly, although many available digital tools, applications, and software can improve the learning of English vocabulary, such as games and YouTube videos, these mediums are not dedicated purely to English language learning purposes. Their primary purposes lie elsewhere; entertainment, translation services, communication, and

presentations. This situation forces the vocabulary learning process to take place indirectly. Secondly, while applications, software, and digital-based models for English language learning exist, none of these were explicitly designed and developed with English vocabulary learning in mind. Thirdly, almost no studies are conducted on these two matters in the Malaysian context using the suggested word list by the SBELC as there is no evident need for these studies, as indicated by Mahzan et al. (2020). Moreover, prior studies were not conducted in education during the pandemic, so many factors must be considered. As such, it is vital to conduct this study, for it could prove an insightful perspective on how the pandemic could impact English vocabulary learning, especially in Malaysia.

3.   Research Objectives

   i.   To establish a Malaysian model of pictorial vocabulary to be used by ESL students based on the word list provided in the Standards-Based English Language Curriculum (SBELC) for virtual learning.
   ii. To explore the effects of using the Malaysian model of pictorial vocabulary for virtual learning among ESL students.
   iii. To probe ESL students' perceptions of using the Malaysian pictorial vocabulary model in vocabulary acquisition through virtual learning.

3.1. Research Questions

   i.   How to establish a Malaysian model of pictorial vocabulary to be used by ESL students based on the word list provided in the Standards-Based English Language Curriculum (SBELC) for virtual learning?
   ii. What are the effects of using the Malaysian model of pictorial vocabulary amongst ESL students in learning the English vocabulary specified by the SBELC through virtual learning?
   iii. What are the perceptions of ESL students using the Malaysian Model of pictorial vocabulary in acquiring vocabulary through virtual learning?

   It is believed that this study will contribute in:
   i.   Developing a localized vocabulary learning model in acquiring the necessary English vocabulary as stipulated in the nation's English language curriculum and syllabus.
   ii. Expanding ways in acquiring English vocabulary that can be utilized in both remote and in-person learning
   iii. Catering to the different learning styles of Malaysian students, especially those who learn best through visual and audio.
   iv. Capitalizing on the use of technology and its peripherals, which is the way forward in education in the post-pandemic world.

   The remainder of this paper is arranged as follows. Section 2 focuses on the relevant literature for this study. Section 3 will then explain the methodology used by this study. Section 4 and 5 will pick up from this and offer findings and conclusions for this study before several directions for future studies are proposed.

3.2. Literature review

3.2.1. How the COVID-19 Pandemic Changed Education

It is not an understatement to say that education is one of the sectors most negatively affected by the COVID-19 pandemic. How education is sourced, offered, transferred, and utilized has seen significant changes overnight as schools and various other educational institutions were forced to close. For example, on May 5th, 2020, UNESCO reported that a country-wide closure of these institutions had been imposed by a total of 161 territories, causing the learning of almost 1.2 billion learners to be disrupted worldwide (UNESCO, 2021). In Malaysia alone, the closing of schools starting on March 18th, 2020, caused mass disruption to the nation's education as 5 million students were affected. These learners have been attending school remotely via various online arrangements to replace the in-class instruction that cannot be afforded in these times, thus causing a shift to a learning style reminiscent of homeschooling or online education (Garcia & Weiss, 2020).

However, virtual learning is not without its drawbacks, with one of them being that students tend to spend less time learning from home due to having more factors distracting them from studying compared to when they are in school (Di Pietro et al., 2020). In addition, the physical and emotional restlessness that many students were going through due to being confined at home for long periods throughout the ongoing COVID-19 pandemic caused them to feel both stressed and anxious. This situation could easily translate to a loss in their ability to concentrate on their studies and schoolwork as they cannot receive a more detailed explanation from their teachers due to the reduced level of communication between the students and teachers (Nassr et al., 2020). Moreover, research strongly suggests that the closure of physical schools and the lack of in-person contact have dampened the motivation of students to engage in learning activities (Garcia & Weiss, 2020). Their homes' relaxing and comfortable environment further exacerbated this lack of motivation to participate in online learning activities actively.

3.2.2. How a Digital Based Vocabulary Learning Model Could Resolve Related Issues in Virtual Learning

Previous studies suggest that the inclusion and integration of technology for vocabulary learning could bring much-needed improvement to the learning process. It could infuse novelty, innovation, creativity, interest, and fun into vocabulary learning activities. Therefore, the researchers believe that the digital-based vocabulary learning model that this study has provided an exciting and attractive learning experience for students (Tahir, Albakri, Adnan, Shah, et al., 2020). The students have full access to the use of images and various other interactive features provided within the application, such as videos and soundbites, to aid, improve, and enhance their vocabulary learning. This situation is a far cry from the monotony of having to memorize words from pieces of paper. As such, it is purported that the engagement level of the students with the digital learning activities could significantly improve their motivation in learning vocabulary, especially when compared to the traditional methods of relying on tried-but-not-so-true methods like on-paper memorization or continuous drilling.

The shift to digitalization regarding vocabulary learning methods is crucial, especially in the era of remote learning, where students learn primarily by themselves. Naturally, doing things alone is not easy because one would need a very high and constant level of motivation, interest, and commitment to see it through. This is where the benefits of digitalization in vocabulary learning will manifest. The heightened level of student engagement and interest in learning grammar using the digital-based vocabulary learning model is one of the most apparent positive changes that have been made to the learning process. In addition, the model also offers immediate feedback to its users (Tahir, Albakri, Adnan, et al., 2020). They do not have to wait for their teachers to provide feedback on the vocabulary learning activities they have done because the application we have in mind could be designed with pre-set feedback, similar to that of Telegram Bot.

Moreover, should they need feedback from their teachers, it can be done quickly through this application as it allows online communication with their teachers. At the same time, it allows the teachers to monitor and follow their students' progress easily. This application can reduce the physical contact between teachers and students by facilitating online meetings between teachers and students. This measure is helpful and effective in addressing the need for social distancing that is the norm during this pandemic-ridden era, ensuring that the teachers and students will continue to be connected.

3.2.3. Substitution Augmentation Modification Redefinition (SAMR) Model

This study's vocabulary learning model is based on the Substitution Augmentation Modification Redefinition (SAMR) Model developed by Puentedura (2013). The model consists of four stages which are arranged in the following order:

3.2.3.1. Substitution

This is the initial stage of technological integration in which technological means by way of digital tools will be the successor to learning tasks that would otherwise be performed without them. This stage is meant to get learners to familiarise themselves with technology and its capabilities for them to regard the technology and digital tools as practical learning tools that will better facilitate and enhance their learning capabilities and experiences.

3.2.3.2. Augmentation

The second stage focuses on augmenting and enhancing the learner's learning experience by using technology once students have become comfortable enough with technology and digital tools to the point where it has become a reliable tool with which they can entrust their learning. This is where students do not merely take and use existing technology for their learning as it is. Instead, they learn to adapt technology to create and facilitate new, more varied, and suitable ways of learning, such as creating images, pictures, and independent platforms and forums. These platforms enable them to discuss ideas freely, resolve problems, and even edit pre-existing materials to better suit themselves, in which teachers can participate.

3.2.3.3. Modification

The third stage seeks to transform a learning experience using technology rather than simply elevating it, as the former stage did. There is a limit, however, to how far it can go, which is using technology in the learning process to replace, substitute, and improve what has and could be done without technology.

3.2.3.4. Redefinition

The final stage focuses on cementing technology as a vital force in student learning. This is done by creating learning tasks that would not be possible without using technology, which will cement the position and role of technology and its applications as a step in the right direction when it comes to improving, transforming, and welcoming a new stage in the students' learning to prepare them for the future, in which technology will take center stage in their lives and in everything they do.

4. Research Methods

The research design, participants, materials and instruments, research procedure, and data analysis method for this study are underlined in this chapter.

4.1. Research design

The goal of this study is to develop a Malaysian model of pictorial vocabulary and the exploration of its effectiveness in helping students to learn English vocabulary. Its research design comprises a mixed methods research approach that employs a sequential explanatory strategy.

The Malaysian model of pictorial vocabulary is the independent variable (input) in this study, whereas the dependent variable (output) is the learning of the target words as stipulated in the SBELC. This study aims to investigate the link between the variables suggested by the researchers to determine if the Malaysian model of visual vocabulary is effective in helping the participants to widen their vocabulary knowledge.

4.2. Sample

The sample for this study is 30 lower secondary ESL students from various schools in Malaysia. Since it is crucial to fully monitor the factors potentially jeopardizing the study's validity (Yee, 2020), the students are chosen from numerous nationwide schools. These students should not have a connection or meet each other before the study so that they are not interacting when learning the target vocabulary using the Malaysian model of pictorial vocabulary. They are chosen using non-probability or convenient sampling, meaning that the participants are all the subjects available to the researchers (Zhang, 2020). The students also possess an average or poor English language proficiency based on their English test performance earlier.

In addition, 5 students have chosen for a pilot test. This test was subjected to a Cronbach Alpha internal consistency analysis. This type of reliability test assesses whether the items of a study could

maintain the same value upon repeated evaluation (Garcia & Weiss, 2020). Table 1 depicts the sampling strategy used in this investigation.

Table 1. Sampling procedure

Aspect	Explanation
Population	Lower secondary ESL students from various schools in Malaysia
Sample	30 Lower secondary ESL students from various schools in Malaysia
Sample selection	Non-probability or convenient sampling.
	Students come from different schools / have no contact with each other.
	Students possess an average or poor command of the English Language.
Pilot Test	Involves 5 students.
	Cronbach Alpha internal consistency analysis will be conducted.

4.3. Materials and instruments

The study will utilise the following instruments:

4.3.1. Malaysian Model of Pictorial Vocabulary

The proposed model for this study, a Malaysian model of pictorial vocabulary, is a model optimized to help ESL students to learn target words that the SBELC stipulates through WhatsApp, which is a prominent, popular, and highly versatile social messaging application. This choice was made because, with a 92% penetration level, WhatsApp is one of Malaysia's most active social network platforms.

The use of this tool is also justified by the fallibility of inferring the meanings of unknown words from pictures, an idea proposed by Lau (2020), and the acquisition of target vocabulary items by using both pictorial and written annotations as suggested by Mohd Tahir and Tunku Mohtar (2016).

To promote interactivity by using technology, the users of this model were asked to draw the images they can associate the target words with after using the model. It is believed that this will improve their learning and retention of the target words. This model is framed based on the Substitution Augmentation Modification Redefinition (SAMR) Model developed by Puentedura (2013) to ensure the impact of technology use on the teaching and learning process. The SAMR model is a popular model for evaluating technology integration and its influence on teaching and learning. The SAMR classification system splits technological innovation into four stages:

4.3.1.1. Substitution

Technology replaces the performing of learning tasks that were not conducted using a technological tool previously. The serialised creation of digital captions in both verbal and written forms transmitted through Wixsite is the representation of this stage in the model. The spelling of a target word, its meaning, and how it is used in sentences is included in these captions.

4.3.1.2. Augmentation

The second stage of this model illustrates how technology could augment or enhance a learning experience. This is exemplified by how the images of a target word and a soundbite of its pronunciation

could amplify the expression of a series of digital captions in the model while being transmitted through Wixsite to the point where students can comprehend it more easily.

4.3.1.3. Modification

In this study, the students are tasked with drawing suitable images or pictures representative of the target words they learned earlier through the Wixsite application. Instructions are provided in verbal and written forms. The students are guided in their drawing attempts using the annotations of the words. The students then rely on their imagination, creativity, and wits to draw the pictures or words that can represent the target words before capturing and uploading the image through Wixsite. These drawings can be compared against the image of the target word prepared beforehand in the Wixsite or with the teachers' help.

4.3.1.4. Redefinition

Redefinition is the last stage of the SAMR model. It is responsible for constructing learning tasks that would be impossible to create without technology. Without using any form of communicative or social technology, the collaboration of learners from around the globe could be established without them having to leave the comfort of their homes.

There are three steps to the model. The teacher begins by selecting the target words from the SBELC. These target words are separated into four groups, presented in one of these four modes:

i. Text mode (target words, categories, Malay equivalent, example of sentences).
ii. Text-picture mode (textual information as above, plus pictures to illustrate the target words).
iii. Text-sound mode (textual information as above, with the audio recording of how the target words are pronounced).
iv. Text-picture-sound mode (textual information as above; combined with the pictorial and audio elements).

Words from various parts of speech (nouns, verbs, adjectives) are included in each mode. Students were also administered a pre-vocabulary assessment at this stage.

During the second or intervention stage, teachers have used Wixsite containing these target words every day (Monday through Friday) at a different time twice a day. This activity lasts for four weeks, with a different style of vocabulary presentation used with the students each week. The students have subsequently studied the target words.

For the final stage, the students were given a test every Friday for four weeks following the Wixsite presentation on each of the four vocabulary modes. Any gains or losses in the students' vocabulary will be compared across the various vocabulary modes that were recently presented. To better understand the four different vocabulary modes, they have experienced over the last four weeks, the students were interviewed and asked to complete a questionnaire to share and compare their insights on the effectiveness of these modes on their vocabulary learning.

4.3.2. Student Evaluation Form

After the study, a Student Evaluation Form has been issued to assess the participants' overall experiences using the Malaysian model of pictorial vocabulary learning and the variables that influence their perception, engagement, and performance. This form is distributed in a questionnaire form. The questionnaire consists of statements to which the participants must respond. They were requested to circle the numbers ranging from one to five that represent their replies for each statement on the Student's Evaluation Form (1 for totally disagree; 2 for disagree; 3 for neither agree nor disagree; 4 for agree; 5 for totally agree). This questionnaire contains closed-ended questions. As a result, it is easier and faster to fill in because the scoring of the responses is considerably more precise. The questionnaire is completed by reading the questions and then ticking the appropriate responses (Zhang, 2020).

4.3.3. Interview

The interview for this study takes the form of a standard oral questionnaire, in which the personal impression, perspectives, attitudes, interests, and thoughts about the themes of this study are addressed through related questions. The interview arrangements were prepared beforehand to ensure the smoothness of its execution. The participants are informed on what to expect in advance. Due to the age of the interviewees (13-15 years old), sufficient guidelines were provided to them before the interview begins. By guidelines, we refer to the interview's format, length, the types of questions asked, and the responses expected from the interviewees (Wan, 2020).

4.4. Research Procedure

Following their exposure to the Malaysian model of visual vocabulary to learn English vocabulary in a virtual learning context, all participants have been given a Student Evaluation Form. This step is meant to gauge their overall impressions of the Malaysian model of visual vocabulary learning that they utilised to improve their vocabulary. Then, a select few participants were interviewed to delve further into their responses to obtain richer evidence to substantiate the conclusions from the Student Evaluation Form.

Before initiating the formal research, the researchers have conducted a pilot study to scour any potential faults or failures with the Malaysian model of pictorial vocabulary learning, the questionnaire, and the interview questions. During the pilot stage, a few questions were asked, such as "Is the pictorial vocabulary acquisition utilising social messaging application straightforward and easy to use?" "Are the questions in the student's evaluation form clear?" "Can you answer all the interview questions?" and so on. In addition, the participants were asked for their feedback and recommendations to improve the Malaysian model of pictorial vocabulary learning, the questionnaire, and the interview questions. This pilot study is intended to improve the investigators' model and materials and address issues that may arise during the formal study.

The information from the Student Evaluation Form and the interview sessions are subjected to qualitative and quantitative analysis and comparison. The reason for both these data analysis methods is the pragmatic reasons it was founded on earlier, for being outcome-oriented, problem-centered, and

pluralistic (Garcia & Weiss, 2020). Collecting data concurrently or sequentially as the study progresses is necessary to explain the research problems. Data collection frequently involves numerical and textual data, thus ensuring that both quantitative and qualitative data are reflected in the final database.

4.5. Quantitative Data Analysis

SPSS version 26 statistical software was used to manage the quantitative data. The findings reveal whether there is a significant improvement among the participants after utilising the Malaysian model of pictorial vocabulary upon the study's completion (Tahir, Albakri, Adnan, Shah, et al., 2020). The findings from the Student Evaluation Form were assessed descriptively in terms of the mean and standard deviation of the responses for each item. For fear of the scores being less accurate, the participants' degree of agreement is not turned into scores. The participants have filled out the form with their responses so that the researchers can collect the quantitative data for the study.

4.6. Qualitative Data Analysis

One of the significant sources of qualitative data in this study would be the additional information from the students about their perspectives and expectations on learning the target vocabulary using the interview sessions which have been administered at the end of the study. The results from the sessions were thematically classified or coded accordingly. These sessions were also conducted on chosen students, whereby the responses are orally delivered for easy documentation and transcription by the interviewers. This measure has helped the researchers qualitatively acquire rich data while explaining the observations from the quantitative data.

5. Findings

Table 2. Pre- and post-test descriptive statistics

Group	Mean Score (M)	Standard Deviation (SD)	M Difference	Total Improvement Score (%)
Pre-Test (N=30)	18.20	1.42	25.43	139.73
Post-Test (N=30)	43.63	2.06		

Table 2 presents the descriptive pre- and post-test data for the group. The experimental group's pre-test mean score was M = 18.20. The post-test mean score, M = 43.63, reflects the group's improved comprehension of the target vocabulary because of the use of Malaysian model of pictorial vocabulary. This demonstrates a 25.43 improvement (M difference) for the experimental group between the pre- and post-tests. Additionally, the percentage score for the total improvement has increased to 139.73 percent.

Based on the results of the student interview involving 15 students from the experimental group, all students indicated that they have enjoyed learning new words through the Malaysian model pictorial vocabulary. Fourteen of them said that they have enjoyed learning vocabulary using the model because it was fun. In addition, six of them believed that the model was comprehensible and easy to use as the

medium to learn vocabulary. Not only that, ten students also revealed that the model was helpful and enable them to learn vocabulary in different ways.

Furthermore, nine students mentioned that the model was convenient since it was easy to understand, interesting as well as offered pictorial and textual information. Not only that, eleven students also applauded the convenience of the model, as students did not have to find the meaning of a word from a physical dictionary, and they can repeatedly access the Wixsite if they have yet to understand it. However, majority of them (thirteen students) discloses their frustrations about their internet connection while using the Wixsite.

The findings of this study will have a nationwide impact as it ensures that all students have access to education, particularly in this age of remote and online learning. This matter is one of the goals of the Malaysia Education Blueprint (MEB) 2013-2025, which aims "towards the provision of education for all Malaysian children [to enable] the nation to achieve various successes" (Ministry of Education Malaysia, 2019). Furthermore, this research addresses the country's need for digital and technological integration in the curriculum through "the development and application of 21st Century curriculum and assessment" (Ministry of Education Malaysia, 2019, p. 1) that will be "in compliance with the current implementation of 21st Century pedagogical skills that aim to further enhance the pupils' learning through stimulating teaching and learning processes." (Ministry of Education Malaysia, 2019, pp. 28-29).

6.   Conclusion

In conclusion, the approach used in this study may provide continuous access to education to students significantly impacted by the COVID-19 pandemic as schools and traditional face-to-face schooling come to a standstill due to the country's escalating COVID-19 cases. The country's future workforce will be exposed to using digital tools through this pictorial vocabulary learning model. Finally, this research may have an impact on the entire country. It ensures that all students have access to education, particularly in this era of remote and virtual learning, which is one of the goals of the Malaysia Education Blueprint (MEB) 2013-2025.

Future studies could look deeper into the specific aspects of the proposed model that might have helped or hindered the acquisition of new English vocabulary, such as the audio-visual materials used by this model. Additional studies could look at external factors and how these factors might affect students' acquisition of new English vocabulary using this proposed model. These factors include the students' perception of technology and familiarity with the platform, in this case, Wixsite. Other factors could consist of the students' Internet connectivity and accessibility. Such studies could also look at the device factors, whether the availability of devices or their conditions could play a role in determining the students' achievement after using this proposed model.

Acknowledgments

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