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The Effectiveness of Holistic Innovative Kit (Hi-Kit) in Improving Student's Writing Skills

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Abstract

The Fourth Industrial Revolution has brought about changes that have also affected the needs of learners. To address the needs of TVET learners in learning English, especially in writing, the Holistic Innovative Kit (Hi-Kit), an innovative teaching and learning tool, was developed. The purpose of this study is to determine how well Hi-Kit works in mixed-ability classrooms to enhance academic achievement in writing tests and students' attitudes toward learning the English language. For this action research, 41 students pursuing a diploma in tourism management were chosen. Pre-post test scores on the same topic were compared using t-tests, and the correlation between students' SPM English grades and change scores was determined using Pearson Correlation analysis. The students' attitudes about Hi-Kit being utilized in their English language classes were also obtained through the use of a questionnaire. The results indicate a noteworthy enhancement in the test scores of the students, particularly those with lower proficiency levels, and a noteworthy association between the students' SPM English grade and their test change scores. Additionally, the students' attitudes toward the use of Hi-Kit were positive. To ensure an efficient and excellent learning environment that meets the needs of diverse students in accordance with the Education Revolution 5.0, educators must be creative in integrating various teaching instructions or approaches into the classroom. As a result, this innovative teaching and learning tool, Hi-Kit, should be further promoted in other language teaching contexts.

Keywords: - Mixed-ability classroom, innovative teaching instruction, ESL

1. Introduction

1.1 Problem Statement

Most students who further their studies in polytechnic are mostly not academically excellent students as naturally, most SPM top scorers will choose to further their studies in matriculation or local university. In addition, the students' academic data referred to in the polytechnic SPMP system inferred that most students did not score well, especially in the English subject for their SPM examination.

Referring to Fig. 1, more than half of the Session II 2022/2023 students from one of the Polytechnic in Malaysia scored C and below for English in their SPM with Grade D recording the highest percentage, 36.7% followed by Grade E, 23.1% and Grade C 16.2%.

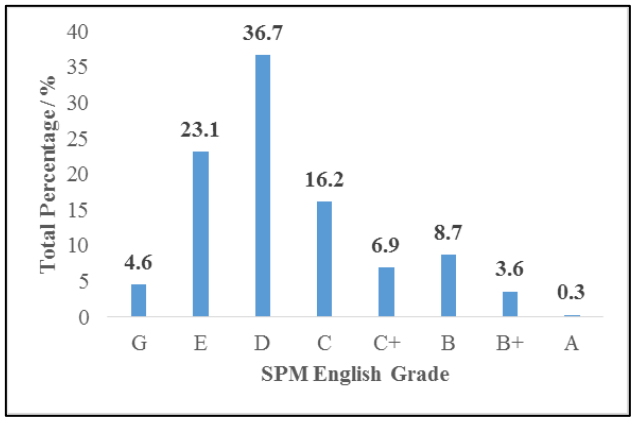

Fig. 1. Overall students' SPM English grades for Session II 2022/2023

In addition, the English proficiency of the students is getting worse as illustrated in Fig. 2. The skewness of the graphs for Semester 1 and Semester 2 is more skewed to the right with a distribution in which more values are concentrated on the left side (Lower grades such as E and G) of the graph. Comparing the lower semester students (Semester 1 & 2) with the higher semester students (Semester 4 & 5), it was found that fewer lower semester students scored grades B and above. This indicates that the students' English proficiency is deterred by the semester.

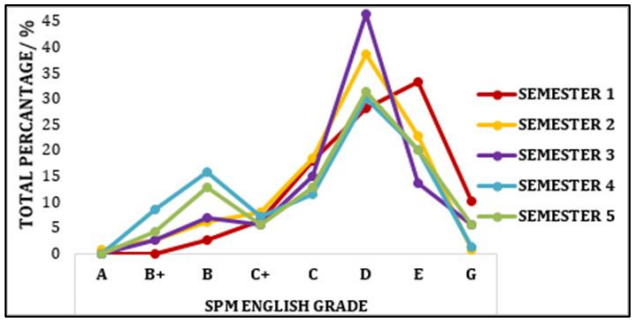

Fig. 2. Students' SPM English grade for Session II 2022/2023 by semester

Thus, the needs of the learners have changed concurrently with the Industrial Revolution 4.0. Therefore, educators are urged to be more innovative in using classroom instructions to meet the needs of the TVET especially to motivate and help the lower proficiency students in achieving the outlined learning outcomes in the student's English writing skills.

In the field of teaching and learning of English language, technological instructions or tools have emerged as a pivotal means of facilitating differentiated instruction, enabling educators to meet the diverse needs of learners with varying language proficiencies, learning styles, and cultural backgrounds. Digital platforms and applications, such as adaptive learning software, can tailor content and pacing to individual students, offering personalised pathways through language exercises, multimedia resources, and interactive tasks. For instance, language learning apps like Duolingo or Babbel adapt to users' responses, focusing on areas that require further practice, thereby providing a customised learning experience (Vesselinov & Grego, 2012; Godwin-Jones, 2017). Moreover, virtual classrooms and educational websites offer a plethora of resources, including videos, podcasts, and reading materials that cater to different interests and levels of understanding, making it possible for teachers to assign tasks that are both engaging and appropriately challenging for each student (Sung, Chang, & Liu, 2016). Collaboration tools and online forums facilitate peer interactions among students of varying language abilities, promoting a supportive learning community (Lai & Zheng, 2018). These technological innovations not only enhance accessibility to language learning resources but also empower students to take charge of their learning journey, fostering a more inclusive and effective ELL environment.

Game-based learning means using games in educational contexts to reach educational objectives (Connolly et al., 2012; Li & Tsai, 2013; All et al., 2014; Westera, 2015; Boyle et al., 2016; McLaren et al., 2017). Digital game-based learning and traditional game-based learning are having a powerful impact on adult education, social and cultural considerations, as well as the future development of learning. It could be beneficial for both learner and educators (Sarva et al., 2024). In addition, numerous research suggested that game-based learning is effective in enhancing six general skills such as perceptual-motor, cognitive-verbal, problem-solving, information utilization, persistence, and human-human interaction. (Norman, 2011; Fabricatore, 2000; De Jong, 2010; Pollock et al., 2002; Miyake & Shah, 1999).

Therefore, to maximise the effectiveness of the process of English language teaching and learning in mixed-ability classrooms, a novel innovative education tool was designed based on the differentiated instruction model, hybrid learning/blended learning model and game-based learning model as suggested its effectiveness through literature. The Holistic Innovative Kit (Hi-Kit) was designed and served as a one-stop-center to assist educators and students in an English learning classroom. The Lesson Kit was completed with a series of interesting and interactive learning tools that the educators and students could use based on the students' proficiency levels in learning processes/procedures and writing skills outlined in the Communicative English 2 syllabus. Thus, this educational tool was designed to assist especially the lower proficiency students.

1.2 Research Objectives

This study aimed to identify the effectiveness of Hi-Kit in improving academic achievement and the students' attitudes toward learning the English language in mixed-ability classrooms.

1.3 Research Questions

This research attempts to address the following questions:

i. What is the outcome of the Holistic Innovative Kit (Hi-Kit) on the student's written test?
ii. What are the students' attitudes toward the use of Hi-Kit in the classroom?

1.4 Significance of Research

To assess the effectiveness of a novel innovative educational tool with potential applicability across all polytechnic institutions in Malaysia, this study endeavours to enhance the teaching and learning (T&L) processes within the compulsory course Communicative English 2. The investigation aims to identify methods through which the tool, known as Hi-Kit, can elevate the T&L experience to a more dynamic and proficient level. Additionally, this study seeks to offer recommendations for continuous quality improvement (CQI) to augment the effectiveness of Hi-Kit, thereby contributing to the ongoing enhancement of pedagogical practices within the educational context.

2. Methodology

2.1 The Hi-Kit

The Hi-Kit, an innovative educational tool, consists of five components namely the grammar wheels, A Pastry Channel for Dummies, an innovative lesson plan, worksheets and Oh Snap! play cards. The Language Wheel is a tool that assists the weaker students in forming their sentences when trying to achieve the outcome of the lesson in describing a process. The language wheel breaks into different grammar parts when forming sentences in passive voice and sequence connectors, a very common part of speech used when describing a process or procedure. With this language wheel, students could form their sentences easily by selecting the correct language form by reading the sentence from the inner wheel towards the other wheel.

A Pastry Channel for Dummies is a series of cooking videos that were carefully crafted based on the Baking & Pastries syllabus of the Diploma in Food Service Halal (DHF). The videos were used in the class as the stimulus for the students when learning to elaborate on or describe processes and procedures that related to their field of study (Tourism and Hospitality). Seven baking videos were included in this cooking channel found on YouTube and it served as a more interesting stimulus to the students as it is in the form of videos instead of worksheets.

To further assist the lecturer in fully utilising all the learning tools in the lesson kit, an innovative lesson plan was prepared. In the lesson plan, a step-by-step guide was provided for executing the innovative activity in the lesson. With this lesson plan, the lecturer will know how, when, and what to do/use during the lesson. The students and lecturer's activities, worksheets, as well as alternative activities, were clearly explained in the lesson plan.

Oh, Snap! Play Cards is an enrichment play card that innovated from the card game name 'SNAP'. The playing rules are exactly like the ordinary 'SNAP' card game. The only difference is that instead of racing among the players to put their hand down on the cards (snap) when they see a match of numbers of two cards, players 'snap' when they see a match of the draw affixes card and root word card.

2.2 Research Method

The action research design was chosen as the research method for this research as it fits the nature of classroom studies that aim to simultaneously investigate the effectiveness of new T&L tools that might solve the problem of ESL in mixed-ability classrooms of polytechnics. To quote from the NU Institutional Review Board (2023), action research uses non-probability sampling. Therefore, a convenience sampling method was adopted in this research as the samples were taken from the classrooms of two researchers in two respective Malaysian Polytechnics. The respondents consisted of a total of 41 Diploma in Tourism Management (DUP) students who enrolled in the DUE30022 Communicative English 2 course. Since there are only 1 class of DUP students in Polytechnic A, therefore, all DUP students, 12 students, were selected as the respondents. As in Polytechnic B, there were two classes of DUP students. However, 1 class, 29 students, with a similar biographic background to Polytechnic A was selected. The purpose of choosing two different classrooms from two polytechnics is to increase the trustworthiness by providing multiple sources of data to analyse and confirm evidence for findings (Dosemagen & Schwalbach, 2019).

Pre-tests and post-tests serve as data collection instruments to capture the students' scores and performance in the writing task that will yield findings to answer Research Question 1 regarding the outcome of the innovative educational tool. Scores collected before and after the use of Hi-Kit were analysed by SPSS. In addition, a Five- Level-Likert-Scale questionnaires, in the form of Google Forms, were distributed online to collect data in the hope of bearing answers to Research Question 2 on the student's attitude toward the use of Hi-Kit.

3. Result and Discussion

3.1 Improve Academic Performance

The research was carried out to identify the effectiveness of Hi-Kit, an innovative educational tool, and the data inferred that this innovation improves students' performance in their English written tests.

Table 1 portrayed that overall, there is a great improvement in the students' average marks in the written test respondents who have experienced the innovative activity based on the overall change score, of 27.12%. The overall average marks have improved from Grade C+ (pre-test, 57.29%) to Grade A (post-test, 84.41%).

Table 1. Average test scores

Group	Average Marks (%)		
	Pre-Test	Post-Test	Change Scores
Polytechnic A	61.58	78.83	17.25
Polytechnic B	57.45	86.36	28.91
Overall	**57.29**	**84.41**	**27.12**

The change scores showed that this activity is more effective among Polytechnic B students (28.91%) compared to Polytechnic A students (17.25%).

Fig. 3 showed that all low, intermediate & high students had significant improvement in their test change scores with low SPM English cluster students marking the highest average change score at 30.46%. The graph also inferred that students in the low SPM English cluster's average chance score were more than double the average change score for students in the high SPM English cluster. Therefore, it can be concluded that this innovation has significantly improved the student's performance in their English written tests after the implementation of this innovative activity. In addition, data showed that this innovative activity is more effective among students with low English proficiency.

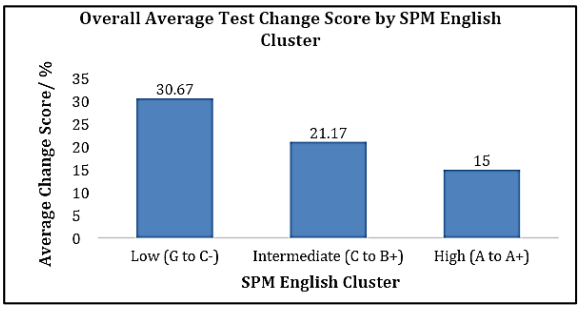

Fig. 3. Overall average test change score by Students' SPM English cluster

Table 2 shows the summary of the paired t-test analysis on the pre-test-post-test scores obtained from two polytechnics that have implemented the innovative activity. Although both institutions showed a significant difference in their mean scores since the p=0.000 and less than 0.05, Polytechnic B (31.207) recorded a better mean difference score compared to Polytechnic A (17.250). The overall mean score recorded a significant difference in the mean scores (27.122) with the p=0.000 ($p < 0.05$). Therefore, there is a significant difference in mean scores before and after the implementation of the innovation among the institutions.

Table 2. Pre-test-post-test paired sample t-test analysis

Pre-Test – Post-Test	Mean	SD	T	Df	Sig.
Polytechnic A	-17.250	7.899	-7.565	11	0.000**
Polytechnic B	-31.207	8.623	-19.485	28	0.000**
Overall	**-27.122**	**10.515**	**-16.516**	**40**	**0.000****

Note: ** Significant level at 0.05

Data in Table 3 stated that there is a significant correlation between SPM English grade and post-test scores for the students as (r = 0.322, P= 0.000) P<0.05. As the Pearson correlation coefficient is at a weak 0.322, there is a moderate positive correlation between the two variables. This indicates that the higher the student's SPM English grade, the higher the post-test scores the students obtained.

Table 3. Pearson correlation analysis between SPM English grade & post-test score

		SPM English Grade	Post-Test Score
SPM English Grade	Pearson Correlation	1	0.322**
	Sig. (1-tailed)		0.020
	N	41	41
Post-test Score	Pearson Correlation	0.322**	1
	Sig. (1-tailed)	0.020	
	N	41	41

**. Correlation is significant at the 0.01 level (1-tailed).

The analysis result from Table 4 shows that at the significant level of 0.05, the Pearson Correlation Coefficient is at r=-0.486 (p=0.001, p<0.05). Therefore, the data conclude that there is a moderate negative correlation between the students' SPM English grade and their test change scores. This indicates that the higher the student's SPM English grade, the less the test change score the student obtained.

Table 4. Pearson correlation analysis between SPM English grade & change score

		SPM English Grade	Change Score
SPM English Grade	Pearson Correlation	1	-0.486**
	Sig. (1-tailed)		0.001
	N	41	41
Change Score	Pearson Correlation	-0.486**	1
	Sig. (1-tailed)	0.001	
	N	41	41

**. Correlation is significant at the 0.01 level (1-tailed).

3.2 Improve Teaching and Learning Experience

A mini survey was executed after the implementation of this novel innovative educational tool, Hi-Kit, to identify the students' learning experience. Generally, the students reported that the innovative activity improved their learning experience.

Based on Fig. 4, all students agreed that they wanted more lessons to be taught using the innovative activity (80.5%: Strongly Agree, 19.5%: Agree).

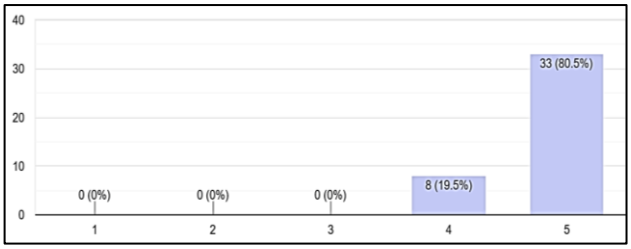

Fig. 4. Responses on more lessons to be taught this way

Fig. 5 and Fig. 6 provided positive responses on the outcome or mastery of knowledge of the students in the teaching and learning experience. Fig. 5 illustrated that all students found that the innovative activity helped them to learn better (78%: Strongly Agree, 22%: Agree) while Fig. 6 showed similar results on the students' responses to the activity helped them to perform better in the test (80.5%: Strongly Agree, 17.1%: Agree, 2.4%: Neutral).

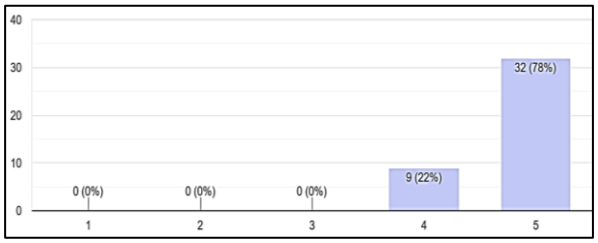

Fig. 5. Responses helped to learn better

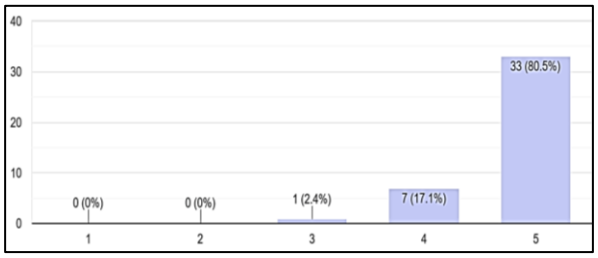

Fig. 6. Responses helped to perform better in the test

3.3 Improve Students' Learning Attitude

Fig. 7 and Fig. 8 provide feedback on the students' attitude toward the innovative activity and whether the innovative activity motivates them to learn.

Referring to Fig. 7, all students agreed that they liked the method (Hi-Kit) implemented (80.5%: Strongly Agree, 19.5%: Agree) while Figure 8 reported that most students think that the innovative activity was fun (75.6%: Strongly Agree, 22%: Agree, 2.4%: Neutral).

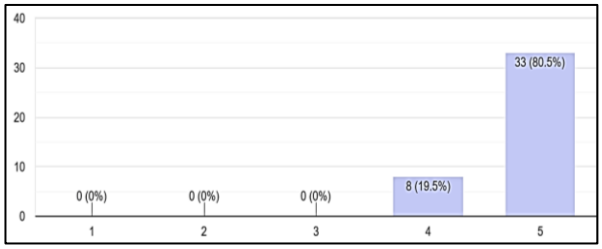

Fig. 7. Responses on preference for this method

Therefore, it can be concluded that Hi-Kit improves the students' learning attitude toward the English lesson.

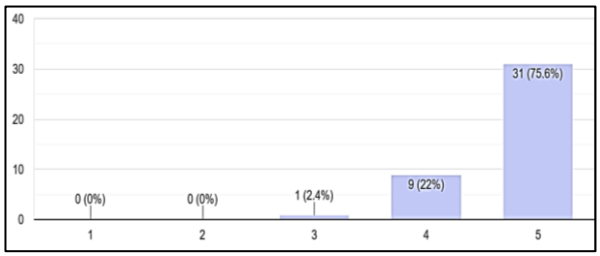

Fig. 8. Responses on fun

4. Conclusion

Overall, data shows that the novel innovative educational tool (Hi-Kit) elevated the teaching and learning process to a more effective and exciting level as it not only improves the students' performance in achieving the learning outcomes outlined in the syllabus but also propelled the students toward embracing a more positive attitude towards the learning of the English language. To ensure an efficient and excellent learning environment that meets the needs of diverse students in accordance with the Education Revolution 5.0, educators must be creative in integrating various teaching instructions or approaches into the classroom. As a result, this novel innovative educational tool (Hi-Kit) should be further promoted in other language teaching contexts.

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