ESL STUDENTS' ATTITUDES TOWARDS A DIGITAL BOARD GAME AND CHANGES IN THEIR SPEAKING MOTIVATION

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Abstract

This study investigated ESL students' attitudes towards the integration of digital board game in speaking lessons and changes in their motivation to speak English. A pre-experimental (one-group-pre-test and post-test) research design was implemented for the data collection procedure, involving 34 lower secondary school students, specifically Form 2 and Form 3 chosen through convenience sampling. The data collection included a pre-test and post-test questionnaire adapted from Speaking Motivation Scale (SMS) to measure students' motivation changes, while their attitudes towards the intervention were measured using the Technology Acceptance Model (TAM). The intervention was implemented in speaking lessons over two weeks involving three sessions with the digital board game integrated as the main material to facilitate students speaking practices. Genially, a platform offering various customizable templates was used as a medium for the digital board game application. The collected data were analysed using descriptive statistics and paired samples t-tests. The overall findings revealed that students demonstrated positive attitudes towards the digital board game across the TAM constructs namely, perceived ease of use, perceived usefulness, attitude towards use, and behavioural intention (M=3.98, SD=0.70). However, the paired samples t-test revealed no statistically significant shift in students' speaking motivation mean score before and after using the digital board game, t(33)=-1.52, p= .14, d = 0.25. These findings suggest that although digital board game was well accepted by students, no change in speaking motivation was detected after short-term exposure. Longer interventions with a control group are needed to examine this further.

Keyword(s): *ESL speaking, Digital Board Game, Technology Acceptance Model (TAM), Gamification, Speaking Motivation*

INTRODUCTION

Technological advancements have created a generation of learners with new interest and learning preferences. Lopez & Abadiano (2023) provide a thorough finding on how the new generation are classified as a new generation of learners that requires incorporation of multimodal teaching-learning approach to cater to their learning diversity. Over the years, various efforts from

educators have been implemented in the education field to ensure the lessons are aligned with students' interest as well as level.

In the context of English lesson which focuses on speaking skill, the use of English language in a situation that simulates real life communication or authentic communication is crucial alongside the other elements of an effective lesson (Richards & Rodgers, 2001). For students who come from an environment which English is not being used for daily interactions, classroom will be their main context in which they can use and practice using the language. Current technology advancements offer thousands of opportunities that anyone can access if they have devices as simple as smartphones to computers. Websites and platforms can be easily found via search engine, for example the platform Genially and Canva, which provides pre-existing templates of interactive puzzle, board games, quizzes and many more which are customizable to be adjusted according to our lesson or topic. These resources help boost students' participation while also facilitate their language learning.

Communicative Language Teaching (CLT) is one of the approaches which main concern is about creating a lesson where it is meaningful and involves real communication of the target language (Richards & Rodgers, 2001). Educators now have various options in what they want to apply in their lesson that would suit their students' need, specifically for technology-based resources.

This "trial and error" process of experimenting activity or material is crucial to ensure that it suits the students' interest and enhance motivation to participate in the lesson. Particularly for speaking skill in ESL context, due to most ESL students in the context of Malaysia lack the confidence to use the language verbally both outside and inside classrooms. To address this issue, there is a need to implement activities that integrate ICT features such as multimedia and interactivity which offers different type of input for students and encouraging peer-learning.

Previous studies related to integration of digital board games during English lessons especially focusing on ESL students in Malaysia, were limited (Fung & Min, 2016; Pittayanantakul & Phusawisot, 2024). Furthermore, majority of the previous studies mostly incorporated physical board games instead of a digital version. To generalize the outcome across two different version of board game is ineffective due to the distinct features between the two, especially in terms of incorporation of technology and customisability.

Therefore, this present paper aims to investigate ESL students' attitudes towards the integration of digital board game during English lessons and to examine the impact of digital board game on ESL students' motivation to speak English. To fulfil these aims, two research questions will be addressed:

1. What are ESL students' attitudes on the integration of digital board game during lessons?
2. Is there a significant difference in ESL students' speaking motivation before and after using the digital board game?

The following hypotheses were tested for RQ2:

H_0: There is no significant difference in ESL students' speaking motivation before and after using the digital board game.

H_1: There is a significant difference in ESL students' speaking motivation before and after using the digital board game.

LITERATURE REVIEW

Challenges in the Malaysian ESL Speaking Context

Saraswathy & Azlina (2021) whose study highlights the challenges that Malaysian ESL students faced in learning speaking skills in the English language defines speaking as a crucial skill in receiving and giving information, and in sharing among humans, in which speaking serves two primary purpose, transactional purpose; where users convey and exchange meaningful information, and interpersonal function, where speaking is used to create connections. The highlight on the challenges faced in speaking include in the aspect of limited vocabulary, shyness, and fear about being embarrassed. Upon highlighting these challenges, the study on this topic further encourages teachers to integrate interactivity and foster a more student-centred learning in English classrooms, as an effort to overcome the challenges faced by ESL students in Malaysia and in enhancing their interest and motivation to speak the English language. Dinçer's (2011) Speaking Motivation Scale (SMS) provides a comprehensive tool to measure learners' motivation to speak English through assessment of several crucial dimensions which include motivational intensity, willingness to speak and attitudes towards speaking English. This scale becomes an instrument in evaluating changes in learners' speaking motivation in ESL/EFL context, which is integrated in this study to achieve the targeted objectives, as it directly measures one of the variables outlined in the affective filter hypothesis.

Theoretical Framework

Krashen's (1982) Affective Filter Hypothesis, a component of the Monitor Model discusses the influence of affective variables on the process of second language acquisition. This hypothesis explains that attitudinal factors, including motivation, self-confidence, and anxiety function as a filter that determine to the extent of how much language input is received and processed by learners. Several studies over the past decade have been employed in explaining the relationship between affective variables and success in second language acquisition (Bunghanoy & Sumalinog, 2023; Lin, 2008). . This study measure motivation and attitude towards the tool only. Anxiety and self-confidence were not measured, so the hypothesis is used as background on why motivation matters, not as a model that was tested.

Mayer (2009) emphasized that effective learning can be sought from incorporating the use of both words and pictures rather than just words alone. This statement is the core assumption of the Multimedia Learning Theory. Cognitive Theory of Multimedia Learning (CTML) which expands the latter theory further explains of the core assumptions through three main elements which include dual-channel, limited-capacity and active-processing system. The understanding of dual channel is especially relevant to this study as it explains how humans process information or input from learning through separate auditory and visual channels. Influence from Multimedia Learning Theory in this research are specifically emphasize on the intervention which is the digital board game. The multimedia learning theory informed the design of the digital board game in this research (not tested) and has been recognized to be effective in ESL context in facilitating students' language learning process (Sayyadi et al., 2024). In assessing whether a material or tool is suitable for learners' needs, it is crucial that students are in favour of using the proposed tool for it to achieve its goal, which is to support students' language acquisition. Furthermore, even if the integration of technology in lessons appears interesting,

certain aspects such as user friendliness and usefulness can determine whether a tool is effective or the opposite.

A systematic review by Granić & Marangunić (2019) found that Technology Acceptance Model (TAM) is one of the models which has been utilized widely in scientific paradigm in examining acceptance and prediction of use of various kind of learning technology. In the initial development of TAM, the core assumption is that the attitude towards a system is the main factor on whether a person will use or reject the system based on perceived ease of use and perceived usefulness, however this was further refined by removing the attitude as the major construct and replaced by behavioural intention, in which, attitude is grouped under additional belief factors instead (Marangunić & Granić, 2015). Shin & Yunus (2021) whose study focuses on assessing primary students' attitudes towards the use of Flipgrid in learning English speaking skills, is one of the recent studies which utilized the Technology Acceptance Model (TAM), that evaluate attitudes based on four main aspects which include perceived ease of use, perceived usefulness, attitudes towards using and behavioural intention. In this study, TAM was used descriptively to measure student acceptance, not to test relationships between constructs.

Gamification through Digital Board Games in Second Language Learning

Kapp (2012) defines gamification in the context of education as application of game features and mechanisms as a support to solving problems and encouraging learning with emphasis on the consideration of appropriateness. A systematic review by Zhang and Hasim (2023) on recent research focusing on gamification in EFL/ESL instruction, reported that gamification has contributed to improving language skills and competency, affect students' attitudes in learning positively, and in cultivating an authentic language learning environment. These benefits are directly connected to the theories discussed in the earlier part of this section, where learning environment determines students' learning experiences, whereby it can affect aspects of motivation, anxiety, and confidence. The study further identified gamification components incorporated in various ESL/EFL instructions which includes feedback, quiz, points, rewards etc. These components are aligned with the structure of board games which is the focus of this study.

Board games is a broad term to types of games that require its players to move tokens or pieces across a designated board by following specific rules, examples of these games include Chess, Monopoly, and Snake and Ladders, which are considered as the most well-known traditional board games (Wong & Yunus, 2021). A quasi-experimental study on the effectiveness of Pick and Speak board game in improving speaking skills among primary school students by Michelle et al. (2021) revealed that the board game enhanced students' speaking skill while also helping them in learning grammatical structure. The effectiveness of board games especially in enhancing students' speaking skill is further researched through a systematic review by Wong & Yunus (2021), who revealed that board games improved students' speaking skills consisting of speaking competency, speaking motivation, and interpersonal interaction among students.

Digital board games are generally similar in most aspects to classic board games; however, it offers more multimodal features compared to the physical board games such as interactivity, visuals and sometimes sound effects. A quasi-experimental study focusing on Year 5 students by Wong & Yunus (2023) showed that students presented a positive attitude in learning to use English to communicate and along with improvement on their speaking skill while playing "Flippity", an online board game. Ahmad & Nur (2025) indicate that the utilisation of digitalized version of Snakes and Ladders game, in which Genially was used as the platform of digitalization, enhanced primary school students' vocabulary score. Other than findings on the effectiveness of

the tool, an improvement in engagement, enjoyment and motivation through students' feedback were also emphasized.

Gaps Identified in Existing Literature

In reviewing the past research, several gaps were identified which include limited coverage of research with secondary school students as the target group. The target group are seen as almost consistent to be focusing on primary school students or students from higher education. In Malaysia, learners are generally expected to have different learning outcomes which can be seen from the academic curriculum design (DSKP), which factors from the distinct cognitive development characteristics between learners' level or age. Another gap identified is in terms of how the main variable are measured, or more specifically although understanding students' motivation and perceptions are included as aims in the main objective of most of the past studies, these elements are only measured after the integration of the interventions. Lower secondary students in Sabah remain under-studied. Hence, this study investigates Form 2 and Form 3 students' attitudes towards a digital board game and examines whether their speaking motivation differs before and after using it.

METHODOLOGY

Research Design

This research adopts a quantitative approach with a pre-experimental design as its main method of meeting the aims of this study. The design follows the one-group pre-test and post-test procedure. Although a descriptive survey design is considered sufficient for the purpose of answering the first objective which is to investigate on students' attitude towards Digital Board Game in a speaking class, this choice stems from considering the aims of the second research objective which is to examine its impact on motivation to speak English among ESL secondary school students, the keyword of impact here signifies the need to observe possible changes in ESL students' motivation caused by the integration of the intervention, digital board game, hence the choice of applying a pre-experimental design with a before and after structure. As there was no control group, changes in motivation cannot be attributed solely to the intervention; history, maturation, testing and novelty effects are possible threats.

Participants and Sampling

The target population of this study involves lower form urban secondary school students in Sabah. A total of 34 participants were taken as a sample from the population, which were selected through convenience sampling, a non-probability sampling method, in which the sample are selected based on the factor of availability and proximity. Due to the low number of students in most of the classes in this school, the 34 participants chosen were a mix of Form 2 and Form 3 students from two different classes.

Research Instruments & Validity

The research instruments included two main source which are 31 items of Speaking Motivation Scale (SMS) adapted from Dinçer (2011), and 12 items of Technology Acceptance Model (TAM) adapted from Shin & Yunusr which measured students' attitude. Both of these questionnaires were measured using 5-point Likert scale, where participants provide their responses by stating their agreement within 5-point Likert scale indicating their agreement with the provided items or statements (1=Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly Agree).

The pre-intervention items consist of two sections, Section A for students' demographic information, and Section B involving 31 items of Speaking Motivation Scale (SMS) adapted from Dinçer (2011). Participants also took a post-intervention questionnaire consisting of three sections, which included the same demographic information section and Speaking Motivation Scale (SMS) as in pre-intervention stage. However, for this stage, there was Section C was added, involving 12 items adapted from Shin & Yunus (2021) consisting of items of Technology Acceptance Model (TAM) which measured students' attitude across four constructs, namely perceived ease of use, perceived usefulness, attitude towards use, and behavioural intention.

The adapted version of the questionnaire was ensured of its validity through review of two experts in the field of English as a Second Language (ESL). A content validation form is adopted from Yusoff (2019), which provided a comprehensive guide on content validation procedure and CVI (Content Validity Index) calculation. For two experts at least 0.80 is considered acceptable CVI values (Davis., 1992 as cited in Yusoff., 2019). Whereby, the CVI calculated for the instruments in this study was 0.90 for the adapted Speaking Motivation Scale (SMS) and 1.00 for the items measuring Technology Acceptance Model (TAM), indicating that the items validity has met the satisfactory level of content validity.

Intervention and Data Collection Procedure

The data collection process was conducted over a period of two weeks involving three stages; administration of the pre-intervention questionnaire, implementation of the digital board game as the intervention and administration of the post-intervention questionnaires. Prior to the distribution of the pre-intervention questionnaire, participants were informed of the background and research purposes. Next, the pre-intervention questionnaire was administered involving items to collect participants' demographic information and measure participants speaking motivation before the exposure of the intervention.

Following the pre-intervention questionnaire stage, participants underwent three 60-minute speaking lessons with the integration of the Genially digital board game. Each lesson focused specifically on speaking skill, covering different topics each time aligned with the scheme of work sequence provided by Ministry of Education Malaysia (KPM). However, due to school constraints on the use of students' personal devices and unavailability of the computer laboratory which would have allowed allocation of participants in small group to use the digital board game, the tool was used as a whole-class activity projected onto a single screen by the teacher. In each session, the teacher projected the Genially board; students took turns and answered a speaking prompt aloud while classmates responded.

Once all three sessions of intervention exposure had been completed, participants took a post-intervention questionnaire consisting of items to collect participants' demographic information and speaking motivation following the intervention. However, for this stage, items

which measured participants' attitude towards the digital board game across four constructs were added.

Data Analysis

The data collected from the instruments used was further analysed using two main quantitative data analysis techniques involving descriptive statistics and paired samples t-test which were conducted using IBM SPSS Statistics Version 32. Prior to conducting the test, the difference scores were tested for normality using the Shapiro-Wilk test which is presented in the results and findings section of this journal. Descriptive statistics which provide information on means and standard deviation of a data were utilized to fulfil the needs of RO1, to explore ESL students' attitudes towards the integration of digital board game in English lessons, categorized as Section C in the post-intervention questionnaire.

Meanwhile, a paired-samples t-test was conducted to analyse the data collected for RO2, to examine digital board game's impact on ESL students' motivation to speak English. With this data analysis technique, comparison was made between students' responses to Section B in the questionnaire during pre-intervention and post-intervention, where the possible changes in motivation were sought. Table 1 below presents the data analysis procedure summarization. While Table 2 presents the interpretation of mean score range following the equal interval method.

Table 1: *Data Analysis Procedure*

Research Questions	Instruments	Data Analysis Method
RQ1: What are ESL students' attitudes on the integration of digital board game during lessons?	Close ended questionnaire adapted from Shin & Yunus (2021)	Descriptive statistics (means and standard deviation)
RQ2: Is there a significant difference in ESL students' speaking motivation before and after using the digital board game?	Close-ended questionnaire adapted from Dinçer (2011)	Paired Samples t-test

Table 2: *Mean Score Interpretation*

Mean	Interpretation
1.00-1.80	Strongly Disagree
1.81-2.60	Disagree
2.61-3.40	Neutral
3.41-4.20	Agree
4.21-5.00	Strongly Agree

RESULTS

The aim of this study is to investigate ESL students' attitude towards the integration of digital board game during speaking lessons and to examine its impact on their motivation to speak English. To address these questions, descriptive statistics were conducted to analyse students'

attitude, while a paired samples t-test was employed to see the differences between pre-intervention and post-intervention motivation score. Before conducting the inferential analysis, the data underwent a test of normality using the Shapiro-Wilk test. *Figure 1* and *Figure 2* present the normality results of both the data.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PREMOTIVATION	.078	34	.200*	.964	34	.316

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Figure 1: *Shapiro-Wilk Test of Normality for Pre-Intervention Motivation*

Shapiro-Wilk test of normality was conducted to determine whether the mean of pre motivation data is normally distributed. The results on Figure 1 indicate that the study fail to reject the null hypothesis for pre-intervention motivation data (sig.value=0.32) whereby p>0.05 and concludes that data is normally distributed.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
POSTMOTIVATION	.120	34	.200*	.944	34	.080

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Figure 2: *Shapiro-Wilk Test of Normality for Post-Intervention Motivation*

Shapiro-Wilk test of normality was conducted to determine whether the mean of post-intervention motivation data is normally distributed. The results on Figure 2 indicates that the study fail to reject the null hypothesis for post motivation data (sig.value=0.08) whereby p>0.05 and concludes that data is normally distributed. The Shapiro-Wilk test on the difference scores was also non-significant, W = 0.944, p = 0.80, therefore the paired samples t-test was conducted.

Table 3: *Descriptive Statistics of Students' Attitudes Towards Digital Board Game Based on TAM Constructs*

Construct	N	Mean	Std. Deviation
Mean Perceived Ease of Use	34	3.85	0.78
Mean Perceived Usefulness	34	4.22	0.81
Mean Attitude Towards Use	34	4.10	0.79
Mean Behavioural Intention	34	3.72	0.82
Mean Attitude Overall	34	3.98	0.70
Valid N (listwise)	34		

Table 3 reveals an overall mean score (M=3.98) with the standard deviation of (SD=0.70) indicating an overall positive attitude among ESL students on the integration of digital board game during lessons. This is especially evident in the aspect of perceived usefulness and attitude towards use which receives the highest mean score among the other subsections. Based on the mean interpretation table, we can conclude that the average mean score calculated suggest that majority of the students have a positive attitude towards the integration of the digital board game as the score falls between high level agreement.

Table 4: *Descriptive Statistics of Students' Attitudes Towards Digital Board Game Based on Perceived Ease of Use*

Code	Items	N	Mean	Std. Deviation
CA1	I think using digital board game does not take too much time	34	3.44	0.83
CA2	Learning to use digital board game for my class activities was easy	34	4.21	0.84
CA3	Interacting with my classmates through digital board game was easy and not stressful.	34	3.91	1.08
	Mean Perceived Ease of Use	34	3.85	0.78
	Valid N (listwise)	34		

To further break down the overall result, Table 4 presents the descriptive statistics focusing specifically on items that measure students' attitude in terms of perceived ease of use of the intervention. Based on the data, the average mean score for this subsection reported that students generally agreed that the digital board game was easy to use (M=3.85, SD=0.78). CA2 and CA3 had the highest mean value which is (M= 4.21, SD=0.84) and (M=3.91, SD=1.08) respectively. The high scores on these two items suggest that students agree that learning to use the digital board game in class activities as easy and students also find interacting with classmates using the intervention as easy and not stressful. In comparison, the data show fewer positive responses for Item CA1 which focuses on time efficiency of the intervention, where it receives the lowest mean score (M=3.44, SD=0.83) but still falls within the agree range.

Table 5: *Descriptive Statistics of Students' Attitudes Towards Digital Board Game Based on Perceived Usefulness*

Code	Items	N	Mean	Std. Deviation
CB1	Learning using digital board game helped me to speak English	34	4.18	0.97
CB2	I think that using digital board game can help me to improve my English-speaking skill	34	4.26	0.83
CB3	The questions guide provided in the game and replies given by my classmates during playing digital board game were really useful.	34	4.24	0.92
	Mean Perceived Usefulness	34	4.22	0.81
	Valid N (listwise)	34		

Next, Table 5 presents the descriptive statistics focusing on perceived usefulness of the intervention among students. Based on the data, the average mean score for this subsection shows that students have positive attitude towards the digital board game in terms of its usefulness, where the mean score is in agree range (M=4.22, SD=0.81). All the items in this subsection receive high mean value whereby CB2 (M= 4.26, SD=0.83), CB3 (M=4.24, SD=0.92) and CB1 (M=4.18, SD=0.97)**.** The high mean score on these items indicates that students generally agree that using the intervention can help improve their English-speaking skill, and that the features of questions guide provided in the game and replies given by their classmates were useful. This suggests that the participants view the tool as useful to their learning experience.

Table 6: *Descriptive Statistics of Students' Attitudes Towards Digital Board Game Based on Attitude Towards Use*

	Items	N	Mean	Std. Deviation
CC1	I like using digital board game to learn how to speak English.	34	3.97	0.97
CC2	I have a positive attitude towards using digital board game in learning how to speak English.	34	4.26	0.83
CC3	I feel that using digital board game is a good way to learn how to speak English.	34	4.06	0.95
	Mean Attitude Towards Use	34	4.10	0.79
	Valid N (listwise)	34		

Table 6 presents descriptive statistics focusing on items that measure students' attitude towards use of the intervention. Based on the data, the average mean score for this subsection shows that students have positive attitude towards the digital board game, where the mean score is in agree range (M=4.10, SD=0.79). CC2 and CC3 had the highest mean value which is (M= 4.26, SD=0.83) and (M=4.06, SD=0.95) respectively. The high scores on these two items indicates that students have positive attitude towards use of digital board game in learning how to speak English, students also feel that using digital board game is a good way to learn how to speak English. Item CC1 which indicates whether students like using the intervention in learning how to speak in English, in comparison recorded fewer positive respond where it receives the lowest mean score (M=3.97, SD=0.97) but still falls within the agree range.

Table 7: *Descriptive Statistics of Students' Attitudes Towards Digital Board Game Based on Behavioural Intention*

	Items	N	Mean	Std. Deviation
CD1	I will continue to use digital board game to learn how to speak English.	34	3.47	0.86
CD2	Using digital board game helped me to become more willing to speak English.	34	3.94	0.95
CD3	When I use digital board game, I have more self-confidence to speak English.	34	3.76	1.05
	Mean Behavioural Intention	34	3.72	0.82
	Valid N (listwise)	34		

Table 7 presents the descriptive statistics focusing on items that measure students' behavioural intention towards the intervention. Based on the data, the average mean score for this subunit indicates that student's responses are in the range of agreeing that the digital board game was a useful tool that supported them during speaking lessons and that they will continue to use it in the future (M=3.72, SD=0.82). CD2 and CD3 had the highest mean value which is (M= 3.94, SD=0.95) and (M=3.76, SD=1.05) indicating that students find using digital board game as helpful in becoming more willing to speak English, it also shows that when using the intervention students have more self-confidence to speak English. In contrast, item CD1 which focuses on students' intention to use the tool again in the future, recorded the lowest mean score (M=3.47, SD= 0.86) but still falls within the agree range.

Paired Samples t-test

Table 8: *Paired Samples Statistics of Students' Motivation to Speak English pre and post intervention*

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-intervention Motivation	3.42	34	0.38	0.06
	Post-intervention Motivation	3.52	34	0.49	0.08

Table 9: *Paired Samples t-test of Students' Motivation to Speak English pre and post intervention*

	Paired Differences					t	df	Significance	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				One-Sided p	Two-Sided p
				Lower	Upper				
Pre-intervention Motivation - Post-intervention Motivation	-0.10	0.40	0.07	-0.25	0.03	-1.52	33	0.07	0.14

To find out whether there is a significant difference in students' motivation to speak English before and after using the digital board game during speaking lessons, a paired samples t-test were conducted. This data analysis was used to compare the overall pre-test and post-test motivation mean scores among students within 31 speaking motivation test items. The result is based on the hypotheses stated at the end of the Introduction.

Based on Table 8 and Table 9, the results of the paired samples t-test analysis indicated that there is no significant difference in ESL students' motivation to speak in English before and after the integration of digital board game. The post-test mean value (M=3.52 SD=0.49) recorded slightly higher compared to pre-test mean (M=3.42, SD=0.38). However, the difference was not considered statistically significant, t (33) = -1.52, p = .14 (two-tailed), Chohen's d = 0.25, 95% of CI of the mean difference (pre – post) [-0.25, 0.03]. Therefore, the null hypothesis stating that there is no significant difference in ESL students' motivation to speak in English before and

after the integration of digital board game during lesson fails to be rejected. Given the small sample (N =34), the study may not have been able to detect small effects.

DISCUSSION

ESL students' attitudes on the integration of digital board game during lessons

The findings of this study revealed an overall positive attitude of ESL students towards the integration of digital board game during English lessons, where the average mean score obtained for all dimensions of Technology Acceptance Model (TAM) was 3.98. This is especially evident in the aspect of perceived usefulness and attitude towards use which received the highest mean score among the other subsections. This suggests that the digital board game was well accepted among the participants consisting of lower secondary school students as a second language learning tool specifically for speaking skill. This aligns with findings by Wong & Yunus (2023) regarding "Flippity" an online board game, confirming that these digital tools present positive attitude in learning to use English to communicate.

The design of the digital board game was developed based on the principles of Mayer (2009) Multimedia Learning Theory with the incorporation of gamification elements where instead of sticking with the traditional speaking activities, this tool integrated varied types of media and elements such as interactivity, game points, and interactive questions. These elements align with Abeer et al.'s (2025) definition of gamified learning, as an instructional strategy that integrates game mechanics such as points, levels and badges or interactive challenges to instructional tool in the context of learning. However, these elements can be pointless if it serves no purpose in supporting learners' actual learning, especially if it adds up more as a hindrance. Hence the significance of using Technology Acceptance Model to gain insights into students' attitude towards the digital board game especially on the aspects of user-friendliness, and usefulness related to students speaking lessons, which directly explain whether students accept the intervention as a supporting tool for their speaking skill.

Therefore, in this study, the positive responses on each of the Technology Acceptance Model constructs indicate that students view the digital board game as accessible and beneficial for speaking lessons. This suggests that the multimedia and gamified features of the digital board game were not merely for aesthetic purposes but served their purpose as a supporting element to their learning experience, by creating a fun learning environment. This finding is crucial as part of material development process as students' attitude or perception towards a material or lesson determine their learning process, as explained in Krashen (1982) Affective Filter Hypothesis, attitudinal factors affect how much input is received or processed during second language acquisition. Thus, the positive attitude among students towards the intervention suggests that the game was well received. However, because the affective filter was not measured, this study cannot show that it was lowered.

However, the item within the construct perceived ease of use revealed the time efficiency aspect of the digital board game, where this item yields the lowest mean score among other items. During the session of using the digital board game, lesson time was sometimes not sufficient for all students to take part in. Especially since the digital board game were played as a whole-class activity rather than in small groups, like how board games are usually played. This pedagogical alternative was applied as students were prohibited to bring their own devices, furthermore even though the school provides a computer lab, it was often pre-booked for other core academic subjects that are more prioritized. This highlights the common challenges faced

by educators in integrating ICT in lessons, where resource constraints and restrictions limit the potential for incorporating digital tools in supporting students learning experiences.

ESL students' motivation to speak English through the integration of digital board game during lessons

Motivation was outlined as one of the variables that affect students learning based on the Affective Filter Hypothesis, which aligns with the second research question this study aims to find out. Based on the findings, although a small difference in the mean score was found, there was no statistically significant difference in ESL students' motivation to speak in English before and after the integration of digital board game. This finding contrasts with Huseinović's (2023) study, which found a significant impact of the implementation of gamification strategies in learning English as a foreign language on students' motivation, that correlates with their overall success in EFL learning and academic achievement but with the focus on higher education settings. Similarly, Tsai (2024) reported that gamified learning environment also effectively enhanced EFL learners' motivation and engagement in learning English as a foreign language context.

The result of the discrepancy between current research and previous research may possibly be related to the duration of the intervention exposure, although this was not tested. Although it is evident that previous findings shows trends in effectiveness of gamification in enhancing learners' motivation, a systematic review focusing on reviewing recent research related to gamified EFL/ESL instruction, as well as its benefits, drawbacks and gamification elements by Zhang and Hasim (2023) highlights that the effectiveness of gamification on learning depends on factors such as implementations, learning context and duration of exposure of the intervention. Hence, even with the positive attitude recorded among students, in the case of motivational changes, it might require longer exposure to the intervention implementation before any statistically significant differences can be observed.

The nature of board games in general is inherently social, where it is used to spend time among friends or family which foster authentic and real-life communications. This mechanism is aligned with the Communicative Language Teaching (CLT) approaches as explain in Richard & Rodgers (2001). The initial idea of incorporating the board game in speaking lessons revolves around this connection, where it aims to create not only a fun learning environment but also to mirror real-life communications in ESL lessons, rich in peer-to-peer communication. However, this target was barely achieved as the game was incorporated in large group setting, which potentially may have contributed to the lack of changes in students speaking motivation after using the intervention.

Students reported feeling more willing and confident to speak English (CD2 M = 3.94; CD3 M = 3.76), yet motivation scores did not change significantly. Possible explanations include novelty or social desirability in the post-test attitude responses, a scale that is not sensitive to short-term change, the short duration, and the whole-class format. These explanations were not tested. Despite no statistically significant differences in students' pre-test and post-test motivation were found in this study, the small increase in the mean score (0.10) was not statistically significant and should not be interpreted as evidence of change in students' motivation to speak English. Future studies that involve longer periods of use of the intervention, as well as repeated implementation, may provide further data on the tool's function as a support for learners' speaking motivation.

CONCLUSION

To conclude, this study aims to investigate ESL students' attitude towards the integration of digital board game as well as to see if there are any changes in their motivation to speak English before and after using the intervention. Overall, the findings show students positive attitude towards the digital board game across categories such as perceive ease of use, usefulness, attitude towards use and behavioural intention,indicating good acceptance of the tool to support to ESL speaking lessons. However, despite the positive attitudes, the present study also found that there are no statistically significant differences in terms of students' motivation to speak English before and after using the digital board game, this suggests that changes in students' speaking motivation may require a more sustained instructional process rather than expecting an immediate change after short term application.

This study is significant as it provides empirical evidence on how well accepted a digital board game being integrated in ESL speaking lessons is among students in lower secondary school. Through the finding, the integration of digital board game in an English lesson can be enhanced or improved further based on the feedback received from the learner themselves. Furthermore, it also provides insights on the limitations on the implementation of gamification in short-term speaking intervention and the need of longer duration of intervention exposure for a significant change to be observed.

There are several limitations of this study which include, firstly, the quantitative nature of this research hinders detailed feedback or insights from students personally, which can be gauged through a qualitative research method. Future research should employ a mixed-method approach which would provide complement of a quantitative findings with a more subjective experience. Secondly, a longer duration on the implementation of the digital board game may provide different results for future researchers, especially on the aspect of students' motivation as one of the limitations of this study is employing only a short-term implementation. Finally, although all the language skills were integrated throughout the use of the intervention, the primary focus is on verbal communication, consequently this suggests a call for future research to focus on other skills. Other limitations include the one-group design without a control group, the small convenience sample, attitudes being measured only after the intervention, and the whole-class format.

Conflict of Interest

The authors declare no conflict of interest.

Author Contribution

The sole author conducted the fieldwork, prepared the literature review and methodology, organized and coded the qualitative data, conducted the analysis, and interpreted the findings.

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Ethics Statement

This study was conducted following ethical guidelines. Informed consent was obtained from all participants and their parents.

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