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Assessing the Effectiveness of Using Kahoot! to Improve Students' Engagement during Grammar Lessons

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ABSTRACT

This study examines the effectiveness of using Kahoot! as a gamification platform to enhance ESL students' engagement during grammar lessons. Based on the Gamification Acceptance Model (GAM), the study investigates in what way perceived utility, convenience of use, attitude toward gamification, skill engagement, and interaction engagement affect students' learning experiences. Using a mixed-method approach, this study included 41 first-semester diploma-level ESL students. Quantitative information was obtained through an adapted GAM 18-item questionnaire, and qualitative insights came from 2 semi-structured interviews conducted with 12 participants. The findings reveal that integrating Kahoot! into grammar instruction significantly improves

students' engagement, attitudes, and performance. This platform will help us in making passive lessons more interactive and entertaining while also fostering an interactive and engaging learning atmosphere. The quantitative analysis indicates that the perceived usefulness and ease of use of the platform is a direct reason for their positive attitude towards gamification. Qualitative analytics helped validate these insights by emphasizing the two major drivers behind engagement: skill-based and interactivity-based components. The present study illustrates the effectiveness of gamification in ESL classes, especially when it comes to teaching some difficult topics, such as grammar. It calls for wider adoption of Kahoot! in language acquisition to maximize interaction and results. In order to enhance the advantages of this strategy in promoting 21 century education, future studies should address its implementation in different educational settings and other language abilities.

Keywords: Gamification Acceptance Model (GAM), Kahoot!, grammar engagement, ESL motivation

INTRODUCTION

The demands of adapting 21st-century learning skills in this fast-paced educational setting are inevitable. Due to the recent unprecedented pandemic situation, Malaysia is no exception to the latest technology adaptation so that the students can continue their education despite many obstacles. According to Hiong (2017), good educators in 21st-century classrooms must be skilled in teaching and learning pedagogy and equipped with the latest information technology. It is important for an instructor to be equipped with the latest information technology so that the teaching and learning process will be informative and efficient. As Garba et al. (2015) emphasized, educators play a key role alongside technology in making 21st-century learning feasible.

Teaching and learning English as a Second Language (ESL) in Malaysia has undergone various challenges, particularly in teaching grammar, which is often seen as complex and difficult for learners (Hashim et al., 2019). While productive skills (speaking and writing) and receptive skills (listening and reading) are widely studied, the effectiveness of gamification in grammar learning remains underexplored. Gamification has emerged as a promising approach to enhance student engagement and motivation, both of which are crucial for successful second language acquisition. However, despite its growing popularity, there is limited research on how gamification—particularly through tools like Kahoot!—affects grammar learning outcomes in ESL classrooms. Moreover, existing studies have largely focused on gamification's general impact on student engagement, with fewer researches into better grammar retention and comprehension.

In order to address this gap, this study examines the effectiveness of gamification in teaching pharmacy students using Kahoot! by the Gamification Acceptance Model (GAM) to promote student involvement in grammar teachings. It also aims to investigate six hypotheses suggested in the GAM framework (Ab Rahman et al., 2018) to gain insight into the relationship between students' attitude on gamified learning. Through their exploration of these gaps, the study will advance knowledge of the impact that gamification has on ESL grammar learning, while also clarifying whether these learning benefits extend to long-term retention and student motivation.

LITERATURE REVIEW

Kahoot! in Language Learning

The history of language learning with computers can be traced back to the 1960s with Computer-Assisted Language Learning (CALL). However, the notable role that technology can take in every language classroom soon after has made such models an essential part of a language classroom, providing opportunities for improvement in learning experiences. The digital era, with huge emphasis on made use of technology, was the next hit in the education sector. Yet the COVID-19 pandemic accelerated this process, leading to a significant movement from traditional in-person instruction to online and hybrid learning environments. This transition underscored the critical importance of using interesting and interactive methods of instruction to keep students involved and engaged.

Despite the challenges created in this crisis, technology has become the main channel to maintain learning continuity. Multiple education applications and platforms appeared, enabling this process of change, and gamification was one of the most popular alternative assessment methods. The need for increased use of game-based learning (GBL) and digital game-based learning (DGBL) to more effective and interactive assessments than traditional paper-and-pencil based assessments is evident (Ghapar et al., 2024).

Despite its advantages, the shift to online learning during the pandemic posed significant challenges, including reduced motivation, limited interaction and student isolation. However, research has shown that integrating GBLM and DGBL into language learning can help address these challenges (Ghapar et al., 2024). Ab Rani and Nik Hassan (2024) also emphasized that game-based learning, when aligned with clear learning objectives and curriculum standards, can boost student participation, reduce boredom, and enhance learning outcomes. By incorporating well-structured game-based activities, educators can foster an engaging and effective learning environment, making digital learning more interactive and student-centered.

Kahoot! is one of the gamification platforms that allows instructors and learners to creatively create quizzes, effortlessly share them using various platforms whether mobile apps or desktop and play the quizzes simultaneously. Kahoot! has offered various constructive outlooks among learners in higher learning institutions for the past few years (Fuchs, 2022; López-Martínez et al., 2022; Wang & Tahir, 2020). Besides, Kahoot! has also encouraged positive behaviours among learners in the classroom as well as intrinsically motivating them to learn, specifically in a cooperative learning environment (Varannai et al., 2017; Zarzycka-Piskorz, 2016). In terms of language learning, precisely during grammar lessons, the integration of Kahoot! has also shown an improvement in learners' scores (Hashim et al., 2019).

Gamification Acceptance Model (GAM)

In investigating students' acceptance towards gamification and its outcome towards their engagement during lessons, Ab Rahman et al. (2018) has developed Gamification Acceptance Model (GAM) in which it is based on Technology Acceptance Model (TAM) with the omission of two constructs which are Behavioural Intention (BI) and Actual System Usage (U). This model

has proposed four constructs which are Perceived Usefulness (PU), Perceived Ease of Use (EOU), Attitude (A) and Student Engagement (SE) in which these constructs will positively or negatively influence one another.

Ab Rahman et al. (2018) further explained Perceived Usefulness (PU) can positively lead towards students' Perceived on Ease of Use (EOU) in which the positive impact of these two constructs can also lead to positive Attitude (A) among the students. In addition, it can be found that students' attitude towards gamification can influence their engagement during lessons, both skills as well as participation/interaction in the lesson (Ab Rahman et al., 2018).

Figure 1 illustrates the Gamification Acceptance Model (GAM) developed by Ab Rahman et al. (2018).

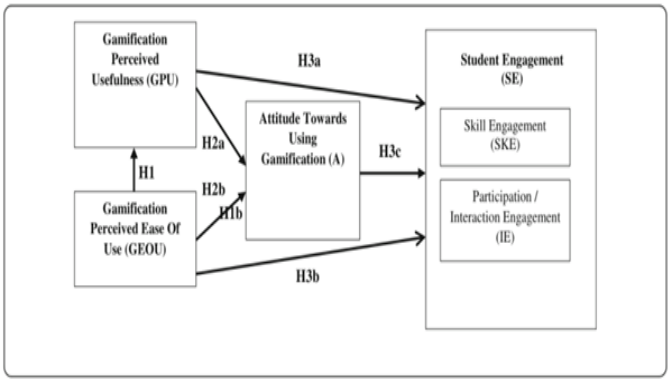

Figure 1. Gamification Acceptance Model (GAM) developed by Ab Rahman et al. (2018)

From this figure, Ab Rahman et al. (2018) has also proposed five hypotheses which are also depicted in Figure 1.

H1: Perceived ease of use has a positive influence on the students' perceived usefulness of gamification in learning.

H2a: Perceived usefulness has a positive influence on the students' attitude towards using gamification technology in learning.

H2b: Perceived ease of use has a positive influence on the students' attitude towards using gamification technology in learning.

H3a: Perceived usefulness has a positive influence on the students' engagement.

H3b: Perceived ease of use has a positive influence on the students' engagement.

H3c: Students' attitude towards using gamification technology has a positive influence on the students' engagement.

METHODOLOGY

Research Design

Participants

The study involved 41 first-semester diploma-level ESL students from a heterogeneous background. These students were selected due to their proximity to the researcher and their suitability for achieving the study's objectives. As part of their coursework, they were required to learn various grammatical components, including parts of speech, subject-verb agreement, noun-pronoun agreement, verb tenses, Yes/No and WH-questions, and transitional words and phrases. Some of these components, such as Yes/No and WH-questions and transitional words, were taught incidentally within other language skills like listening, reading, and speaking, while others were explicitly covered according to a structured weekly schedule. Since these grammar topics had been introduced in the Malaysian education syllabus from the primary level, the students in this study were expected to develop more advanced grammatical skills to increase their lexical density.

Instruments

In order to assess the effectiveness of Kahoot!, an adapted version of a Gamification Acceptance Model (GAM) based questionnaire from Ab Rahman et al. (2018) was used. The questionnaire was designed with 18 items organized into five constructs: perceived usefulness (4 items), perceived ease of use (4 items), attitude towards gamification technology (3 items), skill engagement (3 items) and participation /interactivity engagement (4 items). The contents of the questionnaire were created to assess students' perceptions of Kahoot! as in how much they interact with it, the amount of engagement it has, the influence it has on their learning experience.

The respondents were asked to rate each item on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) using a five-point Likert scale. The questionnaire consists of positively and negatively worded statements for response validity. Items included statements like "Using Kahoot! makes learning grammar more enjoyable" (perceived usefulness) and "I find it easy to use Kahoot! for grammar exercises" (perceived ease of use). Some statements were slightly adjusted, so they would make more sense in the context of English grammar lessons.

Internal consistency was assessed using Cronbach's alpha to evaluate the reliability and validity of the instrument. The results showed that the values of the threshold had the recommended limits illustrated by Šerbetar and Sedler (2009, as cited in Ab Rahman et al., 2018) and all constructs had the value that exceeded 0.7 and were confirmed for reliability and acceptability.

Data Collection Method

The data collection process was carried out in two phases: quantitative and qualitative. In the quantitative phase, students were assigned specific grammatical topics and were required to present them using creative visual organizers, under the supervision of the researchers. Following each presentation, Kahoot! sessions were conducted to assess the students' understanding of the grammatical topics. The number of sessions varied depending on the complexity of the topics.

Once all sessions were completed, students were asked to respond to the GAM-based questionnaire to evaluate the effectiveness of Kahoot! in enhancing engagement during grammar lessons.

Semi-structured interviews were used in the qualitative phase, to delve deeper into students' experiences of gamified learning. Twelve students were randomly chosen to take part in the interview using simple random sampling. Phase two was to identify which of the GAM constructs added the most towards Kahoot!'s approach to grammar instruction. The qualitative approach offered richer understanding of students' perceptions, motivations, and the general impression of gamification in their learning.

Data Analysis Method

Data analysis was carried out using both quantitative and qualitative methods. Questionnaire data were analysed in SPSS version 26, with descriptive analysis that examined the extent to which Kahoot! that impacted student engagement. The qualitative data from the semi-structured interviews were transcribed verbatim and analysed according to open coding and axial coding. Thematic analysis was performed deductively where open-ended responses were aligned with six hypotheses proposed by Ab Rahman et al. (2018) in the Gamification Acceptance Model (GAM). By employing such a detailed approach, the study sought to reveal the multifaceted nature of gamification effects facilitated by Kahoot! to keep students engaged in grammar lessons. The quantitative method delivers statistical perspectives on students' learning engagement with Kahoot! during grammar lessons while qualitative focuses on students' experiences. In addition, this study solely investigates engagement of students with Kahoot! instead of considering several multiple perspectives, making the mixed-method sufficient to attain reliable insights.

RESULTS AND DISCUSSION

Firstly, in addressing the effectiveness of using Kahoot! in improving students' engagement during grammar lessons, the results from the questionnaire adapted from Gamification Acceptance Model (GAM) were tabulated. Based on Table 1, it can be interpreted that the data was normally distributed as the value of mean was closed with the low value of standard deviation. The mean value for perceived usefulness items was 4.33 indicating that the respondents agreed that Kahoot! was usefully incorporated into grammar lessons and it has offered them enriching learning experiences.

Table 1. Perceived Usefulness Items

	N	Minimum	Maximum	Mean	Std. Deviation
Q1. Using Kahoot! during English grammar lesson improves my learning performance	41	3	5	4.41	.631
Q2. Using Kahoot! during English grammar lesson increases my learning outcome	41	2	5	4.22	.690

Q3. Using Kahoot! during English grammar lesson enhances my desire to produce desired result in my learning	41	3	5	4.37	.662
Q4. Using Kahoot! during English grammar lesson is useful in my learning	41	3	5	4.32	.722
Valid N (listwise)	41	2.75	5	4.33	.67625

Besides, Table 2 also shows that the data for perceived ease of use was normal as the value of mean which is 4.29 was close with low value of standard deviation of 0.68375 indicating that the data were distributed closely around the mean value. It can be safely concluded that the respondents agreed that incorporating Kahoot! English grammar lessons were easy to use.

Table 2. Perceived Ease of Use Items

	N	Minimum	Maximum	Mean	Std. Deviation
Q5. I find using Kahoot! during English grammar lesson to be flexible to be used	41	3	5	4.34	.728
Q6. Kahoot! functionality and interface during English grammar lesson is clear and understandable	41	3	5	4.34	.728
Q7. Interacting Kahoot! during English grammar lesson does not require a lot of my mental effort	41	3	5	4.07	.648
Q8. Overall, I believe that using Kahoot! during English grammar lesson is easy to use	41	3	5	4.41	.631
Valid N (listwise)	41	3	5	4.29	.68375

For the third construct in Gamification Acceptance Model (GAM) which is attitude, Table 3 shows a low value of standard deviation (0.719) indicating that data for attitude when using Kahoot! English grammar lessons were normally distributed. The mean value of 4.37 represented in Table 3 stipulated that the respondents portrayed a positive attitude when engaging with Kahoot! during English grammar lessons since it introduces a positive and encouraging learning environment.

Table 3. Attitude

	N	Minimum	Maximum	Mean	Std. Deviation
Q9. I think that using Kahoot! during English grammar lesson is a good idea	41	3	5	4.41	.631

Q10. I like learning English grammar lesson with Kahoot!	41	2	5	4.39	.737
Q11. I look forward to those aspects of my English grammar learning that require the use of Kahoot!	41	2	5	4.32	.789
Valid N (listwise)	41	2.33	5	4.37	.719

Finally, Table 4 illustrates the analysis of respondents' engagement towards incorporating Kahoot! during English grammar lessons. The low value of standard deviation (0.708143) depicts that the data was normally distributed indicating respondents' engagement when using Kahoot! English grammar lessons were positive. Moreover, the mean value of 4.30 illustrated in Table 4 shows that majority of the respondents agreed that Kahoot! encouraged them to engage actively in their English grammar lessons.

Table 4. Student Engagement

	N	Minimum	Maximum	Mean	Std. Deviation
Q12. Using Kahoot! during English grammar lesson encourages me in: Taking good notes in classroom	41	2	5	4.20	.782
Q13, Using Kahoot! during English grammar lesson encourages me in: Listening carefully in classroom	41	3	5	4.32	.610
Q14. Using Kahoot! during English grammar lesson encourages me in: Making sure to study on regular basis	41	2	5	4.22	.725
Q15. Using Kahoot! during English grammar lesson contributes to me in: Having fun in the classroom	41	3	5	4.51	.637

Q16. Using Kahoot! during English grammar lesson contributes to me in: Participating actively in small-group discussions	41	3	5	4.27	.742
Q17. Using Kahoot! during English grammar lesson contributes to me in: Helping fellow students	41	2	5	4.32	.789
Q18. Using Kahoot! during English grammar lesson contributes to me in: Asking questions when I did not understand the lecturer	41	3	5	4.27	.672
Valid N (listwise)	41	2.571429	5	4.30	0.708

For qualitative analysis, only five out of the six hypotheses proposed by Ab Rahman et al. (2018) in the Gamification Acceptance Model (GAM) during the students' engagement with Kahoot! during grammar lessons can be identified after the data from the students' feedback was tabulated. None of the respondents has indicated the first hypothesis (H1) which is Perceived Ease of Use has a positive influence on their Perceived Usefulness when Kahoot! was introduced during the English grammar lessons. This is similar to the finding by Ab Rahman et al. (2018) in which this variable has become a significant indicator to examine learners' attitude towards gamification. Besides, the absence of support for the first hypothesis (H1), which suggests that Perceived Ease of Use does not significantly influence Perceived Usefulness, indicates that students may prioritize other factors when engaging with gamified learning tools like Kahoot! in grammar lessons. Since ease of use did not strongly influence perceived usefulness, it suggests that students may focus more on engagement, motivation, or instructional content rather than just how easy a game-based tool is to use which similar with Game-Based Learning Model (GBLM) framework proposed by Ghapar et al. (2024). From a Digital Game-Based Learning (DGBL) perspective, digital learning environments should not only be accessible but also interactive, immersive, and aligned with clear learning objectives to be effective. The finding reinforces the idea that while usability is important, student engagement, motivation, and perceived learning benefits play a bigger role in digital game-based learning success (Ghapar et al., 2024).

Furthermore, the second hypothesis which is Perceived Usefulness has a positive influence on the students' attitude (H2a) can be identified in S3, S8 and S11 feedbacks. S3 said this application brings enjoyment to him and he added Kahoot! has a lot of questions *and make me think carefully*

before answer the questions. S8 further asserted that he *feels excited in the time of using it,* although he sometimes was unable to *follow the flow of the game because it was too fast and if someone interrupt me*. However, he still believed Kahoot! is *one of the best way to learning* (English grammar). Besides, S11 also believed that Kahoot! is *the best application to people that want to learn English and also improve English*. She further added that she can *improve my English more better and give me good experience when I play Kahoot!.* Wang and Tahir (2020) accentuated similar finding as attitude, along with other variables such as learning performance and motivation, has impacted positively after the introduction of Kahoot! as one of the online formative assessments. This has allowed learners to develop their cognitive activities like self-regulation as identified in S3 and S8.

In addition, S5 and S7 feedback indicated the third hypothesis which is Perceived Ease of Use has a positive influence on the students' attitude (H2b). S5 further explained since Kahoot! can be *open in either computer or mobile phone*, it has convinced her *to learn more English* and she likes to use it during the English grammar lessons. Moreover, S7 asserted that Kahoot! is the most enjoyable apps for her as she *love to use Kahoot! very much even before this I never play Kahoot!*. She also added that this experience of using Kahoot! during English grammar lessons gives her new experience especially *in learn about grammar and so on*. Although S7 has never experienced using the apps previously, it can be safely assumed that initial experience with Kahoot! has been effortless to the users. This is because the availability of the apps on both Android and iOs platforms as well as the smooth operation across web-based and smart phones/tablets platforms has made the apps to be user-friendly (Varannai et al., 2017).

For the next hypothesis which is Perceived Usefulness has a positive influence on the students' engagement (H3a), S4 and S6 expressed this notion in their feedback. S4 explained that *Kahoot! help me to improve my grammar, gain new knowledge and help me to become more clever and become a good student at my class*. He further added that he can understand the topics better and compete with his classmates. Varannai et al. (2017) highlighted that Kahoot! has allowed general competition among the learners as their main goal is to move to higher levels and this has motivated them indirectly. Furthermore, S6 also has the same view as Kahoot! has helped her to improve her English. She thinks that *Kahoot is very helpful for me because it is a fun way to learn English in class with friends.*

Furthermore, for fifth hypothesis which is Perceived Ease of Use has a positive influence on the students' engagement (H3b), it can only be identified in S1 response which he stated that he has been using this application since school and he thinks *it is a good way to improve our grammar because it helps us to learn more in a fun way*. Since this participant has been exposed to Kahoot! previously, it has helped him to achieve the targeted goals during grammar lessons better. When learners have a good experience with Kahoot!, it will indirectly improve their performance which later reinforced their desire to use the apps again in the future (Varannai et al., 2017). Fusch (2022) also found that this application has helped the students to quickly achieve the course learning objectives as well as improve their efficiency.

Finally, for the sixth hypothesis, which students' attitude towards using gamification technology has a positive influence on the students' engagement (H3c), S2 and S9 expressed this idea in their feedback. S2 stated that he loves playing Kahoot! game with his fellow classmates *because it is*

very interesting and fun to compete with each other about English grammar. S9 also pointed out the same idea as she asserted she had a lot of fun when she played Kahoot! in English class. She further explained that *it helped me to improve my grammar, improvise my skills in speaking, reading and comprehension.* In addition, she added *it helps me to communicate with my fellow classmates in group discussion* and she always feels excited when engaging with Kahoot! during English grammar lessons. Zarzycka-Piskorz (2016) accentuated that learners will gain more than content learning experience if they learn cooperatively with their friends as the learning will be more purposeful and as they were allowed to connect with each other during the process.

IMPLICATIONS & RECOMMENDATIONS

The results of this study demonstrate Kahoot!'s significant role in enhancing students' participation in grammar classes. Gamification gives educators the opportunities to change the rigid walls of a classroom into a more interactive and enjoyable learning space. This more engaged mode can alleviate common struggles with grammar instruction like maintaining learners' interest and motivation. Another finding from the study showed that learners had an overall positive attitude toward using Kahoot!, which is necessary for optimal learning. Leaners who have positive attitudes towards technology-enhanced tools are more likely to embrace and utilise them since this leads to continuous advancement and subsequent learning.

Additionally, Kahoot! are vital ingredients in its success. In other words, its ease of use and significant value added should be high on the priority list when developing educational technology, so that it gets integrated into the teaching process effectively. The positive results of this study also indicate that Kahoot! has many more uses than to be incorporated during grammar courses only. Its potential to enhance engagement and learning outcomes suggests it could prove beneficial in a wide range of disciplines and educational levels.

To optimise these benefits, educators must incorporate Kahoot! into other areas of language learning, including reading, writing, and speaking, and explore its use in a range of academic disciplines. Continuous study and implementation of Kahoot! and other gamification technologies can help reinforce instructional techniques and boost learners' involvement. Moreover, training for the use of gamification technologies in teaching techniques should find its place in professional development programmes for educators.

Future studies should consider Kahoot!'s applicability in various learning contexts and fields beyond grammar, including vocabulary acquisition and writing skills. Moreover, it would be beneficial to utilise the Gamification Acceptance Model (GAM) in order to explore the effects of gamification on students' engagement in other language acquisition abilities. It is necessary to research the long-term impact of gamified activities on students' learning and engagement as well as tailor these type of activities to specific learning objectives to ensure a maximum level of gamification efficiency. On top of that, feedbacks will need to be collected from learners' point of view through immersive experiences because it will be important to determine how to reform and enhance gamification platforms and ensure they serve a purpose in educational objectives. By

applying these ideas, instructors can take advantage of Kahoot! and other gamification technologies to create more engaging, effective, and rewarding learners' learning experiences.

CONCLUSION

The present study demonstrated the efficacy of Kahoot! as a gamification tool to promote engagement with ESL leaners on grammar lessons. Kahoot! integration into the teaching process has allowed for the creation of a meaningful and collaborative learning environment. This set of enjoyable activities not only add the element of fun during grammar lessons but also contributes to learners' positive attitudes and results.

The study reveals that Kahoot! through its perceived usefulness and ease of use, has developed a better attitude toward learning. Such a positive viewpoint increases the student's engagement level and signifies the importance of gamification in the overall learning. The results are consistent with the hypotheses of the Gamification Acceptance Model (GAM), as students' engagement is significantly affected by their perceptions of the tool as being useful and easy to use, as well as by their attitudes towards the tool.

Considering these findings, it might be best for educators to incorporate Kahoot! not only for teaching grammar, but also for a wide range of language learning processes to maximise the benefits of it as much as possible. Further research suggested is to explore the implementation of Kahoot! in diverse classroom settings and on different language skills, yielding insights on how gamification enhances learning outcomes across subjects.

Kahoot! proves to be an amazing educational tool that caters to the needs of the present-day learning environment, providing an engaging and immersive way to reinforce grammar knowledge. Through continuous integration and exploration, these technological tools can potentially revolutionize the educational landscape while preparing us for the demands of the future.

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Conflict of Interest

The authors declare there is no conflict of interest.

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Authors' Contributions

The authors confirm contribution to the paper as follows: study conception and design: Z.B. R.A. & M.A.A.R; data collection: Z.B.; analysis and interpretation of results: Z.B. & R.A.; draft manuscript preparation: M.A.A.R. All authors reviewed the results and approved the final version of the manuscript.