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The Use of Kahoot and its Role in Improving Irregular Verbs Learning among Primary ESL Learners

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Abstract

With the emphasis on 21st Century Learning in today's education, most ESL teachers have realised that traditional chalk and talk may no longer be sufficient in the classroom, particularly when teaching English grammar to primary school students. Numerous research on the usage of gamification among school children, university students, and even trainee instructors have been undertaken. These studies have found that gamification has a positive impact on their learning. With this in mind, this study was done to demonstrate that using *Kahoot!* aids Year 4 students in acquiring English irregular verbs. The pre-test and post-test findings were used to collect data from a sample of 35 Year 4 students in this quasi-experimental study. The sample t-test revealed that after employing *Kahoot!* in the classroom, students' post-test performance increased. In conclusion, this study shed light on the variety of ways that gamification enhances students' learning, particularly in terms of memory retention. It also serves as a springboard for further research on the usefulness of *Kahoot!* in addressing any aspect of learning among younger learners.

Keywords: Gamification, Irregular Verbs, Kahoot, Memory Retention, Game-Based Student Response System

Introduction

As the 4th Industrial Revolution takes hold, the world's technological dependability has become more evident. Gaming accounted for three billion hours worldwide and with the introduction of mobile devices, gaming has become even more mobile (Perry, 2015). The dominance of Information and Communication Technologies (ICT) becomes more important in today's schooling environment, particularly in light of the emphasis on 21st Century Learning. According to Yunus (2018), because of the rapidly evolving technology, teachers play an important role in adapting their teaching methods. As a result of Nick Pelling's introduction of gamification in 2002, interactive programmes such as Kahoot!, Socrative, Quizziz, Quizlet, and Plickers have emerged that its idea was further extended by incorporating game elements into other web assets in order to boost engagement. In recent years, studies have demonstrated that gamification is effective in increasing learners' motivation and engagement in learning. For example, Wang, Zhu, and Stre (2016) discovered

that students who took a *Kahoot!* quiz were more engaged, motivated, focused, and loved quizzes more than students who took a paper quiz or a Clicker quiz. Huseyin and Kocakoyun (2018) conducted another study and concluded that using *Kahoot!* as a gamification tool boosted students' engagement, desires for achievement, and motivation. Zarzycka-Piskorz (2016) did a similar study and found that utilising Kahoot to learn grammar increased learners' motivation. While there are reviews examining the effectiveness of using online tools (Raw & Ismail, 2021), the current study is interesting as it is establishing the connection between the learning of irregular verbs via *Kahoot!* quiz as well as investigating its capacity in motivating students to learn irregular verbs.

In addition, little emphasis has been given on the way of teaching and learning irregular verbs, an aspect that has been demonstrated to be one of the most perplexing aspects of learning English, particularly among ten-year-old children. Irregular verbs are known to be one of the most difficult grammar parts to master, particularly among students learning English as a second, foreign, or non - native speakers (Brown, 1973). Prior to starting tertiary education, the average Malaysian student would have undergone 11–12 years of learning English. This implies that they should have at least an acceptable level of English. However, Singh et al. (2017) showed that more than a third of grammatical errors, particularly the tenses of verbs, including irregular verbs were made by Diploma students.

Traditionalists believe that memorising information about irregular verbs was the only way to recall it. As a consequence, the entire learning experience is unpleasant and dull, especially to those who are young. Learning irregular verbs in particular appears to be extremely perplexing due to the inconsistent and constantly shifting rules. As a result, students prefer to apply the same principle to all situations. In other w ords, they overgeneralize (Richards, 1974). According to Dornyei (2009), when rules are considerably automated, less attentional resources are required. As a result, a greater number of rules operated on autopilot. Unfortunately, inflections like 'ed' are introduced after action words (verbs) due to a lack of understanding of past tense form; for instance, "*She cutted the fruits yesterday night*" (Wee et al., 2010).

Another concern with this topic is students' memory recall issues when studying irregular verbs (Ting & Ismail, 2021). Even still, rote learning seems to be the best option, whereby students are expected to memorise a list of irregular verbs. With some of the terms, it might work on some of them. Meanwhile, younger children commonly mix them up, particularly when the terms are coupled with the past participle form. Hence, teachers must know the distinction between declarative and procedural memory prior to deciding on the most effective method for teaching irregular verbs. Declarative memory is "the collection and preservation of facts and experiences, including unstructured information" (O'Grady, 2006, p.2) whereby the learner can link newly acquired knowledge to its meaning, pronunciation, and application. The use of a wide range of physical and cognitive abilities, specifically those linked to sequencing is required for procedural memory (Pinker & Ullman, 2002). Unlike its counterpart, this memory operates on an unconscious level; where the learners may be unaware of the mechanisms that enable them to originate or understand words, particularly while learning a new language. So the question is how to make sure that the lesson they're learning about irregular verbs hits this section of their memory? This lead to the purpose of this paper that is to investigate the use of *Kahoot!* in improving young English language learners in learning irregular verbs.

Research Question

The study discussed in this paper examined the use of *Kahoot!* as a gamification tool on learners' irregular verbs learning to answer the research question: To what extent does *Kahoot!* improve Year 4 pupils' learning of the Irregular verbs?

Literature Review

Gamification and Game-based Student Response System (GSRS)

Gamification is the process of incorporating gaming features into non-game aspects in order to more effectively complete a task (Khaleel et al., 2016). Its popularity across the globe can be answered by understanding the common belief that gamification has improved learners' learning experiences. Gamification promotes grammar learning as it becomes more pleasurable and long-lasting since the game succeeds in creating a meaningful environment in which communicative grammar can be practised (Yolageldili & Arikan, 2011).

Unlike traditional assessments, gamification assessment encourages students to compete with one another for top ranks, resulting in a more enjoyable and meaningful experience, especially among those aged 10. This strategy also benefits teachers because it allows them to assess their students' learning in a formative manner. The data can be obtained immediately, allowing for future intervention. Finally, learning that is based on gamification such as *Kahoot!*, inspires learners to keep attempting to understand the lessons without feeling embarrassed or fearful of appearing silly.

Game mechanics, game design and game strategies are all categorized as "game aspects." One of *Kahoot!*'s basic game components is the 'leaderboard,' which displays rankings of game players depending on their achievement levels. The 'leaderboard' ranks game players based on their accomplishment levels. Learners are awarded points for each of the *Kahoot!* quizzes they complete based on their performance (Flores, 2015). This feature is an extrinsic motivation, especially when the students attempt to solve the questions on their own. Apart from the leaderboard and scoring system, *Kahoot!'s* technical components such as audio, visuals, colours and feedback are also considered as important elements.

Beyond all else, *Kahoot!* may be regarded as a modern-day rebirth of the clicker. The reign of "iClicker" and "Poll Everywhere" may be traced back to the advancement of the previous Student Response System (SRS) to contemporary *Kahoot!'s* easy-to-use software (Licorish et al., 2018). Game-based Student Response System (GSRS) is comparable to Novak's meaningful learning paradigm that distinguishes between learners' deep and surface learning processes, in addition to replacing SRS. The entire learning process start with teachers choosing relevant resources based on their students' prior knowledge, followed by their initiative to engage students in deeper learning rather than mindless memorization. Interestingly, this idea and concept is illustrated in *Kahoot!.* Students receive immediate feedback from the game as they experiment, explore, and analyse their knowledge while responding to questions. Furthermore, according to Licorish et al (2018), learners who have been exposed to deep learning techniques like GSRS are more engaged and their depth learning tactics are adjusted to their study abilities. Eventually, when compared to traditional student response techniques, learning irregular verbs using *Kahoot!* might be the most promising technique since it makes the assessment completely clear.

Gamification in Learning

The new era of teaching is feasible in today's technological environment brought forth by advancements of technology. According to Jalaludin et al (2019), the Instagram feature "askme" can help students learn in a more conducive atmosphere while they develop their writing skills and it increases interactions between parents and children at home. Computer technology provides tools like images, films, text, audio, animations and interactivity that contribute to learning. Innovative concepts of gamification and GSRS have emerged through computer technologies (Yunus et al., 2016).

Previously, the focus of the situation was not on how gamification is applied to learning instead of language assessment. However, Zakaria et al (2018) found that learners significantly improved by 40 –55 % after using *Kahoot!,* thus proving that gamification may be applied as a formative assessment alternative for language learning and acquisition. This study shows that the usage of gamification has an influence on learning, particularly learning a language. Gulin and Arda (2011) concluded that utilising Kahoot! in the classroom makes grammar learning more enjoyable and the memory retention more permanent because games provide learners with a meaningful context for communicatively practising grammar. Because of this meaningful context, *Kahoot!* has potential in assisting younger learners comprehend the notion of irregular verbs which is traditionally achieved by rote learning.

Kahoot! Features and Past Studies

In addition to being one of the top 100 current applications used in the classroom, Kahoot! is the 36th most popular educational app (Kapuler, 2015). Ciaramella (2017) adds to the remark by stating that *Kahoot!* supports educational trends through the use of a gamification method that has resulted in enormous student engagement. Besides that, *Kahoot!* is a "free evaluation tool that teachers can use at any moment during the course to encourage student engagement in the lesson and can also be used as a formative evaluation" (Barnes, 2017).

Furthermore, because this application does not necessitate extensive instructor or student training, it is incredibly user-friendly and reachable via cellphones, desktops, and tablets (Wichadee & Pattanapichet, 2018). Teachers must first register their own account before they can use *Kahoot!* Then, they can go on to content preparation using any of the three modes available, which include quizzes, jumbles, discussions, and surveys (Chotimah & Rafi, 2018). Teachers can generate endless questions with or without photos or videos in quiz mode and have absolute control over the quizzes by limiting the number of response options and time. However, students can only participate after entering the pin number provided by their teacher on the main screen. Inclusive Design (2010) claims that visual signals in various shapes and colours in combination with a clear, simple question as well as response structure are advantageous to both groups and individuals with varying learning requirements. The player options in this application show collaborative learning: Player VS Player (conventional) and Team VS Team. In 21st Century Learning, this application is linked to the 4c's concept (team mode). Aside from that, *Kahoot!'s* gamification features include leaderboards, scores, feedback, performance graphs, and social features/community collaboration (Flores, 2015).

The findings of a study conducted by Zarzycka-Piskorz (2016) titled "*Kahoot!* it or Not? Can games be motivating in learning grammar?" proved that after playing *Kahoot!,* 70% of those who responded said they were more motivated to learn grammar. The statistics are likely driven by four common motivations: the desire to win, gaining mastery over one's own understanding, interacting with one another, and recognising the game's objective, which includes reviewing, double-checking, and consolidating information. Another study by

Ganesan et al (2018) discovered that in a grammar test focusing on the Simple Present Tense, 66% of the overall sample benefited, meanwhile and the other 78% improved in Simple Past Tense and 61% improved in a conjunction test.

Irregular verbs learning and Overgeneralization

Learning irregular verbs has long been associated with the concept of 'overgeneralization.' The majority of ESL students are aware that past tense verbs must be inflected with -d, -ed, or -ied to indicate that the events occurred in the past. As a result, errors like *goed*, *eated*, *wented* and *felled* continue to happen in the writing of students learning English as a second language. ESL students commonly make the same mistakes in their writing and speaking because they do not understand how irregular verbs form. According to Prapobaratanakul & Pongpairoj (2016) irregular verbs can be classified into four types: (1) ablaunt (vowel change; for example, *run* becoming *ran*), (2) pseudo-inflection (a long vowel becomes a short vowel; for example, feed becoming fed), (3) suppletive (completely distinct; for example, go becoming went), and (4) identical forms (does not alter; eg put becoming put). Due to its various degrees of unpredictability, the presence of brute-force memory makes the study of irregular inflection (e.g., sing – sang) easier (Steven & Alan, 1994). As a result, a toddler who hears the word 'sang' repeatedly used by his parents would quickly get accustomed with the form.

Unlike ESL learners, Brown (1973) claims that before the normal equivalent -ed, a young English speaker develop irregular past tense inflection. As a result of the lack of both contexts, learning irregular verb form becomes challenging for non-English speaking students. Interference of the dominant rules is another circumstance that contributes to the difficulty in learning irregular verbs. Kuczaj (1977) explains that once a youngster has mastered the regular past tense form, he will begin to make two types of errors while utilising the irregular past tense form. Learners suffix an irregular generic verb form (eated) or the past tense form itself with the -ed suffix (ated). In addition to ambiguous rules, interference from the mother tongue contribute to a lack of mastery of English irregular verbs. Mother language acquisition has been proven to affect at least sixteen aspects of English grammar including regular and irregular past tense verbs (Ashari and Munir, 2015) and Watcharapunyawong and Usaha (2013) cited in Denizer (2017). Thus, the purpose of this report is to study an answer to the main research question: To what extent does *Kahoot!* improve Year 4 pupils' learning of Irregular verbs?

Methodology

Research Design

This quantitative study employed a quasi-experimental design in which the independent variable was manipulated in a chosen sample. A group of 35 Year 4 pupils without any control group was available in this study.

Setting and Participants

This study involved a national-type Chinese primary school located in a rural area in Sepang, Selangor. 35 Year 4 pupils (M = 17; F = 18) were selected using convenience sampling technique, which was opted primarily due to accessibility. All the participants are from different backgrounds who have mixed ability in their English proficiency level. However, 80% of them are at the average English proficiency level as assessed by the school based

assessment. The selection enabled the researchers to attain responses from the participants in a cost effective way due to ease of accessibility.

Data Collection Method

Since this study sought to see the use of *Kahoot!* towards students' memory recall of irregular verbs, data was collected quantitatively. The independent variable (IV) was the *Kahoot!* quiz, while the dependent variable (DV) was the students' scores. The use of *Kahoot!* on Year 4 pupils' acquisition of irregular verbs was demonstrated using this rank, which measures memory retention. The instrument used in this study was the Irregular Verbs Test, which was given before and after the intervention (*Kahoot!* quiz sessions). Moreover, the order of questions in the post-test were changed randomly to avoid memorisation by the participants. Each of the participant's scores were recorded and compared with the pre-test results to determine if there is any changes in their scores.

	Pre-test	Treatment	Post-test
Respondents	**X**	**O**	**Y**

Table 1 Design of pre- and post-test

Table 1 contains the following information:

X : Pre-test for Irregular Verbs
O : Kahoot! classroom treatment
Y : Post-test for Irregular Verbs

Procedure for Research

The study began with compiling a list of 46 common irregular verbs, which were converted to *Kahoot!* and supplemented by relevant pictures to assist language learning. These 46 terms were chosen because they are frequent words in English language acquisition as indicated in the syllabus. Before commencing the teaching and learning process, students were required to pass a pre-test consisting of 22 multiple choice questions covering the selected 46 irregular verbs. After the pretest, the researcher then moved on to the first lesson, explaining irregular verbs and teaching all 46 irregular verbs to the students. They were then told to write the words in their exercise book for future reference.

Figure 1. Examples of participants' Irregular verbs notes

Then, the pupils were introduced to *Kahoot!*. Explanation on how to use the application from inputting the game pin to creating a login and completing the evaluation questions was given. This was because none of them had used *Kahoot!* before. When the students had a good understanding of the concept, they were given the quiz on irregular verbs and told to solve it in small groups.Every day for three weeks, the quiz drilling took place with at least 5 minutes allotted for each interaction. Finally, after using *Kahoot!* in several lessons, the post-test was given.

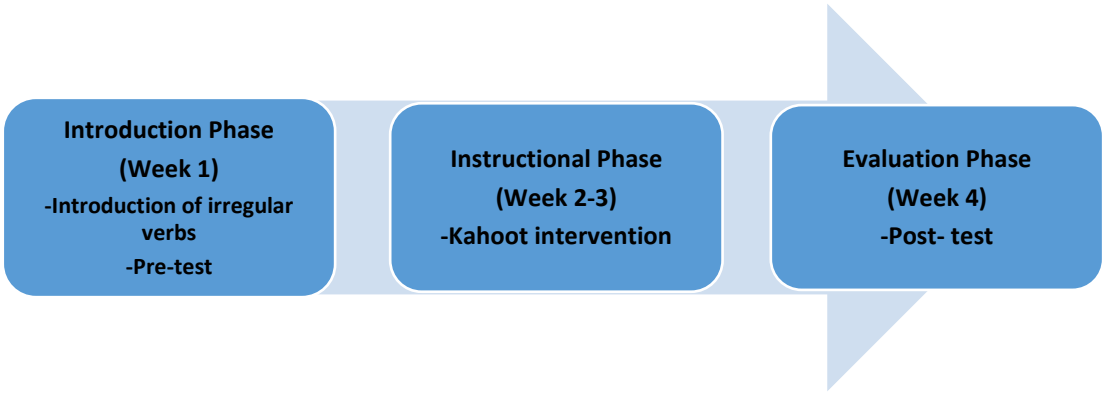

Figure 2. Research Procedure

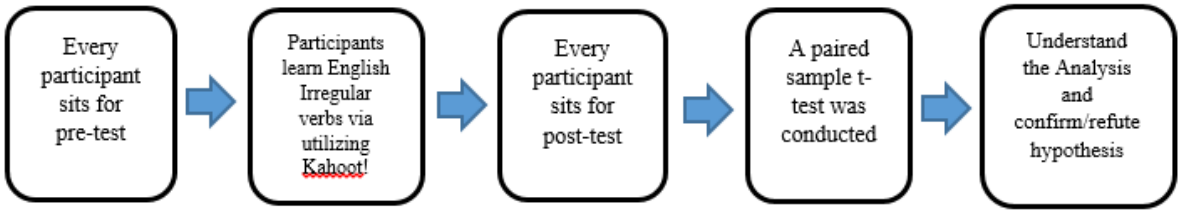

Figure 3. Flow of data collection procedure

Data Analysis

In this study, quantitative data analysis will be utilized. In *Kahoot*! quiz, each correct answer scored 1 mark and each wrong answer scored 0 mark. As for the pre-test and post-test results, the steps start with the transference of all the scores into a Microsoft Excel sheet and the percentages for each of the tests were calculated. Following that, the percentage from the post-test was subtracted with the percentages from the pre-test. The differences in the percentage after the subtraction will identify the improvements in the participants' learning on irregular verbs after the intervention of *Kahoot!.* Then, there was an improvement range table to categorise all participants into low improvement, medium improvement and high improvement. Participants count are based on the percentage range whereby those score 1-30% were considered as low improvement, 31% to 80% were medium improvement and improvement among 81% to 100% are categorised as high improvement.

Besides that, they were analysed using paired sample t – test. Since marks are continuous (scale) data, they are often summarised from their average and standard deviation. Paired sample t-test, however, is used to compare the means of the related data from the two samples. Then, the scores from both of the tests were entered in SPSS as well.

Finding and Discussions

The results obtained are discussed in terms of scores, percentage, percentage of improvement and range as follows:

Table 2

An excerpt of participants result in pretest and posttest percentages.

Participant Code	Pre-test Scores	Percent	Post-test Scores	Percent	Percentage of improvement	Range
P31	0 mark	0.0%	21 mark	95.5%	95.5%	HIGH
P3	1 mark	4.5%	22 mark	100.0%	95.5%	HIGH
P34	2 mark	9.1%	22 mark	100.0%	90.9%	HIGH
P13	6 mark	27.3 %	14 mark	63.6%	36.4%	MEDIUM
P21	0 mark	0.0%	7 mark	31.8 %	31.8%	MEDIUM
P1	18 mark	81.8 %	20 mark	90.9 %	9.1%	LOW

Each of the participants displayed improvement in their post-test as compared to their pre-test scores. Three participants showed remarkable improvement as they received above 90% improvement in their post-test. Participants who scored only 0 or 1 in the pre-test now scored 96% in the post-test. This was a great improvement. One participant improved the least among the rest (9%). Despite its small percentage, it is reasonable that this participant already had a broad schemata on irregular verbs. As a result, it is understandable that the participant did not show much improvement as compared to others.

Table 3

An excerpt of participants' result range of improvement.

Range of improvement	Range of percentage	Number of participant
LOW	1%-20%	6
MEDIUM	21%-80%	23
HIGH	81%-100%	6

An analysis of the participants' range of improvement shows that the majority of the participants have a medium rate of improvement. While 5 participants showed an outstanding improvement in their post-test scores, there are 2 participants with a low rate of improvement, which might indicate a negative view of the English irregular verbs and the quiz format of *Kahoot!*

Table 3 showed that all participants have significantly improved for each item in their post-test result. However, during the pre-test, the majority were not able to answer correctly in more than nine items. Overall, most of the pupils were only able to answer correctly in five out of twenty two items during the pre-test.

29 out of 35 participants have reached higher acquisition in irregular verbs as their achievement was at above average level during the post-test. The results show that most of the participants scored well and are more knowledgeable in many basic English irregular verbs. Besides that, there were seven irregular verbs that obtained a majority of the participants answering correctly which were 'feel', 'sell', 'buy', 'grow', 'put', 'build', and 'blow'. This clearly shows that more than 20 participants have made improvements on these items.

In terms of number of participants' improvement, Item 17 showed the most dramatic improvement results as compared to the other 21 items. In Item 17, there were only 2 out of 35 participants who answered the question correctly during pretest, while 29 participants answered correctly during the post-test, indicating there were 27 participants having learned the correct answer out of 35 participants. This proves that the participants have mastered the irregular verbs after the intervention of *Kahoot!*. Kahoot's application has been able to help pupils to be more engaged, motivated and even remember the irregular verbs without confusion among past tense verbs and mixing up the irregular verbs rules and structure.

On the other hand, there were two irregular verbs with the least improvement in the study which are Item 1 (swim) and Item 8 (hear). Both items have less than 10 pupils' improvement. For Item 1, there were only 5 pupils improvement whereas for Item 8 is slightly better, with an increase of 9 pupils during the post-test result. Even though the vast difference between the highest and the lowest improvement, it can be derived that this stems from the participants' language fluency. This situation is best explained with the participant's own pre-existing knowledge of the subject matter as the participants already have acquired much on the schemata on irregular verbs even before *Kahoot!* was introduced. Therefore, it was fair that the improvement is lesser as compared to the other items.

Item 15 is another one that has seen a significant improvement. On the pre-test, only 4 out of 35 respondents were able to properly answer this question. However, the right past tense form of the irregular verb was remembered by 27 out of 35 responders; *grow* during the posttest evaluation. Without any other application of exercise, the relationship between this application and memory recall is more evident and obvious. This result might be attributed to Steven and Alan's (1994) view that the presence of brute-force memory enhances the investigation of irregular inflection (e.g., sing – sang). Because their brute memory performed admirably during the programme, respondents who were frequently exposed to the irregular verbs throughout *Kahoot!* sessions obviously found it simpler to retain the information.

The SPSS was used to measure the statistical analysis to get the mean value, standard deviation value, t-value, and significant value. The statistics' findings are shown in Table 4:

Table 4
Comparison of results in pretest and posttest

	N	Mean	Std. Dev	t-value	Sig.
Pretest Score Section A	35	5.568	5.087	-12.711	.000
Posttest Score Section B	35	17.289	5.037		

On the irregular verb quizzes, a paired sample t-test was used to compare the pre-test and post-test results. Between the pre-test (mean=5.568, s.d=5.087) and the post-test (mean=17.289, s.d = 5.037), there was a significant difference in scores (t = -12.711, p =.000). It is shown that there's greater *mean* difference for the posttest, which leads to the conclusion that improvement is the aftereffect of the treatment. As shown in Table 4, the sig (p) paired sample t-test yields a result of 0.000, which is less than 0.05. Hence, rejecting the Ho, which indicates the difference in the participants' learning of English Irregular verbs after implementing the use of *Kahoot!* in the classroom is significant. While some might question the correlation between participants' learning experience after using *Kahoot!* and their improvement, it shows to an extent that the use of *Kahoot!* enhances learning opportunities by helping the participants to retain their memory of the irregular verbs even longer.

Such enhancement in learning could largely be due to the existing features in the application and its propinquity to young learners who are more obliged towards game-based learning. Apart from that, another area which accentuate this application among other teaching and learning pedagogy is its capability to instill and capture the users' engagement (Ciaramella, 2017). Besides that, Zarzycka-Piskorz (2016) supported the above claim by stating that Kahoot! helps to heighten ones' motivation towards learning. These two statements are supported by observations of the participants' behaviour throughout the procedure, which revealed that they were highly engaged and enthusiastic.

Traditionally, grammar learning is misconstrued as a terrifying experience to any second language learners. However, according to Hussein's (2015) statements on gamification domains, Kahoot!, among other gamification models, contributes to lower affective filter which results in a more positive learning experience. This research has concluded this to be true when the participants' excitement and joyful attitude towards learning irregular verbs when utilising the intervention, as opposed to frowns and endless confusions of their predecessors.

The findings from Table 4 indicated a greater difference in terms of means for the post-test. This statistic demonstrated that the students' grades improved over time as a result of the treatment they received during the study. Table 3 shows the sig (p) paired sample t test has a value of 0.000, which is less than 0.05. As a consequence, Null hypothesis was rejected, suggesting that there was a substantial change after pupils were taught to use Kahoot! to acquire and recall English irregular verbs.

Kahoot's characteristics, as well as its relevance to younger learners, may have enhanced the application's efficiency in helping participants remember the irregular verbs. Apart from the previous notable characteristics, Ciaramella (2017) believes that another feature that distinguishes this application is its ability to boost user engagement. Furthermore, according

to Zarzycka-Piskorz (2016), Kahoot helps in improving one's desire to learn. The researcher verified these two statements based on her observations of the participants' behaviour during the procedure, which revealed that they were extremely engaged and dedicated.

Conclusion

To summarise, the usage of *kahoot!* has proven to have a positive impact on students' acquisition of irregular verbs. The findings of this study also show how *Kahoot!* can be very helpful in teaching English irregular verbs to younger English language learners, particularly ten-year-olds students. This is evidenced by an increase in post-test scores following the application of *Kahoot!* in the acquisition of irregular verbs.

According to the findings of this study, gamification is a popular teaching method that can significantly improve the learning experience. Apart from the research's strengths, it might be the beginning of using gamification to be applied to other aspects of English grammar. To future research, it is recommended that a larger sample size is employed for better generalization. Another concern would be a lack of a consistent internet connection as well as sufficient netbooks or mobile devices to carry out the operation.

Additionally, each *Kahoot!* session should have a recorded observations. The reactions of the participants can be backed up by the visual and audio clues seen throughout the game which show active involvement, enthusiastic emotions and conversations in the classroom. Future academics can look at a comparable issue with the use of *Kahoot!* in new contexts, subjects or even techniques. Researchers may look into the use of *Kahoot!* in EFL classroom activities in greater depth or offer more detailed reviews of how *Kahoot!* is used in classroom activities.

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