

# Utilization of Online Game-Based Application Kahoot as a Tool to Improve the Vocabulary Skills of ESL Learners at Kaypian National High School

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## ABSTRACT

This research aimed to test whether there is a significant effect of Game-based Application, Kahoot!, on the vocabulary acquisition skills of ESL (L2) learners. A total of 30 students ages 13 to 14 participated in the study. The student's vocabulary acquisition skills were tested using a game-based application called "Kahoot!." The study utilized a sequential exploratory research design from which the results of quasi-experiment and interview based on perceptions of the learners were both obtained. The intervention lasted for eight weeks, and the language learners' views were collected using a data collection tool. The study used a pre-test –post-test one group design, and analyzed the quantitative results through paired t-test sample mean.

The post-test results showed a significant increase of post-test scores compared to the pre-test scores. This implied that using Kahoot had a positive impact on language learners' vocabulary levels. In addition, thematic analysis as well as In Vivo Coding Process and Inductive Approach were used to generate codes and formulated thematic analysis based on the answers of the interview participants. The learners generally expressed positive views on the digital game-based learning, saying that it highly improved their vocabulary through rewards, badges, reinforcements and healthy classroom competition. Receiving immediate feedback enhanced their motivation which made learning meaningful and permanent. In summary, through careful experiment and in-depth analysis of data results, the game-based learning approach using the application Kahoot was found to significantly enhance the vocabulary skills of language learners.

**Keywords:** Kahoot, ESL, application, learning, game-based learning,

## INTRODUCTION

Various current social trends and demographic shifts are reality in many classrooms. In this context, it is perceived that teaching and learning are affected by a range of factors including the use of pedagogical approaches and access to quality academic resources and teaching support systems or teaching aids which contribute to learning. Meanwhile, there are social realities too that affect education, resulting in more curriculum demands and more complexities. Given this, it is imperative that teachers plan how to impart curriculum content and achieve expected learning outcomes, align learning materials, and engage pedagogical approaches that are not only inclusive but also effective and relevant in educating today's diverse learners.

Language experts had noted that many studies related to language teaching and learning highlight the importance of language acquisition. For instance Viera (2016) once shared that research studies in applied linguistics particularly focus on vocabulary acquisition of second and foreign language learners. Nation (2018) stated in a recent First Person Singular feature in Cambridge University Press that over 30% of the research on first language (L1) and second language (L2) vocabulary learning in the last 120 years has occurred in the last 12 years, which means that much better research findings have enhanced understanding of the nature of

vocabulary, how much and which vocabulary is required to use L2, such as English effectively teach and has to effectively teach and learn the required vocabulary in language.

Several studies have found that there is a need to shift teaching vocabulary from rote learning to a more interactive and innovative way. In teaching 21st century learners, the integration of technology has contributed a lot in modernizing education through the so-called as gamification approach. This modern approach is the total opposite of traditional way teaching of the language when students copy an unfamiliar word, get its meaning and use it in a simple sentence.

In contrast, game-based learning makes use of different game elements that reinforce active classroom participation, making it more fun, engaging and motivating for learners. Hence, online game-based applications hold sway in helping language teachers provide meaningful instruction specifically in teaching vocabulary.

Kahoot as an online game-based assessment tool may be integrated with some parts of the language lesson. However, it was observed that the study of gamification was presented during the evaluation of the lesson. To better evaluate the effectiveness of the Kahoot application, there must be activities to assess verbal lessons as well such as vocabulary. The process of integrating the gamification method is not limited to traditional education. It has different effects on different audiences, including academics, school authorities, and students. Thus, conducting further studies on the use of Kahoot in different audiences, different learning modalities, times, and settings is very much needed to verify its effectiveness in teaching vocabulary to language learners.

The present study supports the need to polish English language education. It is a great step forward to begin with vocabulary acquisition, and then processed with other aspects to succeed at language learning.

Considerably, the purpose of this study is to find out whether the use of an online game-based application such as Kahoot significantly improves the vocabulary skills of English as Second Language (ESL) learners; and investigate the learners' point of view regarding the level of effectiveness of Kahoot as a tool for vocabulary tests and students' evaluation of the Kahoot environment. This study would also like to attest to whether the use of Kahoot has a significant effect on the vocabulary skills of ESL students based on assessments.

## **METHODOLOGY**

This study on the Utilization of the Game-based Application: Kahoot as a Tool to Improve the Vocabulary Skills of ESL students used two phase mixed-method research, particularly, a sequential exploratory research design.

The researcher analyzed qualitative data through thematic analysis based on the codes and themes formulated during the interview. The researcher detailed the participants' perception of the effectiveness of Kahoot and its environment in terms of inducing motivation and interest, enhancing and reinforcing language learning, engaging classroom competitions, granting reward/badges, fostering fun learning environment and producing meaningful experiences.

For quantitative data, a quasi-experimental method, specifically one group pre-test—post-test design was used to measure the vocabulary skills of ESL students before and after using the Kahoot application for a duration of one-quarter period. The quantitative research approach focused more on the analysis of quantifiable variables which produced numerical results.

It aimed to gather and analyze the validated data results with validated pre-test and post-test instruments administered to the target respondents of this study. After the researcher had gathered both the qualitative and quantitative data, these results were used in crafting a vocabulary test bank material.

The researcher used a validated 50-item pre-test—post-test as main instrument to gather the data from the respondents. In this study, the research instrument was composed of a 50-item vocabulary test in multiple choice— examined, checked, and validated by language experts.

The test questionnaire was divided into four parts. Test I was about vocabulary words in sentences, Test II used homophones while Test III dealt with euphemisms and Test IV lifted vocabularies from a sample reading text in Asian literature. This instrument contained vocabulary items from the Grade 8 lessons taught during the 2nd quarter academic period (November - January) of School Year 2023-2024.

To complement the qualitative data, the researcher conducted interviews using researcher-made guide questions that sought to answer the questions about the learners’ experiences and perceptions on the effectiveness of Kahoot in terms of inducing motivation and interest, enhancing and reinforcing language learning, engaging in classroom competition, granting reward/leader board/badges, fostering a fun learning environment; and producing meaningful experiences

## RESULTS AND DISCUSSION

Table 1.1 ESL Learners’ Perception on the Used of Kahoot in their Vocabulary Skills in terms of: Inducing Motivation and Interest

| Categories                                     | Theme  |
|--|--|
| Enhances Knowledge in Vocabulary Understanding | Engagement and Enjoyment in Learning Kahoot          |
| Promotes Positive Learning Environment         |  |
| Fosters Healthy Competition                    |  |
| Positively Influence Motivation                | Motivation and Engagement through Game-like Learning |
| Makes Learning Interactive                     |  |
| Provides Instant Feedback                      |  |

Note: See the complete Summary Table of Codes on Appendix F, pg. 109

In Question Number 1 and 2, participants were asked whether they were interested to use Kahoot! in testing their English vocabulary. All of them agreed and showed great interest to utilize the application. It is very evident in their answers that students are very interested to use game-based approach in classroom teaching. Thus, Kahoot! provides engagement and enjoyment in learning, assessing or testing English vocabulary skills of ESL learners using Kahoot. It also increased motivation for learners.

Table 1.2 ESL Learners’ Perception on the Used of Kahoot in their Vocabulary Skills in terms of:Enhancing and Reinforcing Language Learning

| Categories                     | Theme   |
|--------------------------------|---|
| Enhances Understanding         | Enrichment Vocabulary Understanding through Engaging Learning |
| Encourages Class Participation |   |
| Reinforces Learning            |   |

Note: See the complete Summary Table of Codes on Appendix F, pg. 109

Table 1.2 showed the Question Number 5 elicited answers from participants whether Kahoot! application helped them understand better the lesson taught by the teacher. Meanwhile, learners’ answers from number 5, revealed the same notion with research by Wouters, van Nimwegen, van Oostendorp, and van der Spek (2013) who explored the effectiveness of game-based learning. The findings suggested that gamified learning environments can develop the lesson understanding and mastery of the learners. This supported the idea that Kahoot!'s gamified approach could contribute to better understanding of lessons.

Kahoot! was found to enhance learners’ comprehension and retention of English language. By presenting content in a gamified format with vibrant visuals and fun music, Kahoot! appealed to learners' interests and facilitated better understanding of lesson content, which improved the over-all comprehension of English vocabulary.

Table 1. 3 ESL Learners’ Perception on the Used of Kahoot in their Vocabulary Skills in terms of:-Engaging in Classroom Competitions

| Categories        | Theme   |
|-------------------|---|
| Positive Feeling  | Enthusiasm towards Classroom Competition using Kahoot |
| Mixed Feeling     |   |
| Enjoyable Feeling |   |

Note: See the complete Summary Table of Codes on Appendix F, pg. 109

Their answers to questions number 3 and 4 revealed that Kahoot! helped enrich learners’ enthusiastic feelings of participating in a classroom competition.

Similar to that, a study by Hamari, Koivisto, and Sarsa (2014) on gamification effectiveness highlighted that gamified elements such as leaderboards and rewards significantly contribute to increased motivation and engagement. These elements are often integral to Kahoot!'s design, fostering a healthy competition that motivates students to actively participate.

Table 1.4 ESL Learners’ Perception on the Used of Kahoot in their Vocabulary Skills in terms of: Granting Reward/ Leader board/ Badges

| Categories                   | Theme  |
|------------------------------|--|
| Gives Sense of Achievement   | Healthy Experience of Participating in a Classroom Competition |
| Stimulates Motivation        |  |
| Boost Interest to Learn More |  |

Note: See the complete Summary Table of Codes on Appendix F, pg. 109

Table 1.4 showed that there are positive impacts of granting reward, leaderboard, badges and corresponding points to the performance of the learners.

It was supported by Deterding et al. (2011) discussed the concept of "gamefulness," emphasizing that well-designed gamification elements, including competition features, contribute to a positive and enjoyable learning experience. This aligns with the idea that Kahoot!'s interactive and competitive nature enriches healthy experience of participating in the classroom competition.

Table 1.5 ESL Learners’ Perception on the Used of Kahoot in their Vocabulary Skills in terms of: Fostering a Fun Learning Environment

| Categories             | Theme  |
|------------------------|--|
| Aesthetically Pleasing | Contributes Lively and Captivating Virtual Environment |
| Tuneful Music          |  |
| Widely Accessible      |  |

Note: See the complete Summary Table of Codes on Appendix F, pg. 109

Question number 6 refers to the learners’ perceptions on the over-all Kahoot virtual environment. Among the three categories formed were aesthetically pleasing, tuneful music and widely accessible for the learners.

Likewise, a global perspective on Kahoot's impact was presented in the study by Kim et al. (2019), "The Global Use of Kahoot!: A Global EdTech Provider." This study analyzed the widespread adoption of Kahoot by teachers and students worldwide. Kim et al. (2019) highlighted how Kahoot's playful and colorful graphics, along with its audio features, contribute to increased engagement and fun in learning. The study also emphasized the global nature of Kahoot's reach, reflecting its effectiveness across different educational contexts and cultures.

Table 1.6 ESL Learners' Perception on the Used of Kahoot in their Vocabulary Skills in terms of: Producing Meaningful Learning Experiences

| Categories                    | Theme   |
|-------------------------------|---|
| Intellectual & Mental Benefit | Fosters Cognitive, Affective and Psychomotor Domains of Meaningful Learning Experiences |
| Emotional Benefit             |   |
| Physical Benefit              |   |

Note: See the complete Summary Table of Codes on Appendix F, pg. 109

Question Number 7 sought to find whether the time pressure set for each question helps students increase their speed to test their cognitive, affective and psychomotor skills and agility in answering the vocabulary test questions.

Answers affirmed that the interactive nature of Kahoot! contributes to several cognitive and skill-enhancing benefits. It does not only intensify memory and quick thinking but also nurtures valuable skills such as focus, time management, and rapid decision-making.

### The Level of Vocabulary Skills of ESL learners based on Pre-Test

Table 2. Distribution Level of Vocabulary Skills of ESL Learners Based on Pre-Test

| CATEGORY     | FREQUENCY | PERCENTAGE    |
|--------------|-----------|---------------|
| Good         | 13        | 43.3          |
| Very Good    | 17        | 56.7          |
| <b>TOTAL</b> | <b>30</b> | <b>100.00</b> |

The table presents the distribution of pre-test levels of vocabulary skills among ESL students' insights. Majority of the participants 56.7% showcased an impressive vocabulary performance, placing them in the "Very Good" category, while a 43.3% demonstrated a good performance in the "Good" category. This observation suggested that ESL learners enrolled in the specialized Journalism program possessed an advanced level of vocabulary skills, setting an advantage in their academic performance

The table below showed how the researcher measured and assessed the learners' language skills by the used of the scale to measure the level of the vocabulary skills of the ESL Learners.

### The Level of Vocabulary Skills of ESL learners based on Post-Test

Table 2.1 Scale for the Level of Vocabulary Skills of ESL Learners

| Scale   | Interpretation |
|---------|----------------|
| 41 – 50 | Excellent      |
| 31 – 40 | Very Good      |
| 21 – 30 | Good           |
| 11 – 20 | Fair           |
| 0 – 10  | Poor           |



Table 3. Distribution Level of Vocabulary Skills of ESL Learners Based on Post-Test

| CATEGORY     | FREQUENCY | PERCENTAGE    |
|--------------|-----------|---------------|
| Good         | 5         | 16.7          |
| Very Good    | 19        | 63.3          |
| Excellent    | 6         | 20.0          |
| <b>TOTAL</b> | <b>30</b> | <b>100.00</b> |

After the Kahoot intervention for eight (8) weeks, there was an evident increase in vocabulary levels, as indicated by the post-test results. A decrease from 20% to 16.7% in "Good" proficiency was observed, whereas 20% held "Excellent" levels; the majority (63.3%) were at "Very Good" levels.

Only five learners were left in the Good category, whereas 19 students increased the vocabulary levels after the experiment. Meanwhile, five learners fell under excellent level whose test scores were notably high and competitive.

This implies that Kahoot is effective in enhancing vocabulary acquisition, specifically among students who were initially classified as "Good," thereby potentially equipping them with greater vocabulary language proficiency. This finding is consistent with the findings of Jia, Pack, et al. (2023), highlighting the capacity of game-based learning to accelerate the development of vocabulary among ESL learners.

### Significant Effect of the use of Kahoot on vocabulary skills of ESL learners

Table 4. Analysis of Effect of Kahoot Usage on Vocabulary Skills Based on Post-Test Results of ESL Learners

| VARIABLES | MEAN | SD  | T-VALUE | P-VALUE | DECISION  |
|-----------|------|-----|---------|---------|-----------|
| PRE-TEST  | 3.57 | .50 | -5.037  | .000*   | REJECT HO |
| POST-TEST | 4.03 | .61 |         |         |           |

The data presented in Table 4 suggested that the lessons carried out using Kahoot provide more permanent learning compared to lessons in a traditional classroom. The data showed a statistically significant improvement in vocabulary skills, as evidenced by the pre-test and post-test mean scores of 3.57 and 4.03, respectively ( $t=-5.037$ ,  $p=0.000$ ). It implied that the Kahoot intervention positively affected the vocabulary acquisition of the ESL students. The findings align with an earlier study conducted by Franciosi (2017), which pointed out the effectiveness of game-based learning in enhancing vocabulary acquisition.

### CONCLUSIONS/RECOMMENDATIONS

1. The game-based app Kahoot! boosts the motivation and interest of learners who are led to actively participate, and foster an interactive learning atmosphere. It also establishes healthy classroom competition and collaboration.
2. Kahoot! promotes positive reinforcement through reward system. Having this reward system made the whole learning experience more enjoyable and fulfilling for learners. Also, it cultivates meaningful and permanent learning experience.
3. Based on pre-test and post-test scores, there is an improvement in the English vocabulary skills of the learners after the intervention of Kahoot.
4. Using Kahoot! in English language teaching made a significant effect on ESL learners' vocabulary skills.
5. The findings of this study are empirically beneficial in crafting vocabulary test bank for English language acquisition.
6. The use of Kahoot has a significant effect on the vocabulary skills of ESL learners. Thus, the null hypothesis is rejected.

7. Incorporate additional motivating elements.
8. Foster collaboration and teamwork.
9. Nurture positive behaviors through reinforcement.
10. Integrate real-life contexts.
11. Eliminate technical deficiencies of learners and teachers.
12. Develop fun and engaging game-based worksheets for vocabulary development.

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