The Effect of Quizizz and Kahoot! Applications on Developing EFL Vocabulary Learning among Freshmen Students at Faculty of Education

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فاعلية تطبيقات Quizizz and Kahoot! في تنمية تعلم مفردات اللغة الإنجليزية كلغة أجنبية لدى طلاب الفرقة الأولى بكلية التربية

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(تخصص اللغة الإنجليزية)

كلية التربية – جامعة بنها

Abstract

The present study aimed at investigating the effect of Quizizz and Kahoot! applications on developing EFL vocabulary learning among freshmen students at Faculty of Education. The participants of the study consisted of 30 freshmen students enrolled in the English section at Faculty of Education, Benha University. The study followed the one-group pre-posttest design. The instruments of the study included the Academic Word List (AWL) developed by Coxhead (2000), a list of confusing words, EFL vocabulary learning tests (pre &post equivalent form). The EFL vocabulary learning pre-test was pre-administrated to the study participants. After implementing the intervention, the EFL vocabulary learning posttest was administrated to the study participants. The results revealed that the use of Quizizz and Kahoot! applications was effective in developing freshmen students' EFL vocabulary learning.

Keywords: *EFL vocabulary learning, Quizizz, Kahoot!, freshmen students, English section students*

المستخلص

هدفت الدراسة الحالية الي تناول فاعلية استخدام تطبيقات !Quizizz and Kahoot لتنمية تعلم مفردات اللغة الإنجليزية كلغة أجنبية لدى طلاب الفرقة الأولى بكلية التربية. وتكونت عينة االدراسة من ٣٠ طالب من طلاب الفرقة الأولي شعبة اللغة الأنجليزية بكلية التربية جامعة بنها. وأشتملت أدوات الدراسة على قائمة الكلمات الأكاديمية (AWL) ، وقائمة بالكلمات المحيرة ، واختبار تعلم مفردات اللغة الإنجليزية كلغة أجنبية (قبلي وبعدي). وقد استخدمت الدراسة التصميم التجريبي ذو المجموعة التجريبية الواحدة. وتم تطبيق اختبار تعلم مفردات اللغة الإنجليزية كلغة أجنبية القبلي بشكل مسبق للمشاركين في الدراسة. وقد تم تطبيق اختبار تعلم مفردات اللغة الإنجليزية كلغة أجنبية البعدي للمشاركين في الدراسة، بعد تنفيذ المعالجة. كشفت النتائج أن استخدام !Quizizz and Kahoot كان فعالاً في تنمية تعلم مفردات اللغة الإنجليزية كلغة أجنبية لدي عينة الدراسة. وأشارات نتائج الدراسة الى وجود فروق ذات دلالة أحصائية بين متوسطات درجات طلاب المجموعة التجريبية فى القياس القبلي والبعدي فى تعلم مفردات اللغة الإنجليزية كلغة أجنبية ككل لصالح القياس البعدي. وترجع هذه النتائج الى فاعلية استخدام تطبيقات !Quizizz and Kahoot.

الكلمات المفتاحية: *تعلم مفردات اللغة الإنجليزية كلغة أجنبية ، Quizizz، ! Kahoot ، طلاب الفرقة الأولي، شعبة اللغة الإنجليزية*

Introduction

English is a widely used international language in the world. It has four aspects and skills that must be known by the learners. The four aspects are spelling, pronunciation, vocabulary and grammar. Meanwhile, the four skills are listening, speaking, reading and writing. Those four aspects can develop the four skills in the English language. One element that is crucial to the four language skills is vocabulary. No language can stand without words. Having an extensive vocabulary will help learners express themselves clearly and communicate well with clarity.

Vocabulary is an essential method for expressing thoughts and feeling, either in speech or writing. Without vocabulary, neither literature nor language would exist. With words, individuals can tackle their own tasks. People with a large vocabulary can speak and write English correctly. Thus, vocabulary learning is crucial for learning a new language. Because English is a foreign language. In fact, meaningful communication in foreign language is impossible without vocabulary. It should be seen as an integral aspect of learning a foreign language because it facilitates communication (Mohammad et al., 2018, p. 173-174).

Vocabulary, according to Hunt and Belgar (2002), is "a core component of language proficiency and provides much of the basis for how learners speak, listen, read and write" (p. 255). Moreover, vocabulary can be defined as "the words of a language, including single items and phrases or chunks of several words which covey a particular meaning, the way individual words do" (Lessard-Clouston, 2013, p. 2). Furthermore, vocabulary is a list of words as a basic component of language proficiency which containing meaning, form and use of the word (Rohmatillah, 2014, p.72).

Vocabulary knowledge is more than just reading a word. It is a multidimensional process that is occurring over time (Antonacci & O'Callaghan, 2012, p.86). One aspect of vocabulary knowledge is the breadth and depth of vocabulary (Curtis, 2006, p.53). Vocabulary breadth is the number of words that learners know within a foreign language. Whereas, vocabulary depth is the number and nature of words that learners can use to convey their ideas and communicate (Milton, 2009, p. 4). The breadth of a learner's vocabulary (vocabulary size) is the number of words for which the individual is quite familiar with their meaning. While depth of vocabulary refers to how much learners know about the meanings of the words they have familiarity with (Curtis, 2006, pp.53-54).

Vocabulary words had been classified, according to Hiebert and Kamil (2005:3), into oral and print vocabulary. Oral vocabulary is the group of words for

which individuals know the meanings when speaking or reading orally. Print vocabulary composes of those words for which the meaning is known while writing or reading silently. Moreover, the vocabulary could be sorted into two groups: inactive (passive) and active vocabulary. Passive vocabulary includes words that individuals comprehend through listening or reading, yet cannot be recalled or used in speech or writing. Whereas, active vocabulary refers to the words that individuals can comprehend and produce either in their speech or writing (Alsalihi, 2020, p. 19).

In addition, words had been classified, according to Nation (2000, 2001), on the basis of their frequency in various discourse types into four categories: high-frequency, low-frequency, technical vocabulary and academic vocabulary. High-frequency words are the words that constitute a very large proportion of the running words used in spoken and written texts and occur in all types of the language uses (Nation, 2000, p. 21). Whereas, low-frequency words are moderate frequency words which did not manage to get into the list of high frequency words. They are words occurring very infrequently and occupy just a small proportion of any text. Many words of low frequency are proper names (Nation, 2000, pp. 28-29).

The terms "technical and academic vocabularies" refer to words that are more frequent within specific types of discourse. Technical vocabulary is words that are very frequent within a certain topic or discipline but less frequent outside that area. Such words represent specialized knowledge essential to learning a specific topic such as psychology, or engineering (Nation, 2001, p. 12). The academic vocabulary is used for general academic purposes. Sometimes, it has been referred to as sub-technical vocabulary since it does not include technical words but rather it contains formal vocabulary (Nation, 2000, p. 24-27).

Nation (2005:48) stated six principles of teaching vocabulary. First one is maintaining simple and clear teaching without any complicated explanations. Second one is relating current teaching to past knowledge through showing a pattern or analogies. Third one is using of oral as well as written presentation. Fourth one is giving the words that are already partly known the most attention. The fifth one is telling learners whether it is a high-frequency word that is worth noting for future attention. The last principle is not adding in other unknown or poorly known related words like close synonyms, opposites, or members of the same lexical set.

There is a main question concerning vocabulary instruction which is "what words should we teach to language learners?" The vocabulary control movement in the early twentieth century recommended that the number of words taught to language learners be limited, and that these words be carefully chosen. Many research studies were conducted in order to determine the most essential words, and numerous lists were created. The most important was General Service List (GSL) by West (1953), which listed 2000 English word families that were thought to be the most common and thus the most essential in English. Since then, the word list has been widely utilised as a foundation for language teaching and research (Safari, 2019, p. 102).

Some studies attempted to develop a vocabulary list for general academic uses as the academic register's sub-technical vocabulary. The researchers attempted to work out the most important words of academic English beyond West's (1953) GSL, assuming that university students know a general service vocabulary (Safari, 2019, p. 104). Then, the University Word List (UWL) was created by Xue and Nation (1984). This combined list of academic vocabulary was created with the goal of including words not found in the GSL (West, 1953), but that appear often in academic writings. After that, the Academic Word List took the place of the University Word List (Coxhead, 1998) (Nation, 2000, p. 304).

The most useful vocabulary is determined by the learners' objectives. The Academic Word List (Coxhead, 2000) is the most useful vocabulary to learn if learners desire to do academic study in senior high school or university (Nation, 2003, p. 136). In the tertiary level, Academic texts are frequent materials for students in the four language skills. As a result, learners at the tertiary level of education should be taught academic words (Anjaniputra & Salsabila, 2018, p. 4).

The AWL has 570-word families that make up about 10% of total words (tokens) in academic texts but just 1.4 % of all words in a fiction collection of the same size. This difference in coverage indicates that the list is primarily composed of academic words. By identifying the words that university students encounter in variety of academic texts, The AWL shows students who are pursuing academic goals which words are the most important to learn. The list can also be used as a starting point for more research into the nature of academic vocabulary (Coxhead, 2000, p. 213). Learners studying humanities, science, or commerce will benefit from the words in the academic vocabulary. The list is not limited to a single field

of study. What makes this vocabulary of great importance is that the coverage it provides for various kinds of texts (Nation, 2000, pp.24-25).

In spite of the importance of EFL vocabulary learning, EFL learners still have problems with learning it. Some of such difficulties are recognising the meanings of new words, pronunciation of new words, use of new words correctly, spelling as well as memorizing new vocabulary (Afzal, 2019, p. 81). In addition, concerning learning the meaning of new vocabulary, EFL students face some difficulties such as using synonyms, words with different uses and the use of prefixes and suffixes (Khan, 2011, p. 1255).

Moreover, at the university level, EFL students face difficulties in EFL vocabulary learning. Masoud and Ibrahim (2017: 184-185) pointed out some problems that face second year English majors at the Faculty of Education, Minia University. Some of these problems are memorising and remembering the word meanings, low level of vocabulary proficiency, not knowing enough words, forgetting the learnt words, failing to use words communicatively as well as low vocabulary retrieval. In addition, there are some studies referring that university students face some difficulties concerning synonyms use such as (Abdulaal, 2019; Eissa, 2015; Sheir et al., 2016). These studies indicate that EFL students make many lexical errors due to the confusion of near synonyms and apparent similarity in spelling.

Thus, due to EFL vocabulary learning importance, research focuses on new approaches and methods of teaching vocabulary that can help students learn vocabulary more effective than using traditional methods. It is worthy to note that the evolution of new technologies offered ELT effective means and methods of teaching language including vocabulary. Therefore, it is justifiable to suggest that multimedia software be utilized in language teaching (Astika, 2014, p. 375). The integration of technology means helps facilitate the process of vocabulary learning and teaching (Alsaif & Deris, 2019, p. 79). In addition, modern technologies use helps students learn vocabulary more effectively (Alhamami, 2016, p. 92). Technological advances in recent decades provide unprecedented opportunities for teachers to teach L2 learners vocabulary and for the latter to learn vocabulary (Ma, 2017, p. 45). Digital tools and media help improve vocabulary learning by capturing students' interest and attention and offering more efficient scaffolds and contexts for learning with and about words (Hermagustiana & Rusmawaty, 2017, p. 138).

Consequently, this study investigated the effect of Quizizz and Kahoot! applications on developing EFL freshmen students' vocabulary learning.

Gamification according to Werbach and Hunter (2012) is "the use of game elements and game-design techniques in non-game contexts" (p.26). It refers to the incorporation of computer games elements such as points, badges, and leaderboards into non-game contexts to take advantage of the motivation provided by the game environment (Lister, 2015, p. 1). Furthermore, gamification is "a process in which people make use of the thinking and mechanics behind games in non-game contexts" (Pujolà & Appel, 2020, p. 111). Therefore, the goal of gamification is taking the elements that normally operate within the game realm and effectively implement them in the real world (Werbach & Hunter, 2012, p. 29).

In technological gamified learning experiences, students can have the potential to select, modify, and create the gamified application which helps them learn and develop new skills. In these contexts, applications are the parts of the process, from pre-to post-assessment stages. Technological gamified learning experiences are typically based on the work environment that is collaborative or team-based. This lets students share their experiences and achievements with the other and learn from others in return. Applying elements of games allow students to know their existent skills level and get a chance to have immediate feedback. The learning environment is active, where students perform better contributing to increased competitiveness. Moreover, the integration of the latest technology and equipment such as tablets, laptops, mobiles, online forums, and Learning Management Systems (LMSs), enhances the performance and engagement of today's learners with every level they pass (Goethe, 2019, pp. 67-68).

Applying gamification in L2 learning positively contributes to the learning experience. Gamification benefits the L2 learner in a number of personality factors. Besides, the learner moves forward from an introverted shyness mode and become more motivated due to the positive feedback and the elements of game used. Gamifying the L2 classroom helps improve speaking, reading and writing learning and promote interaction and collaboration. In order for gamification to be effective in L2 learning, the objectives need to be aligned and have formal assessment criteria (Flores, 2015, p. 50).

Learners who play online vocabulary games seem to learn better and have the potential to maintain the learned vocabulary for a longer period of time and retrieve more words. The process of vocabulary building is considered a long process. If the

games are fun, exciting, relaxing, enjoyable, motivating and encouraging confidence, the interest of the learners is more likely to be triggered. To make sure that learning continues, games must provide continuous motivation. In addition, online games are seen as effective vocabulary learning tools by both students and teachers, besides, students tend to prefer online games as a learning tool compared with face-to-face learning lessons (Yip & Kwan, 2006, pp. 246-247).

In language classrooms, technology is required to promote learning, and gamification is considered one of the latest methods applied in language classrooms (Medina & Hurtado, 2017, p. 441). Such technology, gamification, is adaptive. It provides feedback tailored to the needs of each student. Therefore, it supports differentiated approaches helping students acquire vocabulary in a contextualized as well as rote fashion (Abrams & Walsh, 2014, p. 49).

One of the digital gamified applications is Quizizz. It is a game-based online tool which offers enjoyable multiplayer educational activity and allows learners to practice with their gadgets. Students can use their mobile devices to work interactively on the offered questions with this application. They can get a better learning experience through using this application since they will be able to compete with their peers when taking the test. At the same time, students can also see directly their place among other players in the learderboard (Permana & Permatawati, 2020, pp. 155-156). In every asked question, teachers can include a picture if needed. They can also determine the quest be public or private. For students, they can access the quest by entering the code number and their name and then answering the questions. The students do not need to be logged in to participate in the quiz. The quest can be taken as a live-game that takes place in the classroom, or as a homework assignment. Quizizz helps teachers create a student-paced formative assessment which is customised to the student's speed (Permana & Permatawati, 2020, p. 156).

Quizizz has a number of advantages in terms of English teaching and learning. Quizizz can be used to motivate students and stimulate their interest in the content being taught in the classroom. It has an appealing, intriguing, and fun display; students cannot cheat during the test; it fosters a competitive environment in the classroom; and it is superior to traditional formative tests (Amalia, 2020, pp. 2-7). It assists teachers in measuring students' language and their understanding of the curriculum as well (Bury, 2017, p. 87). It makes inclass activities interactive

and fun. Unlike other educational apps, Quizizz incorporates game elements such as avatars, themes, memes and music into the learning process, making it more enjoyable. Instructors may keep track of the process and, once the quiz is over, get the report to assess students' performance. (Zhao, 2019, P. 37).

Quizizz is a entertaining way for learners to review their vocabulary during the class time It has the potential to engage students and boost their involvement in the teaching and learning process. Quizizz is an entertaining way to pass the time. Moreover, it can aid students in revising their vocabulary and recalling the game events. In addition, it can help learners remember the language associated with it (Pavita & Nirmala, 2021, p. 222).

Another digital gamified app is Kahoot! It is a game-based student response system that turns a classroom into a game show for a short period of time. The teacher takes on the role of a game show host, while the students take on the role of contestants The teacher's computer, which is connected to a large screen, displays questions and possible answers, and pupils respond as quickly and accurately as possible on their own digital devices. Between questions, a distribution chart of the students' responses is displayed The chart allows the teacher to gain feedback on how much the class understands about a topic and allows the teacher to better explain the parts where students are lacking understanding. Between the questions, a scoreboard displays the top five students' nicknames and scores, and a winner is announced at the end of the gameKahoot! increases participation by using humorous and colourful images and audio The key difference between a game-based student response system (GSRS) and a traditional student response system (SRS), according to observations and feedback from teachers using Kahoot!, is the excitement and engagement that gamification provides (Wang, 2015, p. 218).

Similar to Kahoot!, has some aspects that are more noticeable than Kahoot!. Quizizz is a very useful app for both student and teacher. Each student's pace is displayed on their screen, allowing them to answer questions at their own pace and to review their answers at the end. In addition, teacher receive detailed class and students level insights for every quiz as weel as the optionto save the report as an Excel spreadsheet. Other Quizizz features include BYOD (Bring Your Own Device), which allows students to use any browser-enabled device, including PCs, laptops, tablets, and smartphones. (Lestari, 2019, p. 16).

There are some studies have been conducted to investigate the relationship between Quizizz and Kahoot! and EFL vocabulary learning at university level. Bal

(2018) aimed to investigating the relationship between "Quizziz" app and vocabulary learning. The participants of the study were sixty students at a university in Turkey who were divided into two groups. The findings showed that the experiment group outscored the control group.

Dewi, Santosa and Suta (2020) explored the effectiveness of using several mobile applications in developing students' vocabulary mastery. The mobile applications used include Quizizz, WhatsApp, Quizlet, Padlet and Instagram because of their potential features, popularity and familiarity. The participants of the study were 34 experimental students and 33 control students from English Language Education Department of Ganesha University of Education. The findings revealed that using mobile learning technologies such as Quizizz, WhatsApp, Quizlet, Padlet and Instagram assists in developing vocabulary learning and helps students to understand and acquire richer words of the target language.

Al Shra'ah (2021) explored the influence of Kahoot! on developing EFL vocabulary acquisition and reading comprehension among Saudi students and their attitudes towards it. Seventy-seven male EFL Saudi students at Imam Mohammed Ibn Saud Islamic University at Deanship of Preparatory Programs participated in the study. They were divided into experimental and control groups. A vocabulary test, a reading comprehension test, and a questionnaire were used in the study. The findings revealed the use of Kahoot was effective 8in developing EFL vocabulary acquisition and reading comprehension.

Sibatuara (2021) investigated the effect of using Kahoot! application on developing the students' English vocabulary. The study participants were English Program students of Widya Dharma University, Pontianak. The results revealed that Kahoot could greatly help the study participants in developing their English learning vocabulary as well as it could increase their motivation in gaining the knowledge of getting the new vocabularies.

To sum up, gamification applications such as Quizizz and Kahoot! have been proved to be beneficial in EFL vocabulary learning. It can offer the repeated exposures required for vocabulary retention and mastery. As in the technological era, there are several apps and platforms of gamification that can help students learn vocabulary. Thanks to the fun, interesting, interactive and engaging nature of gamification apps, vocabulary learning becomes enjoyable. Due to their features such as points, badges, leaderboard, progress bar, reward system, immediate

feedback, collaboration and competition, students can feel encouraged and motivated to learn new vocabulary.

Context of the problem

In spite of the importance of EFL vocabulary learning among university students, it has always been a weak point, and many studies have indicated that there is such deficiency, such as Al-Feky (2021), Agameya and Soliman (2019), Badawi (2016), Hawass (2019), Saleh (2014), El-Hilaly (2016), Helwa (2017) and Shehata (2017). They investigated the problems of EFL vocabulary learning and introduced different interventions and solutions for developing EFL vocabulary learning among university students. After reviewing previous researches and related studies, it was found that learning vocabulary is problematic for EFL learners, especially at university level. They encounter problems with vocabulary retention and memorization. They find difficulty in identifying meaning of new words and in translating different texts. Moreover, due to the lack of their vocabulary knowledge, they have difficulties in communication situations. Thus, using a new intervention is needed.

To document the problem of the study, the researcher conducted a pilot study on a random sample consisting of 20 freshmen students enrolled at English section at faculty of education, Benha university during the first term of the academic year 2019/2020. The researcher used a vocabulary test adopted from Hawass (2019). The results of the pilot study revealed that freshmen students have problem with EFL vocabulary. It showed that only 3 out of 20 students got more than 50% of the test score. While the rest of the students got scores below 50%. Thus, it is evident that freshmen students have problems in their EFL vocabulary.

Statement of the problem

The problem of the present study could be stated as follows:

In spite of the importance of EFL vocabulary among freshmen students enrolled in the English section at faculty of education, they have problems with them. Thus, the present study aims at investigating the effect of Quizizz and Kahoot! applications on developing freshmen students' EFL vocabulary learning.

Questions of the study

To overcome this problem, the present research was an attempt to answer the following questions:

1. What are the EFL vocabulary required for freshmen students?
2. What are the features of Quizizz and Kahoot! applications for developing EFL vocabulary learning among freshmen students?
3. What is the effect of Quizizz and Kahoot! applications on developing EFL vocabulary learning among freshmen students?

Delimitations of the study

The present study will be delimited to the following:

1- A group of freshmen students enrolled in the English section at Faculty of Education, Benha University.

2- Some EFL vocabulary that are required for freshmen students.

Participants of the study

The participants of the study were randomly drawn from first year students during the second semester of the 2020-2021 academic year. There was one experimental group consisting of 30 students (male/female) enrolled in the English section at Benha Faculty of Education.

Instruments of the study

To achieve the purpose of the study, the following instrument was developed and used by the researcher: EFL vocabulary learning test (pre-post equivalent form) for measuring students' EFL vocabulary learning.

The EFL vocabulary learning test

The EFL vocabulary learning tests was developed by the present study researcher. A pre-test was used to measure the mastery of the study participants of some words of the Academic Word List and the confusing word list. A post-test was also developed to investigate the effect of Quizizz and Kahoot! applications on developing the freshmen students' EFL vocabulary learning after the experimental treatment had been carried out.

Validity of the EFL vocabulary learning test

To estimate validity, the EFL vocabulary learning test were submitted to 11 jury members in EFL curriculum and instruction. They were asked to state their opinions regarding clarity of the test's instructions given to student, suitability of the test for students' level, clarity of the test questions and relatedness of each question to the test objectives.

The jury members agreed on the suitability of the test items to the aspects to be measured. Clarity of the test instructions and questions, suitability of the test for students' level and relatedness of each question to the test objectives were reported.

Reliability of the EFL vocabulary learning test

For estimating the reliability of the EFL vocabulary learning test, the researcher used test re-test method. The researcher administrated the test again to the same group after two weeks. The correlation coefficient between the findings of the first and second administration of the test was measured by Pearson correlation through the use of the Statistical Package for Social Sciences (SPSS) version 18. The coefficient reliability between the two administrations in the test as a whole was 0.945. This showed that the EFL vocabulary learning test is reliable for the purpose it was intended to measure.

Aims of the intervention

The study aimed at developing EFL vocabulary learning for freshmen students enrolled in the English Section, faculty of Education, Benha University. Therefore, by the end of the treatment, the participants would be able to:

1. identify the importance of EFL vocabulary learning in general and to first year faculty of education students in particular.
2. recognise the significance of the AWL and the confusing words list to first year faculty of education students in particular.
3. identify some important aspects of vocabulary learning relating to the AWL and the confusing words list.
4. identify word meaning relating to the AWL and the confusing words list.
5. identify the part of speech of the AWL and the confusing words list.
6. identify word synonyms and antonyms relating to the AWL and the confusing words list.
7. identify some compounding and collocations relating to the AWL and the confusing words list.
8. identify word derivatives of the AWL and the confusing words list.
9. use the AWL words and the confusing words in sentences.

Duration of the intervention

The implementation of the intervention lasted for 6 weeks during the second semester of the academic year 2020-2021. It started from Tuesday 13/4/2021 to Thursday 27/5/2021. The time of each session was varied from 60 to 90 minutes.

Implementation procedures of the intervention

I. Pre-assessment

Before the implementation of the intervention, the EFL vocabulary learning pre-test was administrated to the participants of the study. Instructions for the test were given orally by the researcher of the present study. The participants' answers were analyzed and scored.

II. Implementation of the the intervention

After the study participants were pretested, the researcher implemented the the intervention in the Instructional Aids Laboratory at Faculty of Education, Benha University. It lasted 6 weeks with 18 sessions, each session varied from 60 to 90 minutes. In the first session (orientation session), the researcher introduced to the participants what they are going to do, the objectives and stages of the intervention and the benefits for them to develop EFL vocabulary learning as freshmen students. While the rest of the sessions were instructional ones.

At the beginning of each session, the researcher presented the objectives of the session, the instructional content, the teacher's role and the students' role. Then, the students practice the newly instructed vocabulary words through digital gamification activities and tasks. At the end of the session, the researcher assigned the study participant some online activities as a consolidation to make sure that the students achieved the session's objectives

III. Post-assessment

At the end of the experiment, the researcher administrated the EFL vocabulary learning post-test to the study participants to identify the effectiveness of using Quizizz and Kahoot in developing EFL vocabulary learning among freshmen students at Benha Faculty of Education. The results revealed that the use of Quizizz and Kahoot is effective in developing EFL freshmen students' EFL vocabulary learning.

Evaluation techniques used in the study

The evaluation techniques used in the study included two types: formative and summative.

- **Formative evaluation:** it was used for assessing the participants' progress in EFL vocabulary learning and for providing necessary and immediate positive feedback.

- **Summative evaluation:** it was conducted at the end of the experiment through administrating the EFL vocabulary learning post-test to identify to what extent the objectives of the intervention have been achieved and investigating its effectiveness in developing the participants' EFL vocabulary learning.

Findings and Discussion

The overall aim of using Quizizz and Kahoot! applications was to develop EFL vocabulary learning for freshmen students, enrolled in the English section at Benha Faculty of Education. To measure the effectiveness of the intervention, an EFL vocabulary learning pretest was administrated to the experimental group. Then the experimental group was post-tested using the EFL vocabulary learning posttest to find whether there was significant difference between the mean scores of the participants in the pre and post assessment of EFL vocabulary learning test. To test this hypothesis, the Paired-Samples T-Test was used. The following table and figure present the mean scores, standard deviations (S.D), t-value and level of significance of the pre-and post-assessment of the experimental group in the EFL vocabulary learning test.

Table (1): Findings of the t-test difference between the participants' mean scores in the pre- and post-assessment of overall EFL vocabulary learning

Aspect	Test	No.	Mean	Std. Deviation	t-value	DF	α Sig
Overall EFL vocabulary learning	Pre	30	17.33	4.97	24.677	29	0.01
	Post	30	37.80	1.37			

The following figure shows the difference between the mean scores of the study participants in the pre- and post-assessment of the EFL vocabulary learning as a whole.

40

30

20

10

EFL vocabulary learning as a whole

■ Pre ■ Post
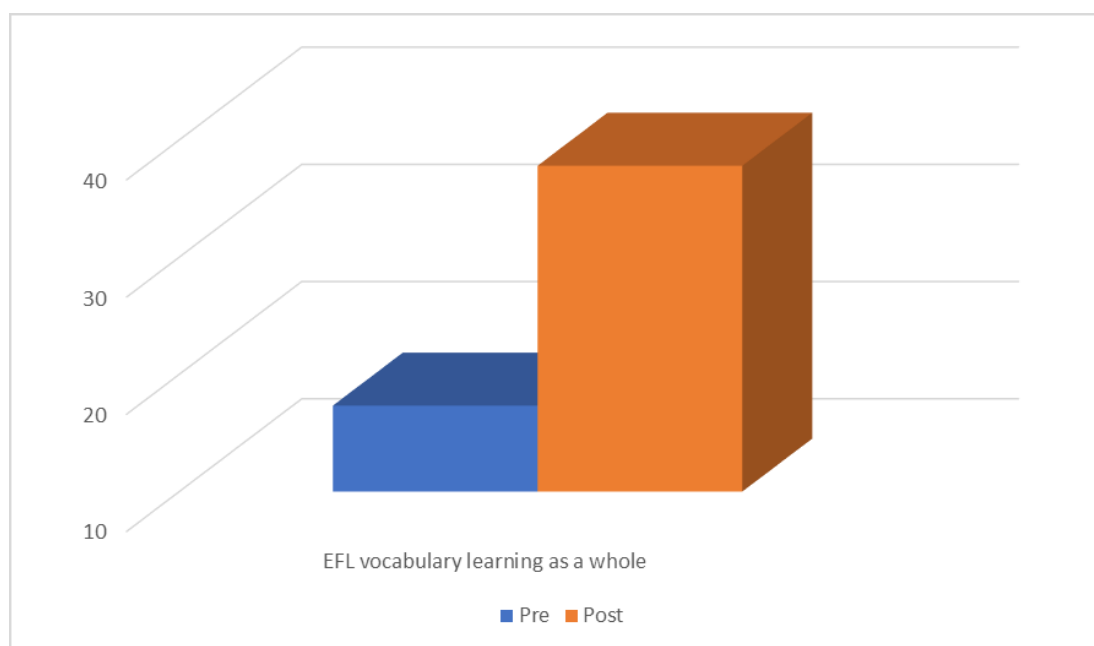
The above table and figure indicated that there is a statistically significant difference at the level ($\alpha \leq 0.01$) between the mean scores of the study participants in the pre-and post-assessment for the overall EFL vocabulary learning. This indicates that a large proportion of the differences are due to the experimental treatment. Thus, there is a highly significant effect of the experimental treatment on the test as a whole. Thus, this hypothesis was verified.

Based on the previously mentioned findings, it can be concluded that the participants' performance in EFL vocabulary learning has been developed. This result may be attributed to the use of digital gamification principles and elements. Some of these principles and elements are mechanics (challenges, chance, competitiveness, collaboration, feedback, rewards, turns, winning states), dynamics (emotions, progress, relationships), components (achievements, avatars, points, badges, leaderboards, combat, levels, quests, teams) and technology. Such elements created a fun, relaxing, interesting, comfortable and enjoyable environment that helps the study participants to be engaged and increases their level of motivation towards the learning process.

Moreover, the various vocabulary learning activities used helped the study participants to practice the target words individually, in pairs and in groups which helped them achieve more improvement in an independent and cooperative environment. Also, digital gamification-based activities and tasks provide the study

participants with immediate feedback which helped them be encouraged and motivated to perform better.

Thus, the use of Quizizz and Kahoot! applications has proved to be effective in developing EFL vocabulary learning. This result is consistent with other researchers such as (Al Shra'ah, 2021; Bal, 2018; Dewi, Santosa & Suta, 2020; Sibatuara, 2021).

Consequently, it could be included that using Quizizz and Kahoot! applications was effective in developing EFL freshmen students' vocabulary learning.

Recommendations of the study

Based on the findings of the study, the following recommendations are suggested:

1. More attention should be paid to the importance of EFL vocabulary learning for freshmen students.
2. More emphasis should be placed on the Academic Word List and the Confusing Words List for EFL freshmen students.
3. Greater concentration should be paid to Quizizz and Kahoot! in designing EFL freshmen students' courses.
4. There should be greater focus on the effectiveness of Quizizz and Kahoot in developing English language in general and EFL vocabulary learning in particular.
5. More interest should be given to gamification's Apps, digital games and gamified online quizzes that offer the EFL students more practice in a fun and interesting atmosphere.

Suggestions for further research

Based on the results of the present study, the following suggestions can be provided for further research:

1. Using Quizizz and Kahoot! for developing EFL vocabulary learning and increasing students' engagement among secondary school students.

2. Using Quizizz and Kahoot! for developing EFL grammatical competence skills among preparatory school pupils.

3. The effectiveness of Quizizz and Kahoot! in developing freshmen students' pronunciation skills.

4. The effectiveness of Quizizz and Kahoot! in developing reading comprehension skills among freshmen students.

5. Using Quizizz and Kahoot! for developing EFL spelling skills among primary school pupils.

6. Using Quizizz and Kahoot! for developing EFL listening skills among freshmen students.

7. Using Quizizz and Kahoot! for developing EFL writing skills among freshmen students.

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