

EFFECTIVENESS OF KAHOOT! APP IN TEACHING ENGLISH TO THE PERFORMANCE OF HIGH SCHOOL STUDENTS

Dr. Louie B. Villanueva
Assistant Professor III
Mariano Marcos State University-College of Teacher Education
Laoag City, Ilocos Norte, Philippines

Jay-raId M. Sinampaga
Graduating Student, BSE-English
Mariano Marcos State University-College of Teacher Education
Laoag City, Ilocos Norte, Philippines

ABSTRACT

Several studies have conducted along the use of interactive tools in teaching English to test its effectiveness. Hence, this study used Kahoot! App as a tool in teaching English to high school students and determined its effect. It involved 30 Grade 7 students who were enrolled in English 7 during Academic Year 2021-2022. Class observations and interviews were done and it was found that students were rarely volunteering to answer questions and contribute to the discussion because of the traditional tools used by the teacher. Thus, to further validate this, the respondents were given a pretest and posttest. This was to determine whether there is a significant difference in the mean score of the respondents before and after the intervention was employed. Result of the pretest and posttest show that the mean score of the respondents in their pre-test for week 1 was 5.83 (*Fair*) and 6.33 (*Fair*) for week 2, while their posttest mean score for week 1 was 14.67 (*Very satisfactory*) and 14.60 (*Very satisfactory*) for week 2. Further, -21.70 for week 1 and -25.00 for week 2 as t-values mean that the students gained a lower score in their pre-test than their post-test. In addition, the p-value of 0.000 is less than the .01 level of significance which means that there is a significant difference of the pre-test and the post-test. This implies that the intervention of this research study proved to improve the participation of the students in English. Hence, it is strongly recommended for teachers to use Kahoot! App in their English classes to also identify its result.

Keywords: *Assessment Tool, Kahoot! App, Student's Participation, English Performance, Google Form*

INTRODUCTION

Since the outbreak of the COVID-19 pandemic, which restricted face-to-face instruction, most of the educational institutions have been obliged to continue education through online learning. In online learning, various challenges are face by students and teachers. Reimers et al., (2020), asserted that one of the main hindrances to learning that are observed in online environments is relatively the poor active participation of the students.

Dlab et al., 2020, defined participation as the capacity for students to involve themselves in virtual settings in a variety of ways. In the study of Sivapalan & Cregan, (2015) and Kent et al., (2018), participation is one of the fundamental variables that determines learning in online environments. This may be because greater participation means a greater probability of student interaction, greater participation means more communicative exchanges, or greater participation leads to a better learning experience (Isohätälä et al., 2017; Kim & Ketenci, 2019).

Based on the researchers' in-depth observations during their Field Study 1-Observations of Teaching-Learning in an Actual School Environment and at the beginning of their Field Study 2-Participation and Teaching Assistantship, teachers were challenged in maintaining students' participation during online classes. Students rarely volunteer to answer questions, and at some

point, some of the students tend not to open their cameras or microphones when they are being called by the teacher to recite or participate in the discussion.

Low learner participation is one of the most significant issues in online education. This could be caused by poorly designed interaction opportunities for learners. It is commonly argued that learner participation may be enhanced by using interactive application in online learning environment (Haythornthwaite, 2002). Croxton (2014) found that purposefully designed and engaging interaction tasks played a significant role in learner persistence in online courses. Therefore, it is imperative that we design online learning environments to foster meaningful interactions for learners (Bettinger, Liu, & Loeb, 2016; Goggins & Xing, 2016; Hrastinski, 2008).

In this regard, several research studies highlighted that interactive application improves participation and motivation while increasing the meaningful learning of students. A study by White and McCoy (2019) agreed and stated that online interactive application was persistently used in e-learning environment as they have helped encourage student to become focused and motivated to learn. Similar researches explain the different benefits of integrating interactive online activities in the online classes and mention no negative effects, Gebbels (2018).

The fact that there have only been a few studies that looked at the effects of using Kahoot! on improving student participation, this study is significant. Although there are numerous factors affecting the low percentage of participation of students in various activities during their online class, the researchers conducted an action using the Kahoot! App, which aims to improve students' participation in e-learning setting. Kahoot! App is a game-based student-response system that focuses on engaging the students in the classroom. It is an educational software that offers teachers the ability to create questionnaires, quizzes, discussions, and exams (Tóth, Lógó, & Lógó, 2019).

LITERATURE REVIEW

Technological advancement and its continuous progress have transformed how activities are performed on a daily basis. In the context of education, especially learning, educators now have the opportunity to introduce and integrate play-based learning activities in their instruction. Various studies have found that using technology, including computers, personal tablets, and smartphones, is effective in improving students' engagement and active participation in classrooms (Bransford, Brown & Cocking, 2000; Kim & Reeves, 2007; Koile & Singer, 2006; Rogers & Cox, 2008).

The use of individual devices and computers can enhance a teacher's ability to solicit active participation from all students during lessons, incorporate Internet resources, and evaluate students' progress (Kim & Reeves, 2007; Koile & Singer, 2006; Rogers & Cox, 2008). Such activities provide kinesthetic learners an opportunity to participate actively through movement of their muscles in response to stimulation from the seeing and hearing objects (Grant, 1985; Valiente, 2008).

The incorporation of play in learning has seen emergence of very unique concept of game-based learning. According to Zarzycka-Piskorz (2016), it is basically the use of game elements and design techniques in non-game contexts. The engagement and fun factors of game-based learning have been found to boost learner motivation and sustain retention while promoting acting learning and participation.

Game-based learning tools such as Kahoot! supplement pedagogical practices with new technological solutions. Kahoot! is a game-based student response system that allows teachers and learners in classroom setting to interact through competitive knowledge games using existing infrastructure. Wang, Zhu and Saetre (2016) pointed out that Kahoot! represents a new generation

of student response systems that focuses on student motivation and engagement through gamification.

In a literature review researching trends in student response systems the benefits of SRSs were summarized to be provide interactivity, improve academic performance, and engagement (Aljaloud, Gromik Billingsley and Kwan, 2015)

In a recent study Wang and Lieberoth (2016), involving almost 600 students, reiterated the advantages of using game-based platform for learning; specifically, the reported that variation in the use of audio and points affected concentration, engagement, enjoyment and motivation and that Kahoot!'s audio and music features affected classroom dynamics in a significant and positive manner.

In addition, Urdanel and Sunde (2014) has similar view on the important role of gamification of simple assessment programs and contributes to the success of the learners at different levels (as cited in Bolat, Simsek and Ulker, 2017). In practice, background music, pictures and videos can be added; quizzes can be recorded and retrieved via Internet (Barnes, 2017).

The pursuit for literature review which Kahoot! was reported by the previous researchers, it was discovered in one literature review mentioning about the benefits of GRSs such as GRSs are able to afford interactivity, increase students' performance in academic, and full engagement (Aljaloud et al., 2015). As students nowadays, who are also known as millennials and may be more knowledgeable in certain aspects of technology, it is crucial for teachers to explore new technology and synchronize their knowledge with the students in order to create a meaningful teaching and learning experience.

In the study of Batsila and Tsihouridis (2018), it is clear that Kahoot! is a useful tool for both teachers and students in various aspects. The findings show that Kahoot! App can improve student's engagement and participation and a useful assessment tool to evaluate students' knowledge. In the same study conducted by Wang, Zhu and Saetre (2018), this type of learning tool is an apt to boost participation and engagement which supports learning while evaluating the level of pupils' understanding of a lesson. Putri, (2019) has added, Kahoot! has impacted positively on the interactions in the classroom, student engagement as well as participation.

Kahoot! App is a very beneficial and outstanding tool in today's virtual world of learning. Coming to the advantages, it is very helpful for learners. The following are some of the in-depth advantages of using Kahoot! a). *as the students' interest level is high, the teachers can easily assess the understanding level through quizzes and polls*, b). *it can be used as a tool of assessment for the teachers*, c). *it has effectively reduced students' frustration levels*, d). *the stress about the fear of formative assessments in the traditional method and it has increased the students' performance due to an increase in the student's attendance*.

The findings in this article include the most of the reviewed articles reported a significant positive impact of Kahoot! on student learning performance, motivation and attitude.

METHODOLOGY

Before the employment of the intervention, the researchers observed the Grade 7 students of MMSU-LHS on their participation during online class. The researchers found out that most of the students were not actively participating to the discussion mainly because the teacher is using Google Form. Hence, the researchers tried out Kahoot! App with the aim of helping them improve their participation in class. To collect an in-depth data on the learning problems of the students,

the researchers conducted an in-depth interview with the English teacher of the students. This is to corroborate to their initial observations that the students are partly participating in their classes. Moreover, an interview was also done to selected Grade 7 students to supplement the deficiencies of the quantitative data.

In addition, to determine if there is a significant difference before and after the intervention, the researchers administered the pretest using google form, while the posttest was administered using Kahoot! App. This could help the researchers determine if Kahoot! App is really an effective pedagogical tool in facilitating assessment activities in online learning environment. The researchers devised the content of the pretest and posttest but all the items were from the discussion of the lessons *Distinguishing the features of academic writing* and *Employ a variety of strategies for effective interpersonal communication*. The result of interview, observation, the pretest and posttest were treated qualitatively as well as quantitatively.

Data Gathering Procedures

To validate the researchers' observations and interviews they have gathered, the researchers administered the constructed pre-test that was anchored from the previous discussion and lesson to the Grade 7 students of MMSU-LHS. The test was reinforced through the use of Google Form. The content of the pretest was organized and finalized by the researchers. The pretest was a multiple-choice and true or false type of test with 15 points each on the topics, *Distinguishing the features of academic writing* (EN7WC-I-c-4.2) and *employ a variety of strategies for effective interpersonal communication* (EN70L-I-b1.14) based on the Most Essential Learning Competency in English 7, Quarter 4.

After determining the results from the pretest, and interview from the English teacher of Grade 7 students at MMSU-LHS, the researchers have standardized the content of week 1 and week 2 lessons and learning materials to ensure that all classes have covered the same material in an identical way. The lesson plans, delivery methods, and approach to teaching in the classrooms were also coordinated by the cooperating teacher of the researchers. During the intervention period, each section was given four sessions in two weeks with the incorporation of Kahoot! App features in creating a variety of activities per session. This is also to introduce the features of the Kahoot! App to the students so that they will be familiar when answering the post-test after the teaching demonstration.

In the first week, the topic given to the researchers was "*Distinguishing the features of academic writing*". The teaching method used during the session was the usual way; it started with a motivation, lesson proper, application, and giving assignments. However, during the class discussion, there were several activities created by the demo teachers. They facilitated some activities incorporating the Kahoot! App, particularly in asking questions. To further validate and test the effectiveness of the Kahoot! App, the researchers continued the teaching demonstration for the second lesson with the topic, "Employ a Variety of Strategies for Effective Communication." To standardize the content of the week 2 lesson and materials just like the previous meetings, the researchers have followed the same method and procedure in teaching. After the researchers employed the intervention, the researchers administered the posttest using Kahoot! App to ascertain if there are improvements after the intervention applied. The result from the pretest and posttest was checked, tabulated and analyzed qualitatively as well as quantitatively.

Data Analysis

The researchers have employed both qualitative and quantitative data analysis. Content analysis was used to analyze the qualitative data. Content analysis according to Holsti (2017) is used to analyze group interviews and open-ended questions to complement the quantitative data. In addition, to analyze the quantitative data, descriptive statistics were used. According to William (2018), descriptive statistics are used to present quantitative descriptions in a manageable form. It simplifies large amounts of data in a sensible way.

Moreover, to have in-depth analysis and interpretation of data in the light of the problems of this research study, a central tendency was used, specifically, the mean score or value. As stated by Bhandari (2020), central tendency is very important when performing descriptive statistics. Furthermore, the data gathered in the pretest and posttest were tabulated using the statistical tools such as mean, frequency count and percentage distribution while t-test was used to treat the difference of the pre-and post tests. The data were interpreted using the following range and descriptors taken from the study of Villanueva, (2016).

Range	Descriptive Value
13-15	Very Satisfactory
10-12	Satisfactory
7-9	Good
4-6	Fair
1-3	Needs Improvement

RESULTS AND DISCUSSION

The findings of both the conduct of the pre and post tests as well as their difference were discussed below.

Table 1

The Mean Score of the Students in their 1 Pre-test (Week 1)

Range	Frequency	Percentage	Descriptive Value
13-15	0	0%	Very Satisfactory
10-12	2	7%	Satisfactory
7-9	7	23%	Good
4-6	18	60%	Fair
1-3	3	10%	Needs Improvement
Total	30	100%	

Mean = 5.83
(Fair)

Table 1 unveils the results of the pre-test scores of the 30 respondents. There are only two students who gained a score of 10-12 or “*Satisfactory*”, 7 students gained a score of 7-9 or “*Good*”, 18 gained a score of 4-6 or “*Fair*” and 3 gained a score of 1-3 or “*Needs Improvement*”. Using the frequency counts and percentage distribution, it is obviously seen in the table that the overall mean score of students in the pre-test is 5.83. This imply that the students have “*Fair*” score in their pre-test. The result of the pre-test may likely because the lesson wasn’t introduced yet and some of the features of google form is static and might be not engaging to the students. This therefore indicates that the usage of google form as an assessment tool does not produce a desirable result of the students’ participation in class.

An English teacher of the Grade 7 students of MMSU-LHS also agreed this in an interview after the class discussion wherein google form was utilized.

“Using google form as an assessment tool is not effective to assess the knowledge of students and could not help them retain the information they have obtained from the lesson. In short, they would easily forget all the things they have learned from the lesson being discussed”

The following were some feedbacks shared by selected Grade 7 students of MMSU-LHS as a result of their experiences with the use of google form.

“...taking quiz on google form is very boring. And, as students, we easily get bored during online classes, we want something new, a lesson and activity that would energize us and reduce the boredom we experience during online classes”.

- Student A

“...I always get low score whenever I take quizzes using google form. I also feel frustrated because it does not motivate me to answer the quizzes...because it is so boring tool”

- Student B

Notably, the students did not express favorable feedbacks on the use of Google Form as an assessment tool, therefore, this type of online application is not effective in facilitating assessment activities because it does not promote student’s participation and interaction as presented in the table above.

Table 2
The Mean Score of the Students in their 1 Posttest (Week 1)

Range	Frequency	Percentage	Descriptive Value
13-15	29	97%	Very Satisfactory
10-12	1	3%	Satisfactory
7-9	0	0%	Good
4-6	0	0%	Fair
1-3	0	0%	Needs Improvement
Total	30	100%	

Mean = 14.67
(Very Satisfactory)

Majority of the students gained a score of 13-15 or “*Very Satisfactory*”, while only one of them gained a score of 10-12 or “*Satisfactory*”. Using frequency counts and percentage distribution, the overall mean score of the respondents in their post-assessment is 14.67 which described as “*Very Satisfactory*”. It can be gratifying to note however, that the mean score of the students in their pre-test is 5.83 which shows that there was an improvement of 8.8 in their mean score in their post-test. One acceptable reason is that Kahoot! entice the interests of the students as it is equipped with colorful background, pictures, points or scoring, interesting graphics, and also at the end of the activity, there is a standing podium for the winners. This therefore indicates that the usage of Kahoot! App as an assessment tool is effective tool to assess students’ knowledge about the lesson.

This was also supported by the English Teacher of the Grade 7 students of MMSU-LHS in an interview after the discussion wherein Kahoot! App was utilized.

“When I utilized this kind of tool to assess the extent of students’ knowledge about our lesson, I observed that they are more interested to answer the given quiz than that of the previous tool that I used like google form. With this tool, I was not having a difficulty to encourage them to answer the given quiz because all of them are participating and got a high score which makes them happy and satisfied with the tool that is being used”

It was further complimented by the selected Grade 7 students of MMSU-LHS as they expressed positively their experiences in using Kahoot App.

“...for me ma'am, I prefer to use Kahoot! Because this is more engaging and interactive, and aside from its..., engaging feature, this is also great in saving and restoring answers. Even if there is an interruption like intermittent connection or power interruption, the answers are automatically saved. Unlike in the google form quiz, you cannot restore the answers once it is refreshed.”

- Student A

“...when I am taking quizzes, I prefer using Kahoot! App instead of the google form because the game feature of Kahoot! App has reduced my stress about the fear of tests and quizzes”

- Student B

The result of the posttest and the interview proved the study of Gebbels, M. (2018) about the impact of playing Kahoot! as a digital student response system to keep students engaged and participative, as well as providing the instructor with feedback. It's relevant for any educator who is considering using Kahoot! in their classroom. Hence, this kind of assessment tool is effective and have the power to produce a desirable result of the students' participation in class and would help them retain all the information they got from the lesson.

Table 3

The Difference of the Mean Score of the Students in their Pre-Test and Posttest (Week 1)

	N	Mean Score	Standard Deviation	t-value	p-value
Pre-Test	30	5.83	2.09	-21.70	0.000*
Posttest	30	14.67	0.71		

Mean Difference= 8.8
(Average)

**significant at 0.01*

As reflected in the Table 3, the t-value of -21.70 means that the students gained a lower score in their pre-test than their post-test. It is obvious that the results from the pre-test ($M = 5.83$, $SD = 2.09$) and post-test ($M = 14.67$, $SD = 0.71$) scores before and after the intervention shows a significant increase in scores. From the average mean score of the students in the pre-test which is 5.83 and in the post-test is 14.67. In addition, the p-value of 0.000 is less than the .01 level of significance which means that there is a significant difference of the pre-test and the post-test. This implies that the intervention of this research study proved to improve the participation of the students in English. Thus, the intervention of this research study is highly recommended for teachers to use in facilitating assessment activities in online setting.

In other words, the intervention of this research study resulted in an improvement of scores and show significant difference before and after using Kahoot! App. The improvement of the scores of the students further affirms that Kahoot! App as an assessment tool is really an effective tool to assess students' knowledge in an online setting. Moreover, the significant increase of scores also show that the students prefer to use an assessment application such as Kahoot! which was proven to promote participation, engagement and motivation. This result confirms the notion of Ryan & Deci, 2020 that Kahoot! App as an assessment tool is feasible and practical to make learning fun and enjoyable, thus motivate students to learn. It is further supported by Wang A. I., 2018 as he concluded on his study, it is clear that the students that participated in Kahoot! quizzes reached a better overall result.

Table 4*The Mean Score of the Students in their 1 Pre-test (Week 2)*

Range	Frequency	Percentage	Descriptive Value
13-15	0	0%	Very Satisfactory
10-12	2	7%	Satisfactory
7-9	10	23%	Good
4-6	18	60%	Fair
1-3	0	0%	Needs Improvement
Total	30	100%	

Mean = 6.33

(Fair)

Table 4 reveals the results of the pre-test scores of the 30 respondents on the second week of demo teaching. There are only two students who gained a score of 10-12 or “*Satisfactory*”, nine students gained a score of 7-9 or “*Good*”, and eighteen students gained a score of 4-6 or “*Fair*”. Based from the table, it is obvious that the overall mean score of students in the pre-test is 6.33 or “*Fair*”. This simply means that the students have “*Fair*” score in the pre-test. The result of the pre-test may likely because they were not comfortable with the features of the google form like it does not motivate them to learn and do not really test their knowledge about the topic being discussed by the teacher. This therefore emphasize that the use of google form does not produce a desirable result of the students’ participation in class.

An English teacher of the Grade 7 students of MMSU-LHS also assented this in an interview after the class discussion wherein google form was utilized.

“Using Google form as an assessment tool was not that effective and reliable to use because of some reasons and one of them is that having technical issue which results in regenerating all you have done from the start, and using google form does not make students become more competent and productive one”.

English Teacher 1

Below were some of the feedbacks emphasized by the selected Grade 7 students of MMSU-LHS as a result of their experiences with the use of google form.

“I don’t even take my quizzes seriously whenever I answer in the google form. I don’t even read the questions whenever I answer. Hence, this is not an effective tool to test my knowledge about the topic and cannot reiterate important concepts”

- Student C

“I think, Kahoot! App is far more effective than the Kahoot! App because whenever I take quizzes...based from my observation, I become very active, and...it also helps me retain the information I got from the lesson. Through Kahoot! App, I don’t easily forget all the things I have learned from the lesson being discussed”

-Student D

It is evident in the given feedbacks by the students showed unfavorable response on the use of Google Form as an assessment tool. Therefore, this type of online application is not effective

in assessing students' knowledge because it does not promote students' participation as shown in the table.

Table 5

The Mean Score of the Students in their 1 Posttest (Week 2)

Range	Frequency	Percentage	Descriptive Value
13-15	30	100%	Very Satisfactory
10-12	0	%	Satisfactory
7-9	0	0%	Good
4-6	0	0%	Fair
1-3	0	0%	Needs Improvement
Total	30	100%	

Mean = 14.60

(Very Satisfactory)

All the 30 students obtained a score of 13-15 or “*Very Satisfactory*”. Using the frequency counts and percentage distribution, the overall mean score of the students in the post-test was 14.47 which described as “*Very Satisfactory*”. It was greatly satisfying that the mean score of the students in their pre-test is 5.967 which shows that there was an increase of 8.5 in their mean score in their post-test. The main reason of the huge gap between using google form and Kahoot! App as an assessment tool was, it really catches the attention of students most especially with the interactive activities that it offers. This therefore emphasize that the use of Kahoot! App as an assessment tool was effective and can make students become more active and competent.

This was also agreed by the English Teacher of the Grade 7 students of MMSU-LHS in an interview after the discussion wherein Kahoot! App was utilized.

“When I utilized Kahoot! App in my class as an assessment tool, I observed that it is far effective to use than the google form which I usually utilized whenever I give a quiz to my students because I found out that using Kahoot! App has lots of beneficial features that would really catch the attention of students and would really help them reiterate the important concepts of the lesson being discussed”.

- English Teacher 2

Below were some of the feedbacks reiterated by the selected Grade 7 students of MMSU-LHS as a result of their experiences with the use of google form.

“...I also prefer to use Kahoot! App when taking quizzes because uhm probably because of its uhm game features that allows me to be comfortable in answering the question. I feel excited and inspired to attend the classes...I believe, taking quizzes using the Kahoot! App helped me increase my self- esteem to participate more in the activities ken quizzes given by the teacher”

- Student C

“I prefer to use Kahoot! App when taking quizzes because...unlike the Google Form that automatically refreshes over again when faced with poor connectivity Kahoot! App is accurate in scoring answer. It is also engaging as does require interaction and building relationships with learners”.

- Student D

It was clear that the students showed favorable response of the use of Kahoot! App as assessment tool in facilitating assessment activities. This was further supported by Plump and LaRosa (2017) as they stated that Kahoot! App as an assessment tool improves classroom dynamics as the system provides with real-time feedback of their performance in the test and increase student's engagement and participation in online setting.

Table 6

The Difference of the Mean Score of the Students in their Pre-Test and Posttest (Week 2)

	N	Mean Score	Standard Deviation	t-value	p-value
Pre-Test	30	6.33	1.67	-25.00	0.000*
Posttest	30	14.60	0.71		

Mean Difference= 8.3
(Average)

*significant at 0.01

As reflected in the Table 6, the t-value of -25.00 means that the students gained a lower score in their pre-test than their post-test. The probability value of 0.00 is lower than 0.5 level of significance. It is clear that the results from the pre-test ($M = 6.33$, $SD = 1.67$) and post-test ($M = 14.60$, $SD = 0.71$) scores before and after the intervention shows a significant increase in scores. From the average mean score of the students in the pre-test which is 6.33 and in the post-test is 14.60, it is notable that there is a mean difference of 8.3. In addition, the p-value of 0.000 is less than the .01 level of significance which means that there is a significant difference of the pre-test and the post-test.

In other words, the intervention of this research study resulted in an improvement of scores and show significant difference before and after using Kahoot! App. The improvement of the scores of the students further asserted that Kahoot! App as an assessment tool is really an effective tool to assess students' knowledge in an online setting. Moreover, the significant increase of scores also show that the students prefer to use an assessment application such Kahoot! which was proven to promote participation, engagement and motivation.

CONCLUSIONS

Based from the findings, the researchers concluded that there was a significant difference in the mean score of the respondents in the pre-test and post-test as well as in the difference of their mean scores both in week 1 and 2 after the intervention was employed. Therefore, Kahoot App! As an interactive toll is strongly recommended to teachers to use in their classes specifically in the assessment part of the lesson to also try-out and at the same time determine not only its usefulness but also its effectiveness.

RECOMMENDATIONS

Based on the results and conclusion, the researchers would like to offer the following recommendations:

1. The researchers highly recommend Kahoot! App to use by teachers because it has a lot of helpful benefits and features such as it provides immediate feedback, it automatically summarizes the scores of the student, etc. and making it easier to record and identify the progress of the students.
2. The administrators should encourage every teacher to use Kahoot! App when conducting synchronous activities especially when teachers want to assess and measure the students understanding about the lesson.
3. Officials, curriculum planners, and policy makers in the different institutions should consider to integrate Kahoot! App as an assessment application in teaching any subject areas.

REFERENCES

- Aljaloud, Gromik Billingsley and Kwan (2015). Research trends in student response systems: A literature review. Retrieved on June 14, 2022 from https://www.researchgate.net/publication/289570995_Research_trends_in_student_response_systems_A_literature_review
- Astin (2019). What matters in college? Four critical years revisited. San Francisco, CA: Jossey-Bass. Retrieved on January 20, 22 from <https://files.eric.ed.gov/fulltext/EJ1152330.pdf>
- Ary, et al., (2018). Characteristics of Qualitative Research Methodology Types. Retrieved on January 20, 2022 from https://www.researchgate.net/figure/Characteristics-of-Qualitative-Research-Methodology-Types-Extracted-from-Ary-et-al_tbh1_344584385
- Batsila and Tsihouridis (2018). “Let’s go... kahooting”–teachers’ views on CRS for teaching purposes. In International conference on interactive collaborative learning (pp. 563–571). Springer Retrieved on April 22, 2022, from <https://journals.sagepub.com/doi/full/10.1177/1046878119882048>
- Bawa, P. (2019). Using Kahoot to Inspire. Journal of Educational Technology. Retrieved on May 5, 2022 from <https://www.techlearning.com/how-to/what-is-kahoot-and-how-does-it-work-for-teachers>
- Bettinger E., Liu J., Loe S., et al (2016). Connections Matter: How Interactive Peers Affect Students in Online College Courses. Journal 35(4). Retrieved on June 14, 2022 from https://www.researchgate.net/publication/304531541_Connections_Matter_How_Interactive_Peers_Affect_Students_In_Online_College_Courses
- Bhandari (2020). Innovating pathology learning via Kahoot! game-based tool: a quantitative study of students’ perceptions and academic performance. Retrieved on January 21, 2022 from <https://www.techlearning.com/how-to/what-is-kahoot-and-how-does-it-work-for-teachers>
- Bransford et al. (2021). Assessment, Teaching and Theories of Learning. Retrieved on April 22, 2022 from https://www.researchgate.net/publication/271964452_Assessment_teaching_and_Theories_of_Learning
- Chen, W. et al. (2017) “Go Kahoot!” Enriching Classroom Engagement, Motivation and Learning Experience with Games. Retrieved on June 6, 2022 from

https://scholar.google.com/scholar?hl=tl&as_sdt=0%2C5&q=kahoot%21+participation&oq=kahoot%21+paryici#d=gs_qabs&t=1654502544640&u=%23p%3DSgpWQwPRB-wJ

- Croxton, R.A. (2014). The Role of Interactivity in Student Satisfaction and Persistence in Online Learning. *Journal of Online Learning and Teaching*, 10, 314. Retrieved on June 14, 2022 from <https://www.scirp.org/%28S%28351jmbntvnsjt1aadkposezje%29%29/reference/referencespapers.aspx?referenceid=2383424>
- Dlab et al. (2020). Participation in Virtual Setting. Retrieved on January 21, 2022 from <https://wasa-oly.org/WASA/images/WASA/6.0%20Resources/Hanover/Research%20Brief---Virtual%20Learning%20Expectations%20and%20Participation.pdf>
- Gebbels (2018). Re-engineering challenging and abstract topics using Kahoot!, a student response system. *Compass: Journal of Learning and Teaching*, 11(2) Retrieved on December 19, 2021 from https://www.natcom.org/sites/default/files/pages/eTools_Kahoot_August_2017
- Grant and Valiente (2008). Prediction of children's academic competence from their effortful control, relationships and classroom participation. Retrieved on June 14, 2022 from <https://psycnet.apa.org/record/2008-01796-005>
- Hodges (2020). The difference between emergency remote teaching and online learning. In: *Educase Review*. Retrieved on December 20, 2021 from <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>.
- Holsti (2017). Delay of Games: A Content Analysis of Coverage of Black Male Athletes by New Websites, 2002-2012 Retrieved on January 21, 2022 from [https://www.scirp.org/\(S\(czech2tfqyw2orz553klw0r45\)\)](https://www.scirp.org/(S(czech2tfqyw2orz553klw0r45)))
- Isolahata et al. (2017) Socially shared regulation of learning and participation in social interaction in collaborative learning. *International Journal of Educational Research*, 81, 11–24. Retrieved on January 21, 2022 from <https://doi.org/10.1016/j.ijer.2016.10.006>
- Kyoko Johns (2015) Engaging and Assessing Students with Technology: A Review of Kahoot! Retrieved on June 6, 2022 from https://scholar.google.com/scholar?hl=tl&as_sdt=0%2C5&q=kahoot%21+participation&oq=kahoot%21+paryici#d=gs_qabs&t=1654502522537&u=%23p%3DYelbZl2MrbAJ
- McClogan et al. (2018). Positive Effects in Participating Assessment Activities. Retrieved on January 21, 2022 from <https://files.eric.ed.gov/fulltext/EJ1179831.pdf>
- Michailidis et al. (2018). Interaction analysis for supporting students' self-regulation during blog-based CSCL activities. *Journal of Educational Technology & Society*, 21(1), 37–47. Retrieved on May 5, 2022 from <https://www.jstor.org/stable/26273866>
- Moidunny (2009). The effect of using Kahoot! for learning – A literature review. Retrieved on December 19, 2021 from <https://www.sciencedirect.com/science/article/pii/S0360131520300208>

- Plump and Larosa (2017). eTools: Using kahoot! In the classroom to create engagement and active learning: A game-based technology solution for elearning novices, 151–158. Retrieved January 19, 2022 from https://www.natcom.org/sites/default/files/pages/eTools_Kahoot_August_2017
- Reimers et al. (2020). Supporting the continuation of teaching and learning during the COVID-19 pandemic. Retrieved on January 19, 2022 from https://www.researchgate.net/publication/311715494_Overcoming_barriers_to_learning_A_guide_for_academics
- Putri (2019). Kahoot! App as an Outstanding Tool in Today's Virtual World. Retrieved on December 19, 2021 from <https://files.eric.ed.gov/fulltext/EJ1105282.pdf>
- Toth et al. (2019). The effect of the Kahoot! quiz on the student's results in the exam. Retrieved on December 20, 2021 from <https://Kahoot!appasagame-basedstudentresponsesystem//123fhssgdhfn.pdf>
- Sanches and Reyes (2020). MOOCs in Latin America: Trends and issues (2019). Retrieved on January 19, 2022 from https://www.researchgate.net/publication/311715494_Overcoming_barriers_to_learning_A_guide_for_academics
- Siti Maziha (2019). Factors influencing classroom participation: a case study of Malaysian undergraduate students. Retrieved on December 20, 2021 from <https://cyberninka.org/article/n/1141850>
- Sivapalavan & Cregan (2015). Value of online resources for learning by distance education. *CAL-laborate. International Journal of Innovation in Science and Mathematics Education*, 14(1), 23–27. Retrieved on January 19, 2022 from <https://files.eric.ed.gov/fulltext/EJ728902.pdf>
- Sudweek and Barbour (2018). Participation in Online Courses and Interaction in Virtual Setting. Retrieved on December 19, 2021 from <https://core.ac.uk/download/pdf/11425635.pdf>
- Sugiyono (2019) Enhancement of performance and motivation through application of digital games in an English language class. Retrieved on May 17, 2022 from <https://www.techlearning.com/how-to/what-is-kahoot-and-how-does-it-work-for-teachers>
- Villanueva, (2016). The Effect of Constructivist Approach in Teaching Short Stories and Poems to the English Performance of Students. Retrieved on May 17, 2022 from: [https://dx.doi.org/10.18843/rwjase/v7i1\(1\)/02](https://dx.doi.org/10.18843/rwjase/v7i1(1)/02)
- Wang, C., et al. (2017). eTools: The Wear Out Effect of a Game-based Student Response System. *Computer and Education*. Retrieved on January 20, 2022 from https://www.natcom.org/sites/default/files/pages/eTools_Kahoot_August_2017
- Wang Zhu et al. (2018). The effect of digitizing and gamifying quizzing in classrooms. In European conference on games-based learning. Paisley, Scotland: Academic Conferences and Publishing International Retrieved on January 20, 2022 from <https://typeoflearningtooldfhr12h3v3bhd.pdf>
- Wichadee, S., & Pattanapichet, F. (2018). Enhancement of performance and motivation through application of digital games in an English language class. Teaching English with

- Technology, 18(1), 77–92 Retrieved on January 20, 2022 from <https://onlineppedagogicaltool12346453673hdhHhd6.pdf>
- Weaver and Qi (2019). Student Participation in the College Classroom: An extended Multidisciplinary Literature Review. Retrieved on December 19, 2021 from <https://files.eric.ed.gov/fulltext/EJ728902.pdf>.
- White and Mcloy (2019). Effects of Game-Based Learning o Attitude and Achievement in Elementary Mathematics. Networks: An online Journal for Teacher Research. Retrieved on January 19, 2022 from <https://files.eic.ed.gov>
- William (2018) Using Kahoot! in the Classroom to Create Engagement and Active Learning: A Game-Based Technology Solution for eLearning Novices. Retrieved on December 19, 2022 from https://www.researchgate.net/publication/313418401_Using_Kahoot_in_the_Classroom_to_Create_Engagement_and_Active_Learning_A_Game-Based_Technology_Solution_for_eLearning_Novices
- Yin, K.,et.al (2013). *Case study research: Design and methods*. Sage publications. Retrieved on April 18, 2022 from https://www.natcom.org/sites/default/files/pages/eTools_Kahoot_August_2017
- Zarzycka-Piskorz (2016). Kahoot it or not?: Can games be motivating in learning grammar? Retrieved on June 14, 2022 from https://www.researchgate.net/publication/310614193_Kahoot_it_or_not_Can_games_be_motivating_in_learning_grammar