Original Article

The Potential of Using Kahoot to Empower EFL Learners:
An Experience of Game-Based Learning

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Abstract

These days, educationists and students are growing enthusiasm for digital learning which is based on pedagogical games. A review of the body of research confirms that these online instructional games are efficient at getting the learners involved in the learning process. The present research investigates using an online educational game-based platform called *Kahoot* to enhance learning English for Academic Purposes (EAP) and sustains the hypothesis that it enriches the traditional, teacher-centered classrooms by having EFL learners more engaged, motivated, and involved. Applying a mixed-method study, around 100 EFL undergraduates were surveyed and evaluated based on a semester-long involvement in Kahoot games in an EAP course. The subjects were interviewed for their perceptions of using Kahoot and also evaluated statistically by their performance on the achievement test of the course. The findings of the project confirm an enhancement of the EFL learners' language skill performance. Furthermore, Kahoot helped EFL learners experience a high degree of engagement in comparison with traditional teaching methods. Besides, new horizons toward the future of application of Kahoot in EFL learning are discussed. Consequently, both parts of the study i.e., qualitative and quantitative, approved that playing Kahoots, as a platform for game-based learning, was highly engaging, educationally helpful, and motivating.

Keywords: Digital Games, English for Academic Purposes (EAP), Kahoot, Game-Based Learning, Language Skill Performance.

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1. Introduction

During the last few years, there has been an increasing application of online platforms in the world of teaching and learning in the form of gamification as a result of accessibility of online education and Internet games (Hainey et al., 2011). Hundreds of million people play online games every day, using game consoles like Play Station. These games naturally encourage gamers, i.e. learners, to master theory and practice of the subject area by reviewing the information and combining them with the whole knowledge in the mind of the learner (Paraskeva et al., 2010; Van Eck & Hung, 2010). According to the body of the academic works, online games had most learners, in educational environments, engaged and well involved in the learning process (Bogost, 2007; Zarraonandia et al., 2014).

These days, instructional games are providing educators and learners with attractive facilities for educational purposes; however, they are not fully applied to their best capacity, especially at undergraduate level (Godwin-James, 2014). To appraise the functions of these online game platforms, analyzing their impacts on the learners' learning experiences and educational practices is absolutely essential (Epper et al., 2012). Perrotta et al. (2013) declare that gamification has all learners fully engaged, well involved, and motivated although its impacts are not vividly clear on learning achievements.

Visiting the website, it can be easily understood that Kahoot is being increasingly popular in academic and educational societies all around the world with millions of Kahoots played by millions of players in most countries around the globe. The researcher of the study came to the idea that there is no experimental proof on the efficacy of using Kahoot in the world of learning and teaching English as a Foreign Language (EFL). Therefore, it would be beneficial to run experimental research on the use of Kahoot in the context of teaching/ learning EFL and its probable effects in higher education (universities). There should be a sensible balance between teaching and assessment. That is a reason for choosing Kahoot for the present study because it is favorable, user-friendly, and conforming to the principles of online gaming platforms described earlier.

Kahoot is inherently amusing and also an instructional online platform for educational contexts helping syllabus designers and materials developers present educational materials via gaming framework, such as tests. Singer (2016) states that it is like an online game show with some agents including instructors as the hosts involving

learners in the learning process in a fun way. It's a medium helping the students have a chance to master learning tactics, mind-challenging tasks, teamwork, and cooperation. Online gaming in Kahoot provides instructors with observable performances and achievements of the learners while focusing on test-like games. Using this online gaming platform, instructors create educational games- Kahoots- by employing different types of items (multiple-choice – true-false – etc.) and combining them with multimedia (audio-video-image-text). Using their smart gadgets, gamers give an appropriate response to questions and react to the messages shared on the screen to win some points. They can get more points as they choose the right option as fast as possible. Playing Kahoots, winners, and losers exchange points to compete with each other. An app on smartphones is also available for Kahoot. Playing Kahoots is a fun way to amuse students to run an evaluation process in the course. Both instructors and learners develop a clearer understanding of the learning process.

Moreover, to develop a clearer appraisal of the reasons for probable beneficial improvements, scrutiny of learners' ideas regarding the pros and cons of using Kahoot in the educational context is also performed. Accordingly, the current study is to understand whether EFL learners have a better achievement using Kahoot. In addition, the researcher tries to run an investigation of the EFL learners' ideas about the advantages and disadvantages of using Kahoot in their EAP (English for Specific Purposes) courses (part two of the study).

2. Literature Review

During the recent decades, instruction equaled to a teacher-centered physical classroom run traditionally. Using digital technology, student-centered instruction, which is more personalized, is being made possible. This evolution caused immediate knowledge development and skills mastery, expanded and enriched by a variety of technologically driven approaches (Ford & Meyer, 2013). Learning in this situation would be interpreted as a constant mechanism to scan, analyze, and assess information and practices (Shute & Ke, 2012). In this regard, lots of education experts tried hard in different ways to make effective use of gaming platforms to make learners more motivated and turn them into better educational achievers (Andrew & Carman, 2014). This innovative sort of learning finds its own place in the practice of teaching because of its entertaining nature, facilitating

the interaction between students and instructors amusingly, creating a helpful and confident skill in the game player (Goethe, 2019; Reiners & Wood, 2015).

The increasing student-centered instruction tends toward the application of instructional techniques and procedures in educational settings in the form of gamification, which is defined as the use of gaming platforms, combining the principles of beauty and entertainment, to make learners engaged and motivated; to help them achieve more and clarify learning problems (Kapp, 2012). The use of gamification at universities can provide learners with more incentives, which is the primary reason for using them. It means that they make the practice of learning more interesting, entertaining, and consequently, more helpful (Barber & Smutzer, 2017). These days, the number one problem in educational settings is keeping students focused on the learning materials and involving them in the learning process (Raitskaya & Tikhonova, 2019). In this regard, gamification has been identified as one of the appropriate methodologies to make students purpose-oriented and active participants in instructional tasks (Kapp, 2012). Lister (2015) believes that gamification is so influential and helpful that it attracts and maintains learners' mental focus in educational environments. From this point of view, gamification is applying all principles and structures of designing games for instructional purposes (Reiners & Wood, 2015).

Online games are included in the syllabus design and materials development of educational societies for several aims and goals like instruction and assessment (Nadolny & Halabi, 2015; Van Eck, 2015). Using online platforms to play games, students discover different dimensions of the game to get familiar with the context of the subject area, designed and developed by their teachers; and they also get involved in intellectually challenging tasks relevant to the subject (Kiili, 2005; Pivec, 2007; Tsai & Fan, 2013).

McClarty et al. (2012) believe that online gaming is an application of smart teaching by which learners compete with each other to solve an educational problem with observable outputs in a rule-governed environment. These gaming platforms are looking for making a progress in academic achievements in an interesting and attractive way by merging educational materials with gaming options, while, simultaneously, equipping students with a chance to harmonize with meta-cognitive analysis (Kickmeier-Rust et al., 2008; Pivec et al., 2014). These days, online games are used in different educational contexts, including military and medical education (Ulicsak, 2015). A lot of academicians

are in favor of using online games (Godwin-James, 2014; Zarraonandia et al., 2014) though lots of other researchers concentrate on such problems as low amusement index, which turns these platforms less pleasurable and engaging for students (Bellotti et al., 2011) and results in low achievements because learning is not taken seriously in these gaming platforms (Khine, 2011). Thus, choosing an online gaming platform,

Kahoot is being favorable and popular among high school and undergraduate students studying math, social science, and EFL (Knodel, 2016). Singer (2016) stated that more than 50 million students at primary and secondary schools in the United States are playing Kahoots. Kahoot involves mastering the content of the subject area, not just test-taking strategies to cope with problems (Johnson et al., 2010). Kahoot- an assessing game-covers a variety of different content and subject areas, unlike some specific online gaming platforms tuned to a special subject area (Stewart et al., 2013). Based on the reports reviewed earlier, although necessary for academic achievements, no studies investigated the impact of playing Kahoot on the academic achievements of EFL learners at universities. Accordingly, the current study gains significance to find the answers to the following questions:

1. Does playing Kahoots have any effects on the achievements of EAP learners?
2. What aspects of playing Kahoots do EAP learners find pleasing, exciting, and useful? Why?

3. Methodology

3.1. Design and Context of the Study

Using Creswell's (2014) model, the mixed method design was applied to evaluate EFL learners' achievements and perceptions regarding online gaming platforms (Kahoot). Accordingly, a true experimental research procedure was used for the quantitative part of data and a phenomenology research procedure was used for the qualitative part of data. Mixed method design in running a research project gained popularity among academicians because it gives the researchers and readers a profound, comprehensive vision toward the issue leading to an in-depth analysis (Johnson & Onwuegbuzie, 2004). Following the model proposed by Creswell (2014), the collection of both parts of data, i.e. qualitative and quantitative, was done simultaneously and then the data was scrutinized in a convergent way. Three factors guarantee the true experimental design; (a) randomization, (b) control,

and (c) manipulation (Johnson & Christensen, 2014), exactly followed in the present study. The class parts were chosen at random and the length of time of using Kahoot was under control in the experimental classes. Subjects were categorized into two groups of Kahoot (experimental) and non-Kahoot (control) randomly. Using phenomenological procedures for the qualitative part of the study, the information was drawn from the students' real interactions and authentic reactions given to online gaming platforms (Kahoot) in the classes, as proposed by well-known figures in this research method (Creswell, 2014).

3.2. Participants

There were 5100 subjects, chosen from Farhangian University, Mazandaran, Iran. The research sample included 96 learners, registered at an EAP course, Inside Reading, following their undergraduate program as a teacher-student. These subjects were selected from five colleges of the Farhangian University of Mazandaran. The researcher together with three other instructors presented the EAP course. Studying the personal profile of the students in the LMS of the university, subjects were 18 to 23 years old and were from a variety of different ethnic groups all around the country- Iran. Gender is controlled in the study. The majority of participants declared they were not familiar with Kahoot. Course instructors didn't have any background knowledge about online gaming platforms though they were skillful in using computers and other smart gadgets.

3.3. Instruments

3.3.1. An Achievement Test

The students' scores from their final exam of the semester were used for the quantitative part of the research. There were 100 items (multiple-choice questions) - one point for each item. Students were given 100 minutes to take the whole test. The exam was not open-book and the test takers were supposed to answer the questions based on what they've learned from the instruction.

3.3.2. The Course Book

In experimental groups, Inside Reading was presented through lectures complemented and supplemented by activities and tasks in Kahoot. Inside Reading is a five-level academic reading series that develops students' reading skills and teaches key

academic vocabulary from the Academic Word List. Each unit in Inside Reading features two high-interest reading texts from an academic content area, reading skills relevant to the academic lesson, and targeted words from the Academic Word List.

3.3.3. Kahoots

Using the coursebook- Inside Reading- and the instructors' presentations in the classroom, lots of game-based activities were designed in Kahoot- called Kahoots- by the instructors. These activities enjoyed having a nature of being interactive, intellectually challenging, and instructional. Students group and formed teams. The teams played Kahoots and competed with each other. The winners played against the losers to gain more points. To help their team, win the game, teammates cooperated, collaborated, and interacted with each other leading to learning and retention of instructional materials. Two main categories of activities in Kahoot were used over and over in the classes; Quiz and Discussion. Quizzes were commonly used in our classes in different formats including multiple-choice questions associated with pictures and videos; true-false items related to reading comprehension and academic vocabulary. Discussions were designed to help learners start interacting and negotiating with each other to fill a gap. Discussion questions didn't have a clear-cut answer, i.e. they were dependent on the learners' life experience. For example, "what do you do in everyday life to help reduce global warming?" The questions in the discussion part were associated with photos and videos. Using the activities above, the instructors tried to diversify and enhance their teaching strategies.

3.3.4. A Survey

The data for part two of the study- qualitative one- came from a survey presenting some questions and entries about how the students perceive the role of playing Kahoots on the learning and retention of the EAP materials. The survey asked: Elaborate on the words and sentences that express your genuine feelings about playing Kahoots in your EAP course; What do you think about repeating the experience with other EAP courses? Explain in detail.

3.4. Data Collection Procedure

Using mixed methods, the current study is to have a word in the literature by running an analysis of the role of online games (Kahoot) versus the old-fashioned non-digital

methods in the field of Teaching English as a Foreign Language (TEFL). The instructors participating in the study were assigned randomly to present the EAP courses in the study. The students' scores from their final exam of the semester (an achievement test) were used for the quantitative part of the research. In experimental groups, the coursebook- Inside Reading- was presented through lectures complemented and supplemented by activities and tasks in Kahoot. The instructors accepted the idea of complementary materials of Kahoot activities enthusiastically since they reviewed the points in the materials repeatedly. The instructors cooperated eagerly from the beginning of the study as they monitor how Kahoot helped the students to learn, review, and retain the materials. No Kahoot-based tasks were used for the control group.

The scores of the achievement tests were tabulated and compared across different groups of the study to evaluate the impact of playing Kahoots on the final test scores. The same questions and item types were used for both experimental and control groups. For the survey, the information was drawn from the students' real interactions and authentic reactions given to online gaming platforms (Kahoot) in the classes.

3.5. Data Analysis Procedure

Independent sample *t*-tests were run by the researcher for the exams. The researcher also codified the survey data and turned them into quantities (Johnson & Christensen, 2014). Counting the frequencies for each code, the researcher was able to draw an expressive illustration of the learners' feelings and perceptions toward Kahoot. The frequent codes were labeled appropriately by relevant specific terminologies. First, a list of concepts (phrases and statements) expressing the participants' perceptions were extracted. Then, the researcher counted the frequency of answers for each concept. Finally, the most frequent perceptions (concepts) were labeled and listed.

4. Results

4.1. Part One: Participants' Achievements

The researcher was interested to understand if there will be any variations between the scores of the final exams of the participants who used Kahoot and those who didn't. The directional hypothesis of the question above was participants playing Kahoots have a higher achievement score than those who didn't. Consequently, independent sample *t*-tests

were run to test the hypothesis. The outputs of the *t*-test rejected the null hypothesis (H0): There won't be any significant discrepancies between the scores of the experimental and control groups. Table 1 illustrates the output of the *t*-test. Therefore, the experimental group was performing significantly better than the control group in the final achievement test.

Table 1.

Descriptive Statistics and T-test Results

t= 6.90809	N	Minimum	Maximum	Mean	Standard deviation
Experimental	48	43.00	100.00	79.5625	13.10174
Control	48	25.00	99.00	56.8333	18.65400
Valid N (listwise)	48				
P < .00001		Significant at p < .05			

4.2. Part Two: Participants' Perceptions

All the students declared that they had no experience of playing Kahoots previously; however, some of them played other similar online games very briefly (once or twice). This declaration confirms the fact that Kahoot is not applied at universities practically despite its beneficial effects on the learners. All learners stated that playing Kahoots had a meaningfully useful effect on their learning and nearly all of them confirmed that they are willing to get involved in playing Kahoots once more. Taking the survey to express their feelings and sensations about playing Kahoots and why repeating that experience is enjoyable, the subjects asserted 35 concepts in general, lots of which were common among participants, adding the whole number of concepts to a peak of 103. Codifying the concepts, the researcher placed them into seven groups stating true beliefs and perceptions of participants about why Kahoot was amusing and intellectually challenging. Figure 1 illustrates the results graphically. As illustrated in figure 1, playing Kahoots was extremely amusing, incentive, arousing, and supportive to their learning among all participants.

The majority of subjects thought that playing Kahoots was not demanding and didn't need a lot of effort. At last, few of the students believed that Kahoot was like a competition though it was planned to create a competition among several groups in the class. In the

current study, the subjects were apparently engaged in playing Kahoots as a result of being amusing and valuable for the purpose of learning challenging issues. This fact was well confirmed by the respondents taking the survey.
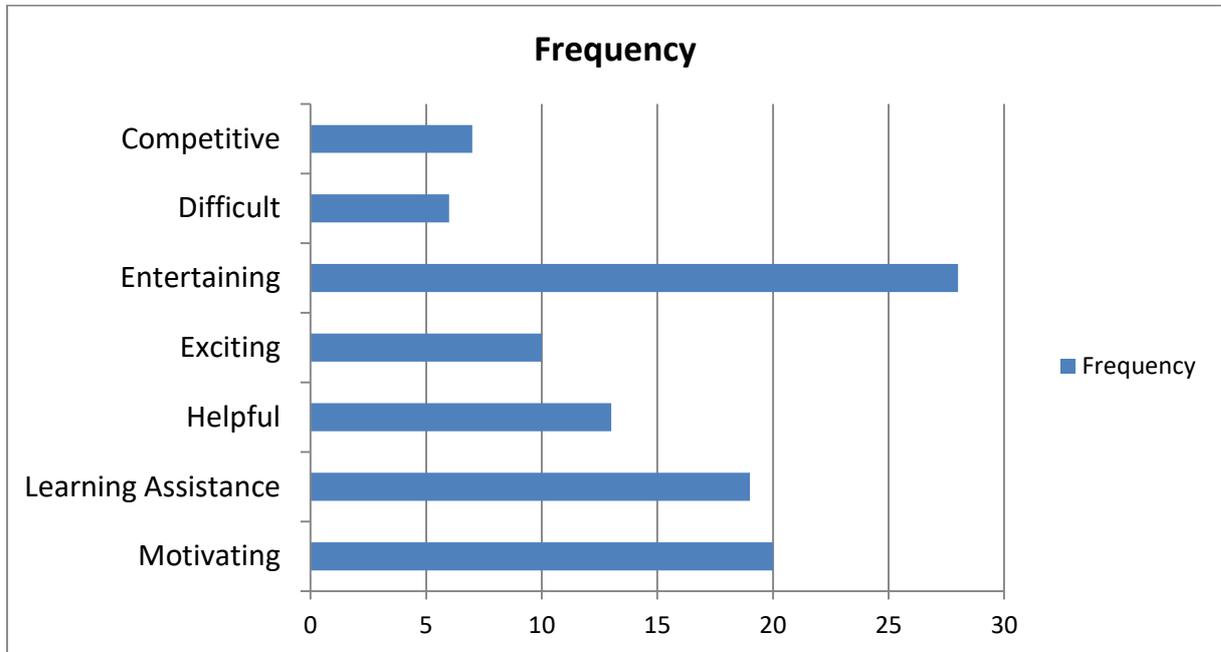

Figure 1. Perceptions of Kahoot value

A helpful function of playing Kahoots is providing the learners with a chance to review the educational materials and get ready for a better performance in the final test. For example, Eli said, "I enjoy playing Kahoots; I understood that it helps me review the learning points, and prepare for the exams." Katy stated, "It was entertaining and it helped me renew and revive the learning materials." Some students had the idea that playing Kahoots assists them to have a better record of learning points, functioning as a learning aid. For example, Shirin elaborated on how "playing Kahoots was beneficial in renewing learning materials causing them to stick in my mind." Similarly, Davood mentioned, "Playing Kahoots revived the points we've been studying and made them easier to recall and remember." Moreover, playing Kahoots was facilitative for learners since it helped them turn into a better reader and note taker. Sara confirmed how, "playing Kahoots expedited fluent reading comprehension and more skillful note taking, especially about academic topics reviewed repeatedly in the platform." At the end, Playing Kahoots supported more active attending, especially by reserved learners. For example, Samyar said

that, "Playing Kahoots helps introvert people like me get totally engaged in the classroom activities and express themselves freely when they're asked some questions." Eli added, "It is a magic method to encourage people to be more active in the class."

4.3. Integrating Participants' Achievements and Perceptions

In order to have a comprehensive perspective toward the technique of applying online platforms to play educational games in EAP classes, the researcher tried to enrich the findings of the current study with a mixed-method analysis. On the one hand, the achievement scores proved that learners in the experimental group outperformed the learners in the control group. On the other hand, learners' beliefs and opinions on the effects of playing Kahoots pointed some key factors out explaining why such an improvement happened. The main factor here is 'creating aspirations and ambitions in learners' minds in a way that they had a strong desire to have the best achievements in the EAP course. Although there are a number of criticisms about applying technology to education (Ariffin, 2012), technology-enhanced instruction is considered as a standard that educationists use to judge pedagogical knowledge and educational framework (Jaipal-Jamani & Figg, 2014).

The researcher tried to establish a logical relationship between the learners' perceptions of playing Kahoots and their improved achievements on the final exam. Examining learners' beliefs about the effects of Kahoot-based games, two main factors were proposed by the learners as vital to their improvement in the learning process providing them an incentive to perform successfully:

Factor 1 – *amusing Kahoot games including multi-media content provided learners with repeated exposure to EAP content and interactive instructional materials* – Granic et al., (2014) believe that repeated exposure to reading materials can help students achieve great progress. Factor 2 – *interacting with online platforms to play educational games can provide motivations to higher achievements* – social aspiration for learning has a strong compulsory effect on the learners' achievements (Peterson, 2013). In addition, having a competition in an instructional task may cause involvement in learning and help students acquire a kind of analytic reasoning skills. It also encourages learners to attend more actively in banal instructional activities leading to high performance (Burguillo, 2010).

Consequently, regarding the 1st question of the study, statistics proved that the experimental group outperformed the control group significantly in the final achievement test, i.e. playing Kahoots was effective for the achievements of EAP learners. Regarding the 2nd question of the study, EAP learners attributed 7 main categories of adjectives to the effect of playing Kahoots on EAP, including: competitive; difficult; entertaining; exciting; helpful; learning assistant; motivating.

5. Discussion

The results of the study proved that playing Kahoots had a beneficial impact on learners' EAP achievements. These impacts were observed in higher achievements in the final evaluation of the semester and greater capacity to remember what they've learned, the common beliefs of most respondents reflecting on their experience of playing Kahoots. For the summative test, content of the whole semester was used. Consequently, learners had a considerable intellectual burden since their study covered larger chunks of the syllabus. Kahoot-based instruction was used for the whole semester while the sessions preceding the summative test were more loaded with Kahoot assignments. The Kahoots designed for different lessons and parts of the textbook- Inside Reading- were available on the platform, giving the learners the chance of playing the same Kahoots several times; helping them focus on the problematic issues in the materials.

Cowan (2010) mentioned that learners need to review and reconsider educational materials because storage capacity of the learners' memory suffers from some limitations. Consequently, they forget some parts of acquired knowledge leading to a deficit in their learning. He also confirms that learners' mental power is variant depending on how much they make their memory work harder to reach the information. He continues the learners' memories can be occupied with learning points (things presented in the classroom) or disturbance (things distracting them from learning materials). According to what Cowan (2010) said, there should be an effort to lessen the time for 'disturbance' and increase the time for learning points. Raitskaya & Tikhonova (2019) reported that game-based learning helped learners to stay focused on learning materials. Similarly, in the current study, playing Kahoots exactly had a vital role of removing 'disturbance' and adding the factor of conscious attention to learning activities in the classroom.

The data derived from the survey firmly confirmed that learners were totally involved by playing Kahoots in the classroom. This is in congruence with the results of other studies saying that playing educational online games is highly encouraging, captivating, and arousing; these elements help assist acquisition and learning (Barab et al., 2005; Bogost, 2007; Hainey et al., 2011; Zarraonandia et al., 2014). Andrew and Carmen (2014) believed that effective use of gaming platforms makes learners more motivated and turns them into better educational achievers. This belief is in full agreement with the results of the current study. Furthermore, Goethe (2019) asserted that game-based learning is entertaining, interactive, and helpful. These are the attributes the EAP learners in the study used to describe the effect of playing Kahoots.

Burguillo (2010) argued the relationship between game theory and competition-based learning and concluded that game-based learning stimulates a competitive atmosphere. An accidental finding of the study was the fact that unlike the game-like attraction of Kahoot and having the gamers rival other counterparts, the participants in the present study didn't recognize Kahoot with a rival spirituality and they took it as more cooperative and collaborative than competitive. This finding is in disagreement with a number of studies which confirm that rivaling other gamers is essential for the learners' incentives and likes. Game-based learning and its strengthening and motivating power are seen as an impetus to increase and encourage gamers' involvement in many situations, as Mekler et al. (2017) elaborated. Therefore, it can be argued that although there were no competitions among learners playing Kahoots in the study, they were hooked up with learning points by playing Kahoots and their positive attitudes toward the game.

6. Conclusion

It can be concluded that online platforms for educational games like Kahoot are advantageous for learners at high education to gain better achievements and to be encouraged and also interested to pursue their personal educational concerns.

There was a focus on only one online platform for educational games, i.e. Kahoot in this study. Other similar platforms like Nearpod, H5P, Flipgrid, etc. can be experimented with using the same design to examine the possible interventions of the platforms. In addition, it is strongly advisable to replicate the study with minimal changes in the

variables to be more confident about the beneficial impacts of Kahoot on the learning performances of the students in higher education.

There was a focus on the beliefs and opinions of the learners and gamers and no questions addressed the teachers and designers' perceptions toward the impacts of Kahoot on the learning outcomes which is vital to have a comprehensive perspective of the role of Kahoot in education. Finally, the researcher examined the effect of Kahoot on the students' achievement in an EAP course. There should be other studies to focus on the function of Kahoot for other subject areas as well as skills and profession.

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