

Using Game-based Technology, KAHOOT! for Classroom Engagement

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Submitted: 18/11/2018. Revised edition: 11/12/2018. Accepted: 16/12/2018. Published online: 18/12/2018

ABSTRACT

In the recent years, numerous game-based technologies have been developed with the aim of providing fun yet meaningful experience to their users. These technologies are also common among instructors and students in the English as a Second Language (ESL) classroom since they act as supplements for effective teaching and learning. Instructors and students who are now more advanced with technology could benefit from these available game-based technologies as these technologies offer various features that could be utilized for classroom activity. As to ensure the successful implementation of the technologies, students' engagement in the classroom where the technologies are concerned should be paid attention to. Hence, in the context of this study, the use of one game-based technology, KAHOOT in an ESL classroom was observed. The study examines the students' level of engagement while playing KAHOOT and also looks at the students' level of attainment towards the topic content. The study was conducted qualitatively with the participation of 29 undergraduate students. The data was collected via interviews and observations which later was analysed descriptively. The findings suggest that KAHOOT is proven to be useful in initiating and fostering students' engagement in language learning activity and at the same time enhancing their language skills. The study hopes to provide insights for better implementation of game-based technologies in English language classroom curriculum.

Keywords: Game-based technology, classroom engagement, ESL

INTRODUCTION

It is vital to consider how teachers can create positive engagement in the classroom using technology. Being literate in the twenty first century is no longer about being able to read and write, but also the ability to upload, download, chat, save, share and respond to a digital activity in real time (Mullen & Wedwick, 2008). 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. Krauskopf, Zahn and Hesse (2012) stated that the potential use of technologies can be maximized if teachers combine them with suitable learning objectives. Moreover, video games

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can provide cognitive, motivational, emotional, and social benefits to students when appropriately applied in the classroom. Teachers who are well versed in their curriculum can use games to differentiate instructions for diverse proficient students (Siegle, 2015). Icard (2014) suggested that students should be encouraged and exposed on how to handle success and failure as well as how to use critical thinking and problem-solving skills through the competitive nature of the game as it will be a valuable learning experience from using digital games in the classroom. Thus, a digital game named Kahoot would serve the purpose.

USE OF KAHOOT!

Kahoot! (can be accessed through <https://getkahoot.com>) is a digital game that can be used in classrooms to engage students through game like pre made or impromptu quizzes, discussions and surveys (Dellos, 2015 & John, 2015). Kahoot! not only promotes an interactive fun learning environment, but also challenges students in the learning process. Teachers can explore the ample functions provided on the platform whether to create their own quiz or to utilize available quizzes created by people around the globe (Graham, 2015). What makes Kahoot! more interesting is the fact that students themselves can become the master of their own quizzes which in turn can give them a sense of empowerment in the classroom atmosphere (Dellos, 2015).

RESEARCH PHILOSOPHY AND DESIGN

From the perspective of the Social Constructivism philosophy, it is essential to observe how individuals understand and make meaning out of the world and lives they live in. In context, this study aims to see the process of the interaction between the teacher, students and the game, and how students construct their relationships through playing Kahoot! in the classroom. This study focusses on the observations and the views of the participants by observing and conducting an interview session afterwards. The researchers then make an interpretive stance in regards to the findings from the participants.

This study employs a qualitative approach which intends to investigate the use of Kahoot! for classroom engagement. A single instrumental case study approach has been chosen to investigate a single issue which is the respondents' engagement when being involved in a game-based language activity. Two instruments were developed which are the observation tool and interview questions respectively. The result of the Kahoot! quiz is used as part of the document analysis. In order to collect data, a classroom of 29 students has been chosen. The quiz was conducted in one day in class. The teacher recorded the group interview session while the observer wrote field notes. The data collected was analysed through the description of the case and the themes of the case.

The research questions addressed are as follow:

- 1) To what extent have the students mastered the words that they have read in the text?
- 2) What is the students' level of engagement when playing Kahoot! in class?

Since the activity of testing students' vocabulary skill involves the use of a game-based application, it is expected that there will be different patterns of behaviour occurring, thus showing different levels of engagement.

RESEARCH SCOPE AND PROCEDURES

i) Researchers' Role

Two researchers were involved in this small case study where one was a non-participant observer and the other was the interviewer, who also acts as the teacher monitoring the game.

ii) Sampling

A purposeful sampling was adopted. A set of 29 Faculty of Biomedical Engineering (FBME) students comprising of 6 males and 23 females from one of the first year English classes were chosen. During the study, they were taking the first level of English subject offered in UTM which is ULAB 1122 or known as Academic English Skills. They were chosen because they have been exposed to the testing of vocabulary beforehand in a random pop quiz session. They are also at a moderate to excellent proficiency level with a MUET result of band 3 and above. MUET or Malaysian University English Test is an entry requirement for the local students before they enter university and all the students in this class are local students. Additionally, this particular class is considered a proactive class as the students are very responsive during the teaching and learning session and they display a good sense of helpfulness among classmates. With regards to Kahoot!, they are familiar with the game since they have played it in the other subject they are currently taking this semester, so it was an advantage for the teacher in giving instructions prior to conducting this study. The students were instructed to form groups with whomever they prefer. This is to ensure they are comfortable with their group formation. Each group consists of 4-5 students and they named their groups as So High People, WBB, Girlzzz, Chips, Michafeti and Awesome.

iii) Setting

The study was conducted in a normal lecture room at Block T03. This particular building is a new infrastructure in UTM where the seats are movable and this fits the 21st century learning classroom. Movable chairs can help teachers to design the classroom setting that will eventually encourage engagement among the students (Rands & Gansemer-Topf, 2017). Students were divided into groups due to the limited Internet connection in the lecture room thus, only one student for each group was responsible to click the answer using their mobile phones. Moreover, the teacher also prepared her own mobile data in case connectivity went absent. In order to play the game, the teacher projected the prepared synonym quiz in front of the class which was accessed from <https://getkahoot.com> while

the students had to access the game through <https://kahoot.it/>. They only need to enter the Pin Code given by the teacher.

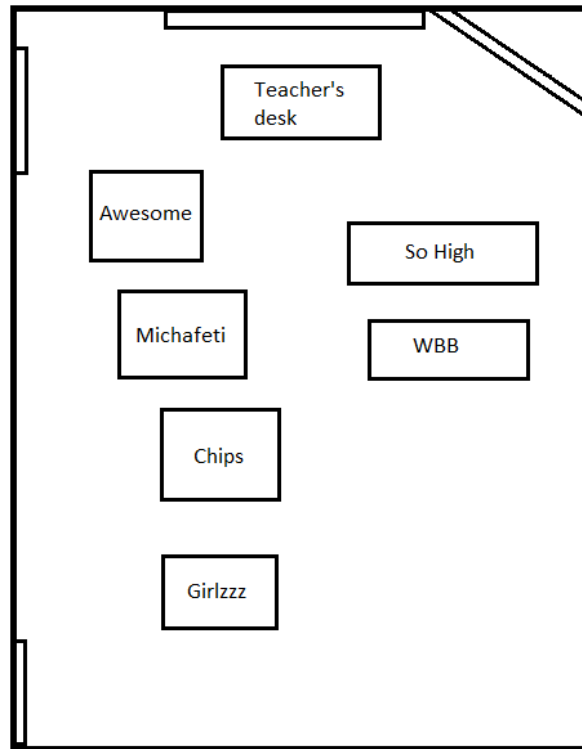


Figure 1 Class Seating Chart

iv) Instruments

A synonym quiz was created on Kahoot! which can be accessed from <https://kahoot.com/>. The questions formulated were words from the English for Academic Purposes textbook used by the ULAB 1122 students. The words selected came from chapters which were already covered in the classroom so students were only required to test their synonym skills. There are four types of activities on Kahoot! but the quiz option was chosen to study active engagement of the students while playing in the classroom. For the purpose of investigating research question 1, only the result of the quiz was obtained to be analysed and discussed. The excel scoresheet was generated on Kahoot! platform where users can download it for free.

For the interview session, which was recorded, it was decided that it would be conducted in a semi-structured manner where only three were asked and anyone can answer or add on to a previous answer given. The questions in the interview comprised of understanding what were the feelings experienced by the students while playing the game, the game itself and playing it in groups.

Additionally, the participants were also asked what are the advantages and disadvantages of playing digital games in the classroom. The session was then transcribed for analysis.

The observation was done through event sampling, where the researchers have already decided on what events or behaviours to look out for and the data is gathered by tallying the students' actions (McLeod, 2015). In this case, their actions are divided based on visual and auditory cues elaborated below. This method will determine how often the students engage with the game through observational reception.

For the observation rubric, it focusses on the following five aspects, which are

- 1) Teacher's engagement with the students
 - This aspect was observed through the teacher's actions in making sure the students are engaged with the activity, i.e. checking up on the students by asking questions, ensuring that the game goes smoothly technical-wise, and keeping up and updating the students' scores
- 2) The students' engagement
 - This aspect observes how the students are engaged with the game itself—through the reaction towards the questions, speed of answering questions, making sure they choose the right answer and keeping up with the scoreboard—through visual and auditory receptivity and reactions such as body posture (huddled or distant) and whispered discussions and exclamations of shock respectively.
- 3) The interaction between group members
 - The interaction between group members sees how the teammates communicate and engage with one another and is observed through visual and auditory receptivity and reactions, which are gestures (shoves, high-fives, fist bumps and claps), and whoopings ('yes!', whispers, and loud discussions) respectively.
- 4) The interaction between different groups
 - The interaction between different groups sees how the students engage with the other opposing teams and is observed through visual and auditory receptivity and reactions, which are gestures (hand gestures directed to the teams) and whoopings (cheers, jeers, laughs) respectively.
- 5) Students' response post-activity
 - Field notes were taken

A column was made for miscellaneous observations that were significant for this research.

v) Data Collection Strategy

Data was collected all in the same day. The first 10 minutes was used to explain the quiz to the students. Since the students already have a previous experience of playing Kahoot!, the instruction was emphasized more on the grouping since they had to play this in groups. It took around 10 minutes for them to group themselves and settle down. The next 15 minutes was dedicated for the students to play for Kahoot! Quiz and another 15 minutes were used to conduct the group interview. The teacher asked the first question out loud and asked for a volunteer. After the first respondent

raised her hand, other members followed suit either to support or to counter the answer. Field notes were taken by the observer throughout the process while the teacher was controlling the Kahoot! and interview session. Since there were only two researchers involved, all processes were conducted concurrently.

vi) Data Analysis Strategy

After data collection, a set of strategies were adopted to ease the analysis process. Firstly, for the Kahoot! quiz result, the scoresheet was obtained on the platform itself to see the overall performance of each group with regards to their synonym skill. Secondly, the recorded interview session was transcribed and all significant responses were listed down according to the three questions asked during the interview session. Finally, the data from the observation rubric was tallied and tabulated. The total tallies for each aspect and the characteristic (visual and auditory) was totalled in order to see the engagement made by the groups.

FINDINGS AND DISCUSSION

i) Result of Kahoot! Quiz

SYNONYM QUIZ	
Played on	23 Nov 2017
Hosted by	waniesk
Played with	6 players
Played	20 of 20 questions
Overall Performance	
Total correct answers (%)	91.30%
Total incorrect answers (%)	8.70%
Average score (points)	21355.33 points

Figure 2 Synonym quiz overall performance scoresheet

	A	B	C	D	E
1	SYNONYM QUIZ				
2	Final Scores				
3	Rank	Players	Total Score (points)	Correct Answers	Incorrect Answers
4	1	So High People	25095	19	0
5	2	WBB	23929	19	1
6	3	Michafeti	21300	18	2
7	4	Girtzzz	20149	17	2
8	5	Chips	19247	16	2
9	6	Awesome	18412	16	3
10					
11	Switch tabs/pages to view other result breakdown				

Figure 3 Synonym quiz grouping scoresheet

The two figures above show the results of each group with regards to their synonym skills. It can be seen from Figure 2 that the majority of the questions were answered correctly with the overall score of 91.3 percent. This shows that the students have mastered the words chosen for the synonym questions which were previously discussed in the textbook chapters. Additionally, it can be observed that all six groups managed to answer almost all of the questions correctly with So High People and WBB leading with just one wrong answer. However, it is to be noted that even though Chips and Awesome scored 16 from a total of 20 marks, their wrong answers were mainly due to the loss of Internet connection and mistakenly clicked on the wrong answer.

ii) Observations while Playing Kahoot!

Teacher’s Engagement with the Students

As the person introducing the game to the students, the teacher plays a significant role in making sure the students are acquainted and familiar with the game. The teacher has made the flow of the game well to her best abilities, by providing internet access to groups who had trouble with internet access and also by hyping up the groups to try to score the most points. The teacher engages with the teams by referring them by their team names, often ‘hying’ them to score better in order to get their names on the scoreboard, as only 5 teams will be shown after each question. The teacher also challenges the other teams to beat WBB, who was dominating the quiz for most of the rounds. These tactics help the students engage with the game even more, as they strive to score better after every round. A more detailed explanation of the student’s engagement is discussed below.

Student's Engagement in the Game

The engagement is overall excellent, with the majority of the groups displaying outward expressions of happiness, anxiousness, and enthusiasm. These expressions were observed through hand gestures, gasps, whoopings, and physical movement from the group.

Some groups were seen to be vocal, namely So High People and Chips, while some prefer to keep the discussions to themselves, such as Awesome, WBB and Michafeti. There was a uniform act of huddling for all groups while they answered the quiz as they discussed answers without being overheard. This portrays their competitiveness in playing the quiz, hence shows how engaged they are in the playing Kahoot! So High People scored the most in terms of the visual aspects and the auditory aspect, followed by chips while Awesome scored the lowest on both aspects and the overall total for this category. Overall the students showed more auditory cues than visual ones when expressing their delight or dismay and engagement in the game.

Interaction between Group Members

This game is not only a race against other teams, but also a race against time, so the students were depending on the quick wit of their teammates while trying to not be overheard by other groups. Most of the students discussed their answers in a quiet but hurried fashion. Exclamations can be heard from time to time from the groups, especially after they see the correct answer. There were also congratulatory yes's among the members when they got the correct answer. So High People members were also the ones who used exasperated hand gestures the most, particularly the act of throwing hands in the air and arm-punching as an expression of how close they were behind the leading team WBB. One member from WBB had expressed fear to her teammates by saying "*Takut*", as the So High People team was about to overtake their position. One member from Michafeti team was overheard advising her teammates to speak softly, as their answers might be overheard by other teams. These interactions showed how interacting with group members does reflect engagement towards the game. Overall, So High People scored the most in terms of physical cues, while the quieter team Girlzzz has expressed the most auditory cues, mainly active discussions between the group members. Their active discussions make up for the lack of physical action, yet it is still seen as a form of engagement to the game. Both visual and auditory cues were expressed at the same level for this aspect.

Interaction between Different Groups

The interaction between the groups can be seen when the quiz scores were being compared with the groups, which happens after every question. Only then will the students, after moments of silence of answering the questions, break into whoops, gasps and claps. The teacher and the students would playfully tease the losing group, which was initially blamed by internet connectivity problems. Some groups were vocal about their celebration or loss, namely So High People and Chips, and were met with reactions such as sighs from other teams. Interaction is most seen between teams of close proximity, namely Chips and Michafeti. On one occasion, Michafeti was directly jeering at their

direction, and laughter ensued. By then end of the quiz, So High People was victorious, and the results were met with playful sighs from the other teams and whoops from the winning team. In the observation, Chips showed the most interactions with other teams, while WBB had showed no outward interaction with the others. Auditory cues were more prominent than visual cues.

Overall, So High People showed the most engagement through the visual and auditory cues, followed by Chips, and Girlzzz. Awesome, Michafeti and WBB each garnered the same scores. Auditory cues were more implemented by the students than visual cues, and it was evident that engagement in the form of sounds of exclamations and exasperation dominated the room that day.

iii) Post-quiz Interview

Observation during the Interview

As the teacher addressed the question to the class as a whole, rather than in their groups, the formation of groups seemed to dissipate. This can be seen when the students collectively answered the general questions. The students also seemed to agree with the points made by the respondents, regardless of the team. Their classmates' answers were met with nods and affirmative noises such as 'mmhmm' and 'yeahs'. These responses can be seen on questions like why Kahoot! is an enjoyable game in the classroom and the advantages of the game in the classroom. The responses to the game are a sign of familiarity with the game. The students, as a whole, nodded and agreed that playing Kahoot! is a fun and great way to implement language games in the classroom. Towards the end of the session, the students applauded as the teacher thanked the students for their cooperation, showing that they are eager and satisfied with the classroom session.

Interview Session

The interview was conducted right after playing Kahoot!. The interviewer, who was also the class teacher asked three questions. The session was done collectively while everyone was still seated in their groups as they faced the teacher. For the first question, Respondent 1 raised her hand and stated that Kahoot! is a good medium for them to enhance their learning as it promoted healthy competition. This coincides with Omar (2017) in her study which found that Kahoot! helps to attract students' attention and motivate their classroom participation. When students are given the opportunity to compete among each other either individually or in groups, it will give them a sense of gratification if they get the answers correctly. Moreover, Respondent 2 responded that this activity promoted unity. This shows that even though the main reason of dividing the students into groups was due to limited connectivity, it resulted in students feeling united with their team members to choose the best answer shown in front of the class. Another similar study conducted by Plump and LaRosa (2017) found that using Kahoot! in the classroom facilitates engagement, especially when it is played in groups. Respondent 3 stated that this activity helped to release the stress and tension they were facing, but it was countered by Respondent 2 who said that the limited time given to answer a particular question aggravated them more. This shows that different students have different patterns with regards to whether playing a digital game triggers their stress hormone or rectifies it. Finally,

Respondent 4 also stated that playing Kahoot! tested their competency with regards to their vocabularies, particularly whether they know the synonym for different words.

For the second question, the respondents were asked about the advantages of playing digital games in the classroom. Respondent 5 stated that it improved thinking and increased their knowledge. Respondent 6 said that it was the best way to learn vocabulary. Medina and Hurtado (2017) in their study also found that gamification is one of the latest approaches used to enhance the language skills and Kahoot! is one example that helps facilitate vocabulary learning. Respondent 7 added that it promoted communication. When students are required to get into groups and strategies on how to answer all questions correctly, it will initiate communication among themselves. This was observed during the game session. Moreover, the communication also traversed between different groups since they were competing to get the highest marks on Kahoot! When students feel interested to participate and communicate throughout a class activity, it shows that particular activity helps with the classroom engagement (Budiati, 2017).

The final question required the students' opinion on the disadvantages of utilizing a digital game for language learning. They mutually agreed that poor Internet connection was a challenge. It can be observed that during the game, some students became quite demotivated when a group was not able to submit their answer due to the loss of connection to the Kahoot! page. This somehow disturbed the dynamics of the whole class who was excited to answer. Additionally, when the teacher prompted whether or not they would prefer to play it individually in the future, all disagreed with a loud NO. Respondents 8 and 9 responded by saying that it will decrease sportsmanship and some students might get confused at the answers and are unable to get assistance from their classmates when answering.

CONCLUSION

Using game-based technology, in this case, Kahoot!, is proven to be effective in enhancing language skills as well as useful in initiating and fostering classroom engagement. From the results, it is found that the students have grasped the classroom objective of mastering synonyms based on their textbook. From the students' responses, Kahoot! is found to motivate the students to be more attentive and become more engaged in classroom participation. It also assists in realizing communication among the students, especially when played in groups. Language skills are also enhanced through the game. All of these responses show that classroom engagement can be accomplished while playing game-based technology. The responses are supported by the visual and auditory cues observed during the game, which illustrate classroom engagement through discussions, animated expressions, and active participation. Through these findings, it is evident that game-base technology such as Kahoot! should be implemented in the classroom from time to time to engage the students in classroom participation.

REFERENCES

- Budiati, B. 2017. Ict (Information and Communication Technology) Use: Kahoot Program For English Students'learning Booster. In *Proceedings Education and Language International Conference*. 1(1).
- Dellos, R. 2015. Kahoot! A Digital Game Resource for Learning. *International Journal of Instructional Technology and Distance Learning*. 12(4): 49-52.
- Graham, K. 2015. TechMatters: Getting into Kahoot!(s): Exploring a Game-based Learning System to Enhance Student Learning. *LOEX Quarterly*. 42(3): 4.
- Icard, S. B. 2014. Educational Technology Best Practices. *International Journal of Instructional Technology and Distance Learning*. 11(3): 37-41.
- Johns, K. 2015. Engaging and Assessing Students with Technology: A Review of Kahoot! *Delta Kappa Gamma Bulletin*. 81(4): 89.
- Krauskopf, K., Zahn, C. & Hesse, F. W. 2012. Leveraging the Affordances of YouTube: The Role of Pedagogical Knowledge and Mental Models of Technology Functions for Lesson Planning with Technology. *Computers & Education*. 58(4): 1194-1206. Retrieved December 13, 2017 from <https://www.learntechlib.org/p/67467/>.
- McKinley, J. 2015. Critical Argument and Writer Identity: Social Constructivism as a Theoretical Framework for EFL Academic Writing (PDF). *Critical Inquiry in Language Studies*. 12(3): 184-207. doi:10.1080/15427587.2015.1060558.
- McLeod, S. A. 2015. Observation Methods. Retrieved from www.simplypsychology.org/observation.html.
- Medina, E. G. L., & Hurtado, C. P. R. 2017. Kahoot! A Digital Tool for Learning Vocabulary in a language classroom. *Revista Publicando*. 4(12 (1): 441-449.
- Mullen, R. and Wedwick, L. 2008. Avoiding the Digital Abyss: Getting Started in the Classroom with Youtube, Digital Stories and Blogs. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*. 82(2): 66-69.
- Omar, N. N. 2017. The Effectiveness of Kahoot Application Towards Students' Good Feedback Practice. *People: International Journal of Social Sciences*. 3(2).
- Plump, C. M., & LaRosa, J. 2017. Using Kahoot! in the Classroom to Create Engagement and Active Learning: A Game-Based Technology Solution for eLearning Novices. *Management Teaching Review*. 2(2): 151-158.

- Rands, M. L., & Gansemer-Topf, A. M. 2017. The Room Itself is Active: How Classroom Design Impacts Student Engagement. *Journal of Learning Spaces*. 6(1): 26.
- Siegle, D. 2015. Technology: Learning Can Be Fun and Games. *Gifted Child Today*. 38(3): 192-197.
- Zarzycka-Piskorz, E. 2016. Kahoot It or Not? Can Games be Motivating in Learning Grammar? *Teaching English with Technology*. 16(3): 17-36.