

BENEFITS AND CHALLENGES OF USING GAME-BASED FORMATIVE ASSESSMENT AMONG UNDERGRADUATE STUDENTS

Fatin Kamilia Mohd Arif, Natasha Zaireen Zubir,* Maslawati Mohamad, Melor Md Yunus

Faculty of Education, Universiti Kebangsaan Malaysia, 43600 Bangi Selangor, Malaysia.

Email: fatinkamilia.mohdarif@gmail.com, natashazaireenzubir@gmail.com,*maslawati@ukm.edu.my,

Email: *melor@ukm.edu.my

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Abstract

Purpose of the study: This research aims to identify the advantages and challenges faced by TESL undergraduates from Universiti Kebangsaan Malaysia in using Kahoot as a formative assessment tool in a course, i.e., Teaching of Writing in English as a Second Language Context.

Methodology: The research instruments employed are semistructured interviews and questionnaire. All 46 Year 3 TESL students enrolled in the course responded to the questionnaire, while five of them responded to the individual interview session.

Main Findings: The findings indicate that the majority of the respondents agreed that the application of Kahoot enables students to relate to lectures and lecture notes, recall important points, and discover other useful information and knowledge pertaining to the course. Despite the advantages mentioned, the challenges faced were also identified. Among the challenges mentioned are students' readiness and mastery level of the topics revised.

Applications of this study: With the proper usage of Kahoot in a classroom context, both educators and students could adopt it as a learning catalyst to enhance teaching and learning.

Novelty/Originality of this study: The students' knowledge and interest could be improved using Kahoot if the educator plays his/roles and know what they should do to implement Kahoot in their own class.

Keywords: Assessment Tool, Gamification, Formative Assessment, Kahoot, Undergraduate Students.

INTRODUCTION

Technology has become an overwhelming part and parcel of our lives that shapes the way we live today. One of the most groundbreaking shifts that are occurring in this generation is the rapid evolution of smartphones. Phones are no longer limited to their capability of simply connecting users; in fact, the definition of "connection" has been far broadened via integration of the Internet. The ubiquity of these devices, along with their popularity among students, makes them suitable for use in educational contexts (El-Hussein & Cronje, 2010). People are now readily interconnected to one another, and such command is resting at our fingertips. Interestingly, smartphones have altered the world of education significantly by means of providing more access and control to students in terms of defining their learning (Figueiredo, 2006). Access to knowledge is now heavily facilitated by an online reservoir of references and experts from various walks of life. Students now are free to manipulate these available resources and exercise a manner of control, i.e., they can choose what they are interested to know.

However, there is a rise in the notion of adding a new edge to the classroom itself, whereby students are invited to experience a "gamified" learning experience by means of utilizing game-based learning applications (Kapp, 2014). Such change promises new frontiers to be explored, especially in the way learning is now designed and executed. The shift from a teacher-centered classroom to a dynamic student-centered experience has been prioritized for many years, but this does not ensure engagement and full participation from students (Serbessa, 2014). In a gamified environment, students are exposed to activities conducted as though they are obliged to collect certain amount points or reach designated stations before they could proceed further. The idea of "games" in learning solidifies a student-centered learning experience even more as they take full control of their learning during classroom activities.

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One of the rising stars in the world of gamification is Kahoot, an interactive application that allows users to challenge one another in a competitive environment. According to Black and William (2003), since the introduction of computers to schools, it has been predicted that technology will make it possible to provide more regular, high-quality formative and summative assessments. Kahoot has been a popular alternative that replaces regular forms of assessment, normally

formative assessments (Dellos, 2015). Kahoot is a web-based learning platform, has enabled many educators to revamp their teaching methods. They have shifted their role from the sole provider of knowledge to a knowledge navigator. Thus, educators become the facilitator.

Currently, Kahoot has been employed as a teaching and learning tool at tertiary institutions in Malaysia. Since its implementation is still at the initial stage, studies on the benefits and challenges of Kahoot as a formative assessment tool should be carried out. By identifying its challenges, measures to overcome or reduce its challenges could be discovered, too, and its usability could be enhanced. Therefore, the researchers carried out this study to (1) investigate the benefits obtained by students when using Kahoot and (2) investigate the challenges faced by students while using Kahoot.

LITERATURE REVIEW

Theoretical Background

Connectivism is a new theory that attempts to capture and reflect the complexity of learning in a world of proliferating information. This research is based on the theory of connectivism (Siemens, 2005), as it uses the concept of a network with nodes and connections to define learning through gamification. Students recognize and interpret patterns and are influenced by the diversity of networks, strength of ties and their context through the digital world. In the context of Kahoot, the learning path is guided by the learner (discover different paths) and the teacher (choose one path). On the other hand, the learning processes are of an ad hoc network, while the teaching focuses on the dynamics of networks with a special view to knowledge allocation (Bíró, 2014).

Gamification

According to Mohamad et. al., (2018) and Fardo (2013), gamification is the concept of games and game mechanics to maintain engagement with users and to solve problems. In the same line of reasoning, Domínguez et al. (2013) state that gamification is the use of gameplay elements and game design techniques in nongaming contexts to engage people and solve problems.

This happened as a result of the current education system, whereby it focuses on the concept of a teacher-centered learning environment, i.e., a fairly passive lecture-discussion format where the lecture talks and most of the students only listen (Albrecht & Green, 2008). In relation to the growing push for technology in classrooms, educators need to consider all of the possibilities and benefits that can be gained by using different resources during their classroom instruction. It can be a daunting and challenging task for educators to find effective, competitive learning games that engage students (Lai et al., 2014). Therefore, technology innovators have sought to merge both content knowledge and fun.

The use of gamification in a learning environment is seen as important additional tools in one's learning experience. A realization has drawn upon educational researches in emphasizing games as crucial components for both formal and informal education. Within this context, it is clarified that a game does not only function for fun purposes, but that elements of education involving activities that educate or instruct can be embedded as a means of imparting knowledge (Sobodić, Balaban, & Kermek, 2018).

Benefits of gamification

Gamification also brings a multitude of benefits to users. This view is posed by Hamari, Koivisto, and Sarsa (Hamari, Koivisto & Sarsa, 2014) who suggest that gamification serves as a technological partner that provides benefits to many disciplines, such as entertainment, education, and social.

This concept of gamification also elicits the idea of "learning through play," which embraces the use of a game for teaching and learning. A new generation of learners is more interested in activities that are in forms of entertainment and leisure. Many authors (Deterding et al., 2011; Gee, 2003; Prensky, 2001; Blohm & Leimeister, 2013) claim that gamification represents a breakthrough in education that can transform the way people learn in and out of the classroom via its intrinsic capacity to motivate action, solve problems, and enhance learning in the most diverse areas of knowledge and life of individuals. The addition of entertaining elements in the teaching and learning environment, particularly in the subject of writing, would further encourage one's interest to write and improve his or her writing (Nitkin, 2011).

As supported by Albrecht and Green (2008), learning in the form of gamification can elevate the motivation of an individual as compared with the traditional classroom setting. By focusing on this context, learners feel more connected, their cognitive growth (recall of factual knowledge, improve problem-solving skills, apply concepts and principles) is enhanced as well as eliciting more effective learning. Besides, it can also be played repeatedly either with the same or different participants, thus supporting the idea of additional learning, which is the dynamic nature of Kahoot itself. Murphy (2005) also agreed as gamification turn students into active participants rather than passive consumers of information. The authors also revealed that active engagement by students has a positive impact on one's retention of learning.

Icard (2014) suggested that students should be enticed by the competitive nature of the game if it is going to be a valuable learning experience for students. According to Icard (2014), students benefit from using digital games in the classroom by learning how to handle success and failure as well as how to use critical thinking and problem-solving skills. Thus, Kahoot

is a digital game that can be used in classrooms to engage students with content in a fun way. Kahoot not only fosters a fun learning environment but also challenges students in the learning process (Jamilah & Maslawati, 2017).

In recent years, researchers have started exploring various approaches for bridging informal and formal knowledge representations in game-based learning. As mentioned above, one fruitful approach to the problem is to integrate or embed formal knowledge representations within the game (Clark & Martinez-Garza, 2012; Clark et al., 2011; Clark et al., 2010; Habgood & Ainsworth, 2011; Holbert & Wilensky, 2012). In this context, supplementing Kahoot with external scaffolds could support the construction of links between game content and learning content (Charsky & Mims, 2008; Garris, Ahlers & Driskell, 2002; Turan, 2016).

It also acts as a tool of assessment. The formative evaluation is the control function being performed throughout the course in order to check students' performance in achieving course objectives (Bloom, 1971; Haydt, 2002). It is mainly through formative assessment that students identify their mistakes and performance. The formative assessments also serve as a stimulus to navigate their study more systematically (Menezes & De Bortolli, 2016).

Challenges of gamification

Freitas (2006) claimed that gamification has shown positive impacts on learning because it involves learning that occurs within a meaningful context, which leads to application and practice. However, there are several challenges of gamification that must be accounted for.

Van Eck (2006) also recommended that commercially available games be integrated into classroom settings for learning due to quality and cost-effectiveness. However, several studies by Annetta et al. (2009), Freitas (2006), and Tüzün (2007) have countered this belief by emphasizing on the need to match the games to the curriculum and learning outcomes. Studies by Gros (2007) and Tüzün (2007) also claimed that gamification could be challenging in terms of time restrictions and delivery of the lesson itself. Besides, Tüzün (2007) also extended his concern on the relevance of 'backstories' that should accompany games to the learning outcomes. All these factors could be a detrimental edge to gamification if they are not addressed correctly.

Motivation

The role of motivation is regarded as the most vital in gamification. According to Muntean (2011), gamification intends to combine intrinsic motivation with an extrinsic one in order to raise motivation and engagement. Meyer (2008) examined the impact of the point system used in a game on the quality of postings in an online discussion forum by graduate students and found that nine of 13 students reported that points had no effect on the quality of their postings. A more recent study by Hanus and Fox (Hanus & Fox, 2015) discovered that gamification does affect students' motivation and performance, and there is an imminent interest in gamification among college students. Based on Kloet (2014), higher institutions today could consider curricula that include gamification, but they must be designed with students' engagement in mind. Similarly, Kuh et al. (2008) posited that engagement is a critical part of gamification. In conjunction with this, Stott and Neustaedter (2013) suggested that good gamification should include good game design, which comprises instant feedback, freedom to fail, progression, and narrative stories.

Affective Level

Apart from motivation, gamification also draws negative impacts on students' affective level. Studies conducted by Domínguez et al. (2013) and Hanus and Fox (2015) showed that the use of "scoreboards" in gamification poses a threat to the students' affective level. Besides, Charles et al. (2011) discovered negative feedback from the implementation of "competition" in gamification. According to Wilson, Calongne, and Henderson (2015), a mixture of abilities in a classroom could be a hindrance in any gamified setting. If gamification does not address these differences, frustration or high affective level shall exist within the learning environment. In addition, Hakulinen (2015) and Whitton (2012) found that not all students could benefit from gamification. Hakulinen et al. (2015) reported that some learners have strong negative feelings about the use of badges in a computer science course. They conducted this study among 281 university students from the University of Aalto University of Finland using a quasi-experimental approach. They analyzed students' behaviour using log data. They discovered that more 30 percent of the respondents prefer to submit their work last minute. They did not feel the need to submit their work on time because they were already too familiar with this system since primary school. According to some of their respondents, this system is not fair as students' learn at their own pace. This negative affect in gamification could also be justified by the mismatched level of difficulty to students' abilities. Domínguez et al. (2013) noted that extreme frustration and high affective level of anxiety in a gamified setting could be avoided by carefully designing tasks and learning activities with appropriate levels. This is further supported by Stott and Neustaedter (2013) who posited that frustration in learning can be reduced by carefully embedding the element of progression in gamification. Although many prior studies highlighted the practicality of using games for the learning process, the implementation of gamification in the teaching and learning processes is not broadly used (Treher, 2011; Fatin Kamilia et al., 2018).

RESEARCH METHOD

This research used a mixed-method approach in which the researchers gathered quantitative and qualitative data using survey questionnaires, face-to-face interviews, and field notes.

The respondents

The integration of Kahoot is a form of formative assessment, which was conducted throughout the semester and consists of 14 weeks. Each topic of the course featured six different formative assessments using Kahoot, which were created and conducted after each lesson was delivered. Kahoot activities were given to the students as a measure to evaluate students' comprehension and to ensure that they were listening attentively during the lessons. Each lesson was for two hours. The Kahoot activities were only 15 minutes at the end of the two-hour lesson. The questions for each Kahoot activity were based on that previous lesson. It was conducted in the next lesson to encourage the students to revise their lessons individually.

The setting

The integration of Kahoot is a form of formative assessment which was conducted throughout the semester which consists of 14 weeks. There were six different formative assessments on each topic of the course using Kahoot were created and conducted after each lesson was delivered. Kahoot activities were given to the students as a measure to evaluate students' comprehension and to ensure that they were listening attentively during the lessons. Each lesson was 2 hours. The Kahoot activities were only 15 minutes at the end of the two-hour lesson. The questions for each Kahoot activity were based on that previous lesson. It was conducted in the next lesson to encourage the students to revise their lessons individually.

Course objectives

The course of Teaching of Writing in an ESL Context aims to acquaint learners with writing techniques necessary for effective teaching of writing in English. By the end of this course, students should be able to:

1. Understand the theories and approaches required for effective teaching of writing,
2. Teach students to write grammatically correct English,
3. Utilize appropriate writing techniques essential for the teaching of ESL writing.

Students were required to read the notes and completed the tasks uploaded in the MOOC prior to participating in the Kahoot sessions. This module consists of eight units. It covers the theory of writing in the first language and second language that assist learners to understand what is involved in the writing process and the teaching process. Moreover, learners also introduced to writing approaches and writing strategies and skills and mechanics of writing. In the end, learners too will be able to identify strategies to teach writing for different level students and assessing writing skills and therein design lesson plan and find out resources for varieties of materials to be used in writing.

Research instruments

Three research instruments were being employed in this study. They are survey questionnaire, interview responses and field notes.

The questionnaire items were designed by the researchers based on the basic principles of Connectivism theory (Siemens, 2005). There were two separate sections that address both benefits and challenges of integrating of Kahoot. The items on the benefits and challenges of Kahoot were derived from the following principles:

1. Learning is a process of connecting specialized nodes or information sources. Ability to see connections between fields, ideas, and concepts is a core skill (Siemens, 2005).
2. Capacity to know more is more critical than what is currently known Nurturing and maintaining connections is needed to facilitate continual learning (Siemens, 2005).

The survey questionnaire consists of 10 items on the benefits and 10 items on the challenges. All the items are placed on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree" (1- strongly disagree, 2-disagree, 3-neutral, 4-agree, 5 strongly agree)

In order to obtain richer data for this study, an individual semi-structured interview was carried out to the student participants. The 5 interview questions were guided by a list of questions that were based upon the two abovementioned research questions.

The field notes consist of the researchers' observations on the respondents' behaviours, performance, interests, involvement and the researchers' feeling on their observations.

Research Procedure

The researchers carried out six observations and produced field notes for each observation. All six observations were carried out during the Kahoot activity. The individual interview sessions of approximately 15 minutes were carried out at the beginning of the following semester. The questionnaire was distributed to the respondents in the following semester. The respondents were given only two days to respond to the questionnaire, which was uploaded via Google Form. All the respondents answered and returned all survey questionnaires.

RESULTS AND DISCUSSION

The first section of the questionnaire is to obtain the data to answer RQ (1) - To investigate the students' perceptions towards the benefits of Kahoot. Table 1 summarizes all responses in the form of percentages and means.

Table 1: Benefits of Using Kahoot

No	Items	SD (%)	D (%)	N (%)	A (%)	S (%)	M (\bar{x})
1	I can organize my thoughts better by using Kahoot to learn in the Teaching of Writing classroom.	0	5 (10.9%)	12 (26.1%)	19 (41.3%)	10 (21.7%)	3.74
2	I learn better about Teaching of Writing through short quizzes.	0	3 (6.5%)	5 (10.9%)	27 (58.7%)	11 (23.9%)	4.03
3	I retain information and knowledge better through the use of Kahoot.	0	4 (8.7%)	8 (17.4%)	23 (50.0%)	11 (23.9%)	3.89
4	I can relate theories and concepts to the questions easily while answering questions on Kahoot.	0	5 (10.9%)	9 (19.6%)	22 (47.8%)	10 (21.7%)	3.80
5	I can master a particular topic easily with the use of Kahoot in Teaching of the Writing classroom.	0	7 (15.2%)	10 (21.7%)	20 (43.5%)	9 (19.6%)	3.67
6	I can relate to lectures and additional notes as to enhance my Kahoot experience.	0	1 (2.2%)	6 (13.0%)	27 (58.7%)	12 (26.1%)	4.09
7	I can recall important points of chosen topics accurately with Kahoot.	1 (2.2%)	1 (2.2%)	4 (8.7%)	27 (58.7%)	13 (28.3%)	4.09
8	I discover a lot of other useful information and knowledge while using Kahoot.	1 (2.2%)	3 (6.5%)	6 (13.0%)	17 (37.0%)	19 (41.3%)	4.09
9	I can stay focused longer while using Kahoot as compared to normal lessons on Teaching of Writing.	2 (4.3%)	5 (10.9%)	5 (10.9%)	16 (34.8%)	18 (39.1%)	3.93
10	I improve my entire understanding of the lessons on the Teaching of Writing after series of Kahoot.	2 (4.3%)	4 (8.7%)	10 (21.7%)	22 (47.8%)	8 (17.4%)	3.65

Students' perceptions of the benefits of Using Kahoot

In general, the respondents' feedback on the benefits of using Kahoot as a formative assessment tool at a tertiary institution in Malaysia is proven to be positive.

From Table 1, interestingly on average, the majority of the students' answers are inclined to agree and strongly agree to all items. Most of the respondents provided positive response and perceived Kahoot as a beneficial tool for assessing their progress in their learning process. In this context, it is represented by the highest mean value of 4.09 for items 6, 7 and 8. The benefits discovered through the findings are:

1. Could relate to lectures and lecture notes,
2. Put more efforts to revise lessons,
3. Recall important points of a particular topic in a more enjoyable manner,
4. Discover new information, improve students' retention power and monitor students' progress.

Able to relate both lectures and lecture notes, and improve entire understanding of the lessons on Teaching Writing Skills (Item 1, 4, 5, 6)

For Item 6, 84.8% of the respondents agreed that they could relate more to the knowledge presented during lectures and lecture notes through their Kahoot gamification experience. Because they have to refer to notes on MOOC prior to participating in the Kahoot sessions, they were able to relate what they learned in class and read on MOOC. This is further supported by R3 who noted "*I could relate to the questions and theories easily as I have learned it in and outside of class; it's easier for me to master a particular topic in this manner.*" which is supported by 63.1% of respondents in Item 5 This statement is also agreed upon by 69.5% of students for Item 4 on how they could relate to the theories and concepts tested in the Kahoot sessions as to what they have read and done regarding the tasks on MOOC. Supplementing Kahoot with external scaffolds could support the construction of links between game content and learning content (Charsky & Mims, 2008; Garris, Ahlers & Driskell, 2002; Turan et al., 2016). In the same manner, it could also help students to organize their thoughts better, as agreed upon by 63% of students on Item 1. Moving on, as they were able to relate to what they had previously learned, this could help them to master a particular topic easily, as consented upon by 63.1% of students.

Put more effort to prepare and revise the lessons (Item 3, 10)

Because some respondents wanted to win the Kahoot games, some placed extra effort into reading the lecture notes prior to the class session. This statement is supported by the interview responses by R1: *“Yes I am. However, as a student, I should prep myself before the session just so I could answer the questions; personally, it is a good strategy for it is interactive and provide fun learning vibes.”* The researchers observed that all of the respondents were competing with each other to answer the questions. One respondent (R4) mentioned in the interview responses that she had the sense of competition that acted as a driving force for her to excel: *“Yes I do. Using Kahoot exposed me to competitive learning which I took as a positive push for me to excel.”* The first student to submit her answer would be considered the winner. Students could check their answers from the given screen in a few seconds. They could also identify the correct answer from the screen. Thus, students could countercheck their comprehension of the previous lesson and retain information as well as their knowledge better which can be seen in Item 3. From the observations, too, it could be seen that the lecturer also took a remedial measure by discussing the students’ doubts, queries, and problems after the game. This reinforced the students’ understanding as consented upon 65.2% of respondents in Item 10. These findings have proven that learners have better an understanding of given materials through active engagement in learning (Bicen & Kocakoyun, 2018). According to Jamilah and Maslawati (2017), the essence of active engagement is that it involves learners in the learning process by allowing them to analyze and reflect on the activities that are taking place in the classrooms. Based on this concept, it helps them to investigate the learning process from their very spectrum and take responsibility for their own learning. Therefore, it can be safely concluded that they are able to improve their entire understanding as agreed upon by 65.2% of the students. This statement is also supported by R2: *“I cannot deny the fact that Kahoot helps me to understand the whole learning process in a more efficient manner.”*

Recall important points of a particular topic in a more enjoyable manner (Item 7)

The majority of respondents (87.0%) agreed with Item 7, as they are able to recall important points of a particular topic with the usage of Kahoot. As playing the games requires fast responses, students are required to recall important parts of information quickly in order to click the choice of answers immediately on the screen. One respondent (R1) also claimed that he could recall the points he studied accurately as Kahoot was conducted in the classroom: *“Yes, this enjoyable form of gamification has allowed me to remember all of the points clearly and therefore, I am motivated to learn.”* It was observed that the respondents resulted in discussions during the Kahoot games. Students also carried out discussions after the class to complement each other’s understanding, which reinforced their understanding and cleared their doubts on some issues. Kean, Embi and Yunus (2012) further supported this statement by stating that learners who are involved in active learning can recall information quickly and effectively. Jamilah and Maslawati (2017) also agreed that the integration of active learning has made the learning experience more enjoyable. These findings are also parallel with Icard’s view (2014), in that the competitive nature of the online game could promote critical thinking and problem-solving skills, especially when the students share in discussions to obtain answers.

In this context, Kahoot has provided interesting audio-visual features. Students could enjoy the learning process as a whole with the colorful interface and catchy sound background and in the same manner; further, it encourages students to have a positive intrinsic motivation toward learning the content of the tested topic. This statement is agreed upon by R4: *“I find the features in Kahoot eye-catching and interesting.”* According to Dickey (2007) and Maslawati et al. (2018), the interactive learning environment could provide a flexible atmosphere for scaffolding of problem-solving along with the elements that foster intrinsic motivation. It is safe to conclude that the sense of competition in the games plus the attractive features of Kahoot are able to help students recall the important points in a more enjoyable manner.

Discover new information, improve students’ retention power and monitor students’ progress (Item 2, 8, 9)

As for Item 8, 78.3% of the respondents managed to discover new information as well as knowledge while using Kahoot. This is possible, as the questions and choices of answers can provide extra information that students missed while doing their revision prior to the Kahoot session. It becomes apparent that active learning practiced by learners could yield multifaceted outcomes, which are also supported by 82.6% of the respondents in Item 2. Short quizzes are used in many classroom settings, and previous research studies show how certain quiz activities have a strong influence on several academic domains, including better student performance (Maki & Waki, 2003) and long-term retention of content (Clump, Bauer & Alex, 2003; Jones, 1984; Wilder, Flood & Stromsnes, 2001; Johnson & Kiviniemi, 2009) as agreed upon by 73.9% respondents in Item 9. It is also agreed upon by R3 that *“I like short quizzes and I think I perform better when doing Kahoot.”* Because each Kahoot session took less than 15 minutes, it is efficient for students to retain their focus on answering the short quizzes. It was observed that the automatically graded quiz allowed students to know their own performance as, at the end of every Kahoot session, their ranking and number of correct and incorrect answers are shown on the screen. It also helps teachers to properly plan quiz content prior to the in-class session. The results, too, can be downloaded in the form of a spreadsheet by the teacher to monitor one’s progress.

In this context, Kahoot served as a formative evaluation; i.e., it is a yardstick for checking students’ performances in achieving course objectives (Haydt, 2002). It is mainly through formative assessment that students identify their mistakes and performance. The formative assessments also serve as a stimulus to navigate their study more systematically (Menezes & De Bortolli, 2016).

According to Maslawati et al. (2019), an online quiz using computers or mobile devices could be used as a platform for teachers to identify students' weaknesses. In their findings, the educators provided further elaborations on the areas in which students face difficulties in enhancing comprehension. The teachers could also reflect their own pedagogical approaches in delivering the content.

Challenges of Using Kahoot in Tertiary Level Classroom

The second section analyses all data obtained for RQ (2) - To investigate the challenges faced by students while using Kahoot. Table 2 summarizes all responses in the form of percentages and means.

Table 2: Challenges of Using Kahoot

No	Items	SD (%)	D (%)	N (%)	A (%)	S (%)	M (\bar{x})
1	I enjoy a fast-paced and competitive environment while using Kahoot.	1 (2.2%)	2 (4.3%)	5 (10.9%)	24 (52.2%)	14 (30.4%)	4.0
2	I know more than enough to be able to complete one Kahoot session.	0	8 (17.4%)	17 (37.0%)	16 (34.8%)	5 (10.9%)	3.4
3	I am a tech-savvy person and I can use Kahoot very well.	0	1 (2.2%)	4 (8.7%)	23 (50.0%)	18 (39.1%)	4.3
4	I have smartphones/ tablets that can support kahoot and other mobile platforms to learn writing.	0	1 (2.2%)	0 (0%)	15 (32.6%)	30 (65.2%)	4.6
5	I am highly motivated in completing all Kahoot in Teaching of the Writing classroom.	0	2 (4.3%)	9 (19.6%)	19 (41.3%)	16 (34.8%)	4.1
6	I always prepared to complete Kahoot every time in class.	1 (2.2%)	6 (13.0%)	12 (26.1%)	18 (39.1%)	9 (19.6%)	3.6
7	I am comfortable to sit in a competitive environment and compete my friends.	0	3 (6.5%)	5 (10.9%)	21 (45.7%)	17 (37.0%)	4.1
8	I know that my level of understanding of a topic is sufficient in order to complete Kahoot.	2 (4.3%)	4 (8.7%)	13 (28.3%)	19 (41.3%)	8 (17.4%)	3.6
9	I revise before I join Kahoot session in Teaching of Writing classroom.	2 (4.3%)	5 (10.9%)	13 (28.3%)	17 (37.0%)	9 (19.6%)	3.6
10	I find it easy to maintain participation level during Kahoot sessions.	0	4 (8.7%)	8 (17.4%)	21 (45.7%)	13 (28.3%)	3.9

Based on Table 2, the findings indicate that most respondents show a positive response to the use of Kahoot in Teaching of Writing classroom. However, there are several items in this section managed to elicit interesting responses on the challenges faced while using Kahoot in Teaching of Writing classroom. There are two main challenges which are:

1. Too much information to complete in one Kahoot session,
2. Lack of teachers' feedback on the Kahoot session.

Too much information to complete one Kahoot session (Item 1, 2, 6, 7, 8, 9, 10)

For Item 2, the total number of respondents is divided largely into big groups. With a mean of 3.4, only a total of 45.7% of respondents agreed that they had more than enough substantial information to complete one Kahoot session in class. Interestingly, as much as 37.0% or 17 respondents show that they were unaware of the amount of content knowledge needed in order to ace Kahoot. Another 17.4% claim that they do not know enough in order to complete a Kahoot. These figures could be related to students' readiness before actually participating in any form of assessments. From the interview, R5 mentioned that he felt the need to revise the topic once the Kahoot ended: "*I feel like checking notes again...I don't think I know everything and it's quite fast for me.*" This is further supported by 17.4% of respondents in Item 1. A similar response was also elicited from R3 where she was unsure of her own readiness when asked: "*Umm, I am not so sure; I thought I got everything covered but apparently not.*" These responses could be explained by students' participation in designing questions for Kahoot for the teaching of writing itself. The idea was to establish a student-oriented process, where students create Kahoot questions on designated topics and distribute them to their peers. In order to do this, they must first revise and construct understanding on their own. As Wilson, Calongne, and Henderson (2015) pointed out, a mixture of abilities in a classroom could be a hindrance in any gamified setting. The level of understanding as presumed by Student A might not reflect a similar result from Student B. Therefore, disarray of information and knowledge could be inferred, i.e., what is understood by the question creator could not be equated to what the rest of the class obtains. It is observed that, because Kahoot is a fast-paced game, it is crucial for its users to thoroughly master a topic in order to beat the time-limit provided. The lack of revisions and exercises on topics concerned lead to the state of "not knowing" and therefore portrays Kahoot as a new obstacle in learning. Allowing students to take charge of conducting a Kahoot session

could also mean an equal distribution of workload. However, it is crucial for students' progress to be monitored. The role of a teacher in a gamified setting will be thoroughly discussed later in this section.

In addition, the same pattern can be observed in Item 6, as only 58.7% agree that they are prepared before they play Kahoot in class. This is supported by the mean of 3.6, which signifies the lack of readiness before the assessment takes place. Item 9 also garners a relatively low mean at 3.6, with only 56.6% of respondents agreeing that they have revised on topics to be tested using Kahoot.

Next, Item 8 managed to elicit a total mean of 3.6 on the respondents' awareness of their understanding before completing a Kahoot. Although a higher percentage of positive feedback is recorded, the responses are still dispersed across five scales: 28.3% of our respondents are unsure of their abilities to gauge their own level of understanding before the assessment begins. The researchers found that most respondents had made simple revisions before every Kahoot session. These students relied heavily on the statistics provided by the application, and they often felt the need to perform better than in their previous ones. Even so, they were still unclear of where they stood before they participated in the assessment. This could be a worrisome signal that Kahoot could pose itself as a challenge in the teaching of writing classroom. In the same line of reasoning, there is a possibility that respondents have lost their motivation to perform well and to monitor their scores after each session. Deci and Ryan (1985) claimed that intrinsic motivation should be the central element of a game, where it serves as the beacon of autonomy and interest to progress further. Gamification often orients intrinsic motivation of users as a way to encourage and to maintain engagement. If the users of Kahoot lose their interest to perform well in every session, the statistics of performance would be useless because no one is interested in doing better. Furthermore, Item 10 with a mean of 3.9 can also be justified by the loss of intrinsic motivation among Kahoot users. From the interview, R4 said that *"I became less excited as we move on; I did not pay close attention to my performance because I was worried if I could not prepare well and plus, it gets really competitive."* This statement is agreed by 15.2% of respondents from Item 7 who felt uncomfortable in competitive environment. In order to dismantle this problem, every question designed for Kahoot must be at the same difficulty level. This could avoid information overload and motivation burnout at the same time. As mentioned by Domínguez et al. (2013) and Fatin Kamilia et al. (2018), extreme frustration and anxiety in a gamified setting can be avoided by carefully designing tasks and learning activities with appropriate levels. This is further supported by Stott and Neustaedter (2013), where they posited that frustration in learning can be reduced by carefully embedding the element of progression into gamification.

Lack of teachers' feedback to the students' performance (Item 3, 5)

Based on Table 2, our respondents are unable to uphold the principle highlighted in connectivism theory (Siemens, 2005), which is to display the capacity to know more than what is currently known and by making connections in order to ensure continual learning. Kahoot could promise a breakthrough in education, but its potential to perform as a valid mode of assessment is yet to be studied in great depth. Based on observations, all Kahoot sessions were student-led and 10.9% of the respondents in Item 3 mentioned that they are not competent technology users which can later affect their own performance. The students were assigned with topics to revise on and to create questions. Consequently, there was a decrease in the lecturer's presence as a facilitator. As mentioned in the interview responses, R5 stated, *"the lecturer should carry out a discussion after the quiz to help the students on their areas"*. Her statement is supported by R3 during the individual interview, *"I hope the lecturer could spend some time explaining why our answers are wrong before moving on to another topic"*. These responses indicate that they need the lecturer to spend some time to discuss their answers, especially on the wrong answers so that they could improve their comprehension of the topic. In addition to that, it will hinder them to complete the Kahoot sessions as supported by 23.9% respondents in Item 5.

Besides, no strict framework was introduced to monitor the questions used for Kahoot, especially in terms of intricacy and accuracy. Teachers should play a more productive role in terms of monitoring the type of questions created by their students. In addition, teachers must be able to monitor students' performance, as they need to be aware of their own progress as well. This statement is derived from two respondents: R1 and R4. R4 commented, *"The lecturer should check our questions to ensure their validity and reliability before our classmates attempted the questions."* R1 added by expressing herself, *"There might be wrong answers or even wrong questions. The lecturer should read and check the questions and the given answers preceding the online assessment. Our classmates' knowledge is just like our knowledge. Their answers could be wrong. Or we could discuss the questions in class. By doing this, we could see the lecturer is doing her roles. We feel more confident"*.

As such, instructional principles based on a constructivist framework require instructors to anchor learning activities within a broader context while supporting students in developing ownership of the task. In order to encourage active engagement with course materials, the lecturer must design authentic tasks that reflect the complexity of the environment students will face, then support and challenge students' thinking while encouraging them to test their ideas against alternative views and alternative contexts. Throughout this process, instruction not only facilitates a content review but provides the opportunity for reflection on the learning process Savery and Duffy (1995).

CONCLUSION AND IMPLICATIONS

As highlighted by this research, there are a variety of ways to utilize Kahoot to supplement traditional classroom activities. We have determined that gamification techniques have the potential for being effective in an educational setting. In this

context, the integration of Kahoot is more than just a delivery medium: It is a way of learning that challenges current views of teaching, thinking, and instruction by blurring the line between teacher and student by shifting the focus from knowledge acquisition to critical application of information. The advantages identified by the researchers are of students' capability to successfully relate to lectures and lecture notes, put more effort into revising lessons, recalling important points of a particular topic in a more enjoyable manner, and discover new information, improve students' retention power, and monitor students' progress. With the primary goals of promoting students' critical understanding and analysis of course information, the focus should not be on just the advantages itself; instead, the emphasis must be on the careful selection of appropriate instructional strategies to meet course content and process goals. In this sense, the challenges identified are of having too much information to complete in a single Kahoot session and lack of teachers' feedback on the Kahoot session students' centered approach.

It could be concluded that the results of qualitative and quantitative parts of the instrument were consistent and reflected benefits and challenges on using Kahoot as perceived by TESL students in a tertiary-level institution, particularly Universiti Kebangsaan Malaysia. Moreover, this series of Kahoot studied was only used in the teaching of writing in the ESL context in the time span of 14 weeks. Due to this, this research might not reflect other classroom situations that use Kahoot as a part of their learning and assessments. Plus, all respondents were only selected among TESL students. Therefore, studies should be carried out with a greater number of students from other courses and institutions, so that the findings could be generalized.

FUTURE SCOPE OF THE WORK

In the future studies, respondents of various backgrounds namely age, programs, geographical location, and skills could be included, so that there is a more comprehensive pool of data that would further enhance the necessity of the research. Besides, other types of technology-based assessments or digital tools such as Quizizz, Coggle, Crowdsignal, and others could also be implemented in language classrooms in order to study their advantages as well as the challenges faced by students and teachers. In a few years later, Kahoot might be outperformed by other game-based applications that are more inclusive and interactive to suit the needs of our students.

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