

# Students perception on Gamification: The use of Kahoot

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**Abstract-** The conventional learning method is not engaging and motivating, which renders technology's aid to fulfill the objective of a lesson in the classroom. The assistance that we are looking for this has to be engaging and motivating, which leads to one common trend which captivates the attention of pupils, which are games. Gamification then became the answer to this particular study. Gamification is used as a tool to enhance the pupils' perception and motivation towards learning English. The research will be carried out as a quantitative study based design. The study uses the lens positivist as a basis for reviewing and analyzing the data in the study because the lenses provide a more objective view and concrete. This paradigm is helping researchers develop a more robust understanding of the variables that were examined in this study. The researcher has chosen a survey method using a questionnaire as an instrument in which the instruments used to include all the variables involved in the objectives and research questions.

**Index Terms-** Gamification, Kahoot, Perception, Motivation

## I. INTRODUCTION

The development of education is often associated with the change of generations. Through the age changes the existence of differences in educational strategies. This can be seen in today's students who are called generation-Z or Gen-Z, who was born in the mid-1990s to 2010. According to Posnick-Goodwin (2010), Gen-Z is based on the digital-native, always motivated to try something new, like learning in a creative, interactive, fun and think outside the box in line with technological developments. Shatto and Erwin (2016) state that Gen-Z is different from previous generations because of changes in media consumption patterns. The study should now be focused on enhancing the technical skills precisely, new ways of thinking, different learning environments and require new approaches to education (Ding, Guan, & Yu, 2017; Veluchamy, Roy & Krishnan, 2017). One method that is appropriate to the nature of learning in the 21st century is through gamification of game-based learning (Smith & Cawthon, 2017). This chapter reviews the relevant theories and puts forth a theoretical framework related to the current study's needs. The review encompasses previous researches and findings that can contribute to the present research extensively.

Gamification is generally applied in marketing strategy to achieve the objective of a more effective, but undoubtedly the gamification approach also has great potential in the field of education (Lee & Hammer, 2011). This is because gamification can give space to more innovative and flexible (Hsin-Yuan fighting and Soman, 2013). However, its implementation in the field of education is still not public, and indirectly not many empirical statements about the effectiveness of student learning are made (Ong, Derek, et al., 2013). Therefore, this chapter will describe the concept of gamification and its implementation, as well as the challenges faced in the field of education.

Gamification and game-based learning are often used in the process of learning in the 21st century. Both have the same approach in implementing a culture of innovation in teaching that is capable of making the teaching and learning process become more interactive, and improving the quality of education. Teaching and learning process should apply the approach in line with current technology, thus taking the focus method gamification in education give new impetus can be gainfully used between educators and students. Gamification can also be used as an alternative or as a complement to the teaching methods to achieve the goal of teaching or education (Cankaya & Karamate, 2009). Statistical reports in the United Kingdom through 2014 Global Gaming Stat said 74% of teachers K-8 using games digitally to promote learning, and 33% use the game to assess the knowledge level of students' skills, while 29% reported conducting a formative evaluation of the skills and knowledge among students. Through these statistics as well, not just teachers who use games to educate young people have even 56% of parents say that the game used for this study have a positive impact on their children. According to Deterding, Sebastian et al. (2011), gamification is defined as the use of a game that has elements of design in the context of non-game. In the context of education, gamification is an approach that uses aspects of the game to motivate the practitioners so that teaching can be integrated into the form of sets (Hussain, Tan & Idris, 2014). The approach of using games in teaching and learning process is to make the learning process more exciting and interactive, in addition to making the activities less formal and severe (Cugelman, 2013). The primary purpose of gamification is to motivate students and stimulate interest (Kiili, Ketamo & Kickmeier-rust, 2014), creating an exciting experience to players (Schell, 2014) and to promote the learning and problem solving (McGrath, Naomi & Bayerlein, 2013) and build skills through each stage of the game (Dicheva, Dichev, Agre, & Angelova, 2015). The gamification process is a process that

makes a game that can encourage the participation and involvement of students in learning. Bunchball (2010) has divided the game elements into two components: game mechanics and game dynamics.

## II. LITERATURE REVIEW

### **Applying Gamification**

Game mechanics can be defined as a framework for how a game is played (Cheng, Yuh-Ming, et al., 2013), has a range of actions, behavior, mechanisms of control in the game by using a points system, the level of difficulty, challenges, leader boards, and gifts and dynamic game refers to actions that affect the players through the game (Bunchball, 2010). In short, the mechanics are the agents, objects, elements, and relationships in the game; basically, the rules of the game and dynamic behavior are emerging from the game when they use a mechanic. Referring to elements of the game, gamification involves aspects of game design mechanics. It uses features such as points system, a badge of achievement, the degree of difficulty, challenges, leader boards, and quests. Through a dynamic game, it includes features such as rewards, status, performance, the expression of self-expression, and competition. Using game mechanics, the educational practice can be transitioned traditional learning such as lectures to more interactive activities and interesting (Farber, 2015).

Although the concept of gamification is easily seen, educators need to consider the construction and the gamification approach that will be given to students. Therefore, Hsin-Yuan Huang and Soman (2013) have drawn up measures to apply gamification in education gamification, as shown in Figure 1. The five basic processes of building gamification of knowledge can help educators to implement effective and achieve the PDP with different educational objectives. If the aim is precise, the entire learning program can be divided into the following levels (the level of) that will facilitate the process of content analysis. Next, the control and monitoring mechanisms should be identified to provide feedback on student progress and mastery. Running the trial process can help educators to determine whether objectives are achieved or not. The accuracy and effectiveness of gamification are used on the thoroughness of the implementation of these measures (Hsin-Yuan Huang and Soman, 2013).

Before developing or using gamification of learning, application developer or educator needs to identify who the target users who will use it. The critical element in a study program is to understand the students (McGrath & Bayerlein, 2013). Through the analysis of target users, a factor that can be identified in terms of age group, learning ability, skills, and another current. Also, other factors that can be considered is the last program run, learning locations, as well as the number of users (Hsin-Yuan Huang and Soman, 2013).

### **Identifying learning objectives**

This process involves the question of what educators want when students complete a program of study. Each program is developed to have clear objectives so that learning goals can be achieved at the end of the plan (Cugelman, 2013). This objective is divided into three which are the goals of teaching the public to ensure student work or project, the purpose of training specific to enable students to understand the concept, attempt to make the assignment after training and behavioral goals allow students to concentrate, complete the tasks in fast turnaround time, and minimize disruption in the classroom.

### **Structuring experiences**

After learning objectives have been identified, educators should be sensitive to the development of application modules according to students' needs. According to Hsin-Yuan Huang and Soman (2013), through careful planning, students should be spending time learning and completing assignments within the predefined milestones. For example, students should understand the basic program before entering the middle. Therefore, students who lack motivation or lack of skills and knowledge will be facing a challenging experience in completing the foundation program. In this context, students should be exposed to the concept of push, where educators must find alternatives to encourage them to overcome obstacles through their experience (Hsin-Yuan Huang and Soman, 2013). Wilson, Calonge, and Henderson (2016) suggested that the concept of gamification is to be implemented in the classroom with students in detail. This method can help teachers identify their students' ability levels.

### **Identifying resources**

The ability of educators to consider the resources that will be adopted in the process of gamification is essential. Among the things to the point of emphasis by educators, before use gamification as a way of learning is to identify mechanisms that can help educators to track student achievement, the kind of game that fits with the target group and whether the reward is on offer to students being able to complete each level of the game learning (Lim, 2015). For example, if educators want to apply mathematics to 5 years in gamification, educators need to know how to attract students. Will it be a point system, competition, or similar? Is it possible to process student data and automatically track their progress and be able to generate reports on the development of students? Among gamification tools on the web that can be used for free is kahoot.com, quizz.com, quizlet.com, cram.com, classdojo.com, and many others. In the case of the current study, 'Kahoot' will be the main focus.

### **Employing the gamification element**

Gamification elements will make it easier for educators to evaluate and see the eventual achievement of students. These elements are divided into two aspects: the self and the social part where the item can make students more focused on competing with themselves and

recognizing the achievements themselves. In contrast, the social element places students in a community that allows scores and student achievement seen by other students.

### **'Kahoot': A Review of Past Studies**

According to Wang and Lieberoth (2016), 'Kahoot' is a web tool for creating quizzes and surveys in an exciting discussion. In education, 'Kahoot' we can use in our classes to make our learning more exciting and fun. Plump and LaRosa (2017) stated that 'Kahoot' provides a suitable learning situation to combine research-based learning and games. Besides, 'Kahoot' in learning also helps teachers to gather informal feedback from students, evaluate student understanding, and create a poll on matters related to the knowledge that takes place in the classroom. In terms of creativity, 'Kahoot' allows students to answer questions and create their questions. The strengths possessed by 'Kahoot' among others on the web tool will enable teachers to create quizzes, discussions, and surveys by incorporating various elements such as video, images, or text (Ismail & Mohammad, 2017). Then students can access by using a variety of different devices such as smartphones, tablets, laptops, and other devices with ease. Teachers can also add a time limit to answer the quiz or survey that was given to not only correct answers are needed, but the timeliness also is the main point in response to a questionnaire or review provided by the teacher. 'Kahoot' was designed to have access to learning in a traditional classroom or distance learning. 'Kahoot' was designed for social learning, and the learner is required to accumulate on a screen. The display can be 'SmartScreen,' interactive whiteboard or computer screen. Even some users play it using 'skype' and via 'google hangouts.' 'Kahoot' can be used by anyone, for any material and learners at any age. 'Kahoot' has followed a policy of "bring your own devices" that can be used in mobile phones, desktop, or laptop with a recourse browser. 'Kahoot' is adapting the "formative assessment" to monitor the progress of each student in achieving the learning objectives and can find out where the strengths and weaknesses of each student in the learning objectives represented on each quiz question. It also provides more challenging learning and developing a basic knowledge of students in education. Evaluation can be immediately known and displayed readily and practically because it is paperless. 'Kahoot' is divided into three types: (1) Quiz or Game, (2) Discussion, (3) Survey. This paper explicitly discusses 'Kahoot's game modes and how learners perceive it. 'Kahoot' game has two-player mode and a mode that creator mode. Mode creator is used to creating a quiz/questions and answers, determine the length of time each answer and launching games. Player mode used by the players (students) to join the game by entering a PIN and your username. One game or quiz is represented with 1 PIN.

When the quiz is created, and 'Kahoot' has been launched, it will automatically be given a unique PIN by the system. If the browser has been opened (students) as the player will enter the web <http://getkahoot.com> and input the unique PIN that has been shared by the teacher, then enter the name of the player before taken to the screen to start the quiz competition. When the entire name players have already appeared on the screen, the teacher presses "START" to launch the quiz. A game of multiple-choice questions will be displayed in the four possible answers, and each answer button can be represented in 4 different shapes and colors on each student device screen. Students must press one button to be true. This game is designed for players (students) to have a focus and attention to the home screen to see the questions and then screen them to determine the answering device. It can build social interaction between teachers and students. There are many benefits to 'Kahoot' that can help improve the learning process for students at all academic levels. In particular, gamification did with the intent to allow students to experience and overcome the challenges of intellectual education (Ong, Chan & Koh, 2013). 'Kahoot' involves a range of emotions, from curiosity, confused, disappointed, so happy when completed the game successfully (Pramana, 2016). The learning approach through 'Kahoot' also encourages students always to seek knowledge to satisfy their curiosity and to satisfy themselves (Smith-Robbins, 2010). Cankaya and Kuzu (2010) also emphasizes that students prefer to learn by playing and having fun. Playing allows them to make mistakes again and again; in other words, they will learn through the experience of mistakes without feeling the pressure. Thus, it is seen as one way to learn to fail repeatedly. By using 'Kahoot,' students will learn to view failure as an opportunity to continue to succeed, rather than a reason to keep despair (McGrath & Bayerlein, 2013).

According to Rose (2015), in a study related to gamification through online quiz education application, 'Kahoot' shows that the physio game technique was associated with a significant motivation and student involvement in learning. This is because students are more easily interact with the medium more interactive than formal communication is often done in the classroom. Learning content distributed online to be easily understood and accessed repeatedly without getting bored. A bit of motivation for physics will be improved to a better level. Hussain, Tan, and Idris (2014) reported that gamification is an effective method to increase student motivation and learning performance. This opinion is in line with McGrath, Bayerlein, Ong, Chan, and Koh (2013), in which the students will be more inclined to like unstructured gamification learning to show a higher motivation. The development level or progression levels is the level of skills and knowledge based on the scale of the control of the players. For example, from the simple to more difficult levels. This stage of development can be displayed in the form of progress bars, icons, or metaphors (bronze, silver, gold, and platinum).

### III. METHODS

The research will be carried out as a quantitative study based design. The researcher uses the lens positivist as a basis for reviewing and analyzing the data in the study because the lenses provide a more objective view and concrete (Taylor & Medina, 2011). This paradigm is helping researchers develop a more robust understanding of the variables that were examined in this study. The researcher has chosen a survey method using a questionnaire as an instrument in which the tools used to include all the variables involved in the

objectives and research questions. According to Creswell and Creswell (2017), a questionnaire is an instrument that not only saves costs but also makes the collection more systematic response and easy for researchers. Data were collected through surveys that were often more manageable for analysis and received to help researchers examine the relationship between variables in the study.

The research methodology chosen by the researchers includes the survey design that is closely related to how researchers can answer every question with a specific study. Creswell and Creswell, (2017) see the methodology as a systematic procedure to obtain the data and analyze data to explore all possibilities within the context of answering the research questions. Therefore, the methods chosen strictly adheres to the two core research questions that are tied to the research objectives. The study uses the quantitative research design to explore Students' Perceptions on Gamification: The Use of Kahoot. They use two guiding questions, which are Research Question One: What are the students' perceptions of gamification? And Research Question Two: What are the students' responses to the use of 'Kahoot'?

### Sampling Procedures

The study's sample played a significant role in the context of quantitative studies. It provides essential data for the samples to researchers to study the various hypotheses and premises prefix set by the researchers. Sampling in this study includes the selection method among the respondents in the broader population. Given the people of the survey comprises teachers, the sampling techniques need to look at some of the essential criteria related to the scope of the study. This study will utilize purposive sampling as its core sampling technique. According to Etikan, Musa, and Alkassim,(2016), purposive sampling is done after the researchers know that the population may be able to meet its goals. Sampling in this way allows the researcher to choose individual informants to facilitate the development of a theory which formed. Etikan, Musa, and Alkassim (2016) give four factors, namely the importance of purposive sampling:

Can represent, or example (typicality) on the grounds, individual, and activities selected.

It can be accounted for heterogeneity, a population, or maximum variation.

The selection of the sample that had been intended to examine the case studies.

May establish specific comparisons to explain the reasons for the difference between the background and the individual.

Next, O'Mahony, M. (2017) says that the sample (informants) capable of generating such data for a study because it takes into account the background or "setting" as appropriate. Krejcie and Daryle (2015) describe the sampling intended as "criterion-based sampling," which means researchers should develop criteria, principles, or standards (standard) to the units surveyed.

The researchers used the guide by Krejcie and Morgan (in Krejcie & Daryle,2015) to perform sampling studies because the guide offers a systematic guide for the selection of the number of samples based on population studies. Figure 3.1 shows the correct amount of samples based on the total population that is appropriate and under a specific ratio. This research will be conducted within the district of Bagan Datuk, which was previously part of the larger Hilir Perak district, where all schools are under the management of the new Bagan Datuk District Education Office. Both Figure 3.2 and 3.3 show the map, which depicts the new district of Bagan Datuk. The red shade shows the region of Bagan Datuk. This area was originally part of the Hilir Perak district based in Teluk Intan. In January 2016, the community Bagan Datuk created. This small area was gazetted by Perak's state government as a full district on 15 July the same year. At a meeting of the Perak State Executive Council on 22 November, it was decided the community spelled Bagan Datuk, starting on the day the declaration of this area on 9 January 2017. A proclamation ceremony was held at Sekolah Menengah Sains Bagan Datuk on 9 January 2017. It was enhanced by the Sultan of Perak, Sultan Nazrin Shah Muizzuddin, son of the late Sultan Azlan Shah Al-Maghfurlah. Also present was then, Deputy Prime Minister of Malaysia, Dato' Seri Ahmad Zahid Hamidi, who is also the Member of Parliament for Bagan Datoh and Perak Menteri Besar, Dato' Seri Zambry Bin Abdul Kadir Royal. Managing the local government still managed Teluk Intan Municipal Council (Hassan,2017).



Figure 1: Shaded Region depicting District of Bagan Datuk (image courtesy of Bagan Datuk District Office Website)



Figure 2: District of Bagan Datuk (image courtesy of Astro Awani)

A total of 67 schools fall under the jurisdiction of the Bagan Datuk District Education Officer, and The researcher decided to conduct a study on the Tamil national type schools under the management of the Bagan Datuk District Education Office. Three national type Tamil schools have been selected to conduct this study. The total population of the schools was a total of 40 teachers. The researchers refer to sampling standards by Krejcie and Morgan (1970) in figure 3.4 and select 136 respondents as the number of samples for this study. Out of the three schools, two schools are categorized as low-enrolment schools and have fewer than ten teachers per school. The purposive sampling allows the researcher to select eight teachers from each low-enrolment school and 26 more teachers from the remaining school. The teachers who are chosen for this study are teachers who teach various subjects and have attended at least one workshop related to the use of technology and media in the classroom.

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	100000	384

Figure 3: Krejcie and Morgan(1970) Sampling Ratio

**Research Instrument**

According to Taylor and Medina (2011), the use of the questionnaire is a data collection tool that gives researchers a more objective perspective in line with the positivist methodology, which forms the basis of the current study. McMillan and Schumacher (2010) state that the use of the questionnaire is a method of data collection that provides more reliable data and shaped to strengthen the empirical data. The construction of the survey for this study involved a detailed review of the various questionnaires available to assess how technology and media, such as games and applications, are used at school. The construction of the poll covers how each item is designed to meet each objective and motive of the study. Questions from the previous survey studied thoroughly before adapted to meet the needs of the questionnaire. In general, the inquiry is an adaptation of the survey instrument used by Bicen and Kocakoyun,(2018) in their study 'Perceptions of Students for Gamification Approach: Kahoot as a Case Study'. The questionnaire contains four sections, and Section A is the demography section to analyze the background of the respondents where there are five items. The goal is to learn more about the composition of respondents who responded to the survey questionnaire. Section B is known as the General Perception section, which consists of 32 items. Section C is for the Effectiveness of the Use of 'Kahoot,' which contains

23 items, and lastly, section D, which evaluates the 'Kahoot Environment,' has ten items. Students also evaluate three dimensions by using a 5-point Likert-type scale (completely agree, agree, indecisive, disagree, and completely disagree). An answer of "Completely agree" by the student

No.	Section	Analysis
1.	Section A: Demography	Descriptives
2.	Section B: General Perception	Descriptives
3.	Section C: Effectiveness of the Use of 'Kahoot'	Descriptives
4.	Section D: Kahoot Environment'	Descriptives

is associated score of 5

**Reliability**

**and Validity**

To identify the reliability and validity of the questionnaire was built, a pilot study was conducted, with ten respondents selected. At the same time, the Cronbach Alpha test was performed. The test is crucial for showing the relationship between variables and showing the consistency of each item in an instrument. The researcher used to scale by McMillan and Schumacher (2010), who said that  $0.9 \leq \alpha$  is the most suitable, while  $0.8 \leq \alpha < 0.9$  and  $0.7 \leq \alpha < 0.8$  is a value that is still acceptable. Alpha is a test that shows the consistency of the items in the questionnaire. The costs were determined using the guidelines McMillan and Schumacher (2010) to demonstrate the power of measurement is shown in Table 3.1 below.

**Data Collection Procedures**

Each study requires a systematic procedure for collecting data in this research and ensuring every step should be implemented to better data collection. The researchers started the process to obtain specific permission from the party. Researchers seek approval from the planning and review of the State Education Department. This approval is essential to demonstrate the study's validity and to ensure that this study has obtained permission to use the sample. It is closely linked to the validity of the study because it shows that respondents took part in the survey questionnaire has been implemented. Permission was obtained from the study of Educational Planning and Research Division (EPRD) and the Planning and Review of Education in the State Department of Education of Perak, where the relevant forms filled in and delivered since production proposal further study. The truth has allowed researchers to access all pertinent schools of the country and get a sample that matches since the start of the survey again. Next, the researchers also obtained permission from the administrators in the Tamil national type schools to use in each school teachers as respondents.

**Data Analysis**

The researchers use a variety of analytical methods for analyzing the data collected through questionnaires. Schabenberger and Gotway (2017) required the appropriate analytical techniques in the study of quantitative methods of analysis for determining the extent of continuity of the data collected by the survey. Thus, the process of data analysis for this study was determined based on the research questions. Table 3.2 below shows the breakdown of each part of the questionnaire.

IV. RESULTS AND FINDINGS

**Student perceptions of the gamification method**

The responses given by students to questions about gamification are shown in Table 2. When a gamification method was used in the lessons together with the Kahoot application, the students answered "completely agree" to all the questions. Examination of the data showed that the inclusion of a gamification method increased students' interest in the classroom, and students studied more to become successful through the gamification method. Besides, competition in the school was found to improve student motivation and communication to become more successful in the classroom. Employing gamification methods in other classes was thought to be of likely benefit, and using a gamification method on a smartphone made the students feel better. The reward structure was thought to be motivating, and students improved themselves through gamification in areas that they feel deficient in by observing their achievement status using a blended learning method enabled the students.

Table 1. Student Perceptions on Gamification Methods

NO	ITEM	Strongly Agree	Agree	Disagree
1	Gamification method increases my interest in the lesson	38	2	
2	Students want to be more successful through gamification method	36	2	2
3	Students compete with motivation using gamification method	37	3	
4	Students communicate more through gamification method	34	6	
5	Students prefer gamification method in other lessons	39	1	
6	Gamification methods are fun	40		
7	Group work in gamification foster collaboration	35	5	
8	Gamification improves students self-confidence	33	7	

To understand the lesson better and students felt that the gamification method was fun. Students thought that each question they correctly answered improved their self-confidence and helped them to become more ambitious for success. The process increased the level of classroom competition. The students perceive that the application could be equally successfully utilized in other lessons and that creating a competitive environment had the effect of increasing their interest in the experience. The degree of motivation was thought to be higher in crowded classes. The gamification method was felt to identify areas of the deficiency by collecting different data from individuals during group activities. Many researchers have found that gamification will be accustomed to an effect on the motivation and behaviors of people} it's been shown that individuals target one topic at intervals the assigned amount for the sport. A gamified competitive learning environment will increase student motivation. Research on gamification has been demonstrated that gamification will be a helpful and memorable tool that motivates and encourages learning and helps solve issues in totally different fields and communicate with different teams. Gamification renders education more pleasant by strengthening social ties, learning processes, specialization ability, ambition to achieve success within the competitive environments, competition, and enthusiasm of changing standing, whereas motivating students to resolve issues and partake in academic activities. It has also been shown that gamification will play a notable technological role in changing human behavior. In this study, students declared that the gamification technique rendered them formidable and consequently enlarged the level of classroom competition. Gamification can be used as an applicable technique for changing human behavior.

**Students Response**

Table 2. Students Response to the Kahoot Application

NO	ITEM	Strongly Agree	Agree	Disagree
1	Learning English is excellent.	35	5	
2	I enjoy learning English using games such as Quizizz.	36	4	
3	I would rather spend more time in my English class and less on other courses.	38	2	
4	I enjoy this kind of game-based activities than those of my other classes.	37	3	
5	I think my English class with games are boring.	36	4	
6	I plan to learn as much English as possible using this Quizizz.	38	2	
7	I like being placed in competition with other students in the classroom via a game-based method increases my motivation	35	5	
8	I like my English class so much, and I look forward to studying more English in the future.	38	2	

Participants had positive enthusiasm toward the Kahoot! Game in the classroom, and they also showed their satisfaction with the making and or creating their own game on Kahoot!. They claimed that this game would be useful not only to review the materials that they will present later in the classroom but also will create a fun and interactive atmosphere. This is reflected by the enthusiasm of the participants shown throughout the quiz. The intrinsic motivation that they experienced during the modeling was enhanced by the desire to win. Thus, as educators, they can use this to enhance the learning activities within the classroom and especially with the modern learners that they are facing. Again, this is shown by 100% of the participants present at the time of the workshop, declaring that they will use the application in their learning environment.

**V. CONCLUSION**

In this chapter, a discussion involving the research questions and data analyzed in the previous section is made concerning the more abstract progress in education of the newer generation. This is to create a deeper understanding of how teaching and learning continue to transform alongside the generation-Z to create learning more comprehensive. The future recommendations that are needed to make this study more feasible for a larger population are also discussed. The limitations of the study are addressed to create a more solid argument in coming researches related to the use of Kahoot or any other teaching and learning application that will cater to the improvement of education in Malaysia especially.

In general, this relates very closely to the digital-native characteristics based on Posnick-Goodwin (2010). They have a deeper understanding and perception towards the development of technology and how it can aid them in various aspects of learning. The findings point out that using the application increases their motivation or makes them more interested in what is being taught to them. The significant potential of gamification in education is that it attracts the newer generation with more unique characteristics (Lee & Hammer, 2011). These characteristics could refer to the competitiveness and interactiveness created by the use of the Kahoot application. This is again proven in the study because 39% agree that they perceive gamification as a tool that increases their motivation through competition in the classroom, while 38.2% also agree. This is the advantage of the idea of gamification in

education itself rather than the application because Kahoot, like many other games, even board games, is all tools that create the concept of learning while playing.

As stressed by Sebastian et al. (2011), gamification is a technique that integrates the aspects of play, stimulating and motivating learners and allowing the teachers to structure learning environments that are more challenging and effective at the same time. Despite the positive outlook, the students still have doubts about the relationship between the use of the application and educational successes because 48.5% are unsure about the perception that their study is more successful via gamification methods. However, 47.8% have agreed that it does create success in education. The focus here is on the indecisiveness that students still have towards the application of their learning and educational successes. This major unsureness is caused by the inconsistencies of the assessments done by educators as well as the education system (Veluchamy, Roy & Krishnan, 2017). The lack of coherence between what is taught and what is evaluated and assessed could lead to an increased rate of distrust among the students and cause students to be more unsure about the effectiveness of the pedagogical approaches. The point that makes gamification more acceptable by today's generation of learners is how it connects the world (Hussain, Tan & Idris, 2014). It is reflected in the findings where 53.7% perceive that communication is more successful via gamification methods. Another 46.3% completely agree to this. Kahoot by itself offers very interactive ways to learners, which allows them to communicate with their friends from the next classroom, friends from a different school, or even friends from different countries. Medina and Hurtado (2017) found similar patterns of responses because students were keener on the communication that happened, for example, when scores are projected and shared. This is also related to the finding where 46.3% agree to want gamification methods in other lessons, which sum up how much the Kahoot application has impacted learners' general perceptions.

A surprising finding in the study is that 28.7% disagreed that the gamification method allows them to see their achievement status and improve in the areas that they are weak, and 53.7% are indecisive on this perception. In comparison, only 17.6% agree that this perception is acceptable. This is very much related to the fact that teachers only use it as tools for entertainment in the classroom or as a game for breaks during long boring lessons. Muhridza, Rosli, Sirri, and Samad (2018) found that most teachers utilized games and tools like Kahoot for purposes to grasp the students' interest when they are drifting apart in the classroom. Drawing on the proposed process of gamification by Hsin-Yuan Huang and Soman (2013), the use of applications for games in the school has to have clear objectives and project a severe intent. Still, students cannot see them as tools that will help them achieve better in studies when these processes of applying gamification are not thoroughly followed. The core purpose of any application for gamification in the classroom is to ensure that learning is more interesting; thus, increasing its effectiveness over time (Cugelman, 2013). The findings indicated that 79.4% agree that lessons performed with Kahoot enable continual learning compared to learning memory in traditional classroom environments. This finding is crucial as it projects the functionality of the application and its right features for better or more effective learning. The 'Kahoot' application is meant for recreating learning in a classroom by integrating social learning as a core aspect. This social learning element is the basis of the application and in gamification in theory. It will create a consolidation of learning among learners even as they utilize various mediums like 'skype' and 'google hangouts' and other platforms (Wilson, Calonge & Henderson, 2016).

This is also related to 40.4% who agree that Kahoot allows students to deliver more valuable content. As suggested by Piaget in Zicherman and Linder (2010), the cognitive stages of development propose the sensor-motor, pre-operation, concrete and formal stages, which are crucial in learning. This is because it involves learning using five primary senses. This is important because the Kahoot application does precisely that. It provides rich content that allows learners to grasp the content in different ways. Dervan (2014) stated this feature of the app enhances learning efficiency by providing more ways to understand a topic discussed. Understanding the 'Kahoot' environment is critical in the current study because it encompasses many aspects of the entire concept of gamification and how the features of the application take the idea to create effective teaching and learning. The purpose of games in the classroom as old as it has now been revived with the touch of technology, which according to Cheng et al. (2013), is a combination of putting actions and behaviors into graphics that will create a sense of competitiveness. The 'Kahoot' environment itself is the incorporation of game mechanics, which include the points system, the level of difficulty, challenges, leader boards, and gifts. It creates the effect of being at the field and gives players the authority to craft the learning on their own progressively and independently (Buncball, 2010). The findings pointed out specific details that have made the application more preferable for teaching and learning. It also helps to understand how the respondents view a constructive gaming environment for better knowledge. The study is expected to create some implications in different areas and thus create various effects on various groups of people. In the education sector, any change in terms of pedagogy, especially when it is about the usage of teaching aids such as the application discussed in the study, there will be implications in two significant areas.

Most school administrators will have to be ready to accept the technology wave in education. When it comes to 'Kahoot' in training and the classroom, administrators must be aware of its implications in transforming assessment strategies as well as learning as a whole. When it comes to learning, according to Ismaimuza (2013), the use of Kahoot will change teachers' roles; thus, school administrators must also change what they look for when they observe lessons. Most administrators look for common traits in the classroom, such as teachers who give more instructions or more homework. In this transformation towards the 21st-century education, administrators must know that teachers are more than mere projectors of content, but active facilitators who facilitate knowledge



construction (Gobena,2017). School headmasters must realize that the use of Kahoot will also transform the outlook of a traditional classroom, and it will create a more integrated environment both for teaching and learning. Firstly, teachers who are involved in this study will be implicated in a way that their awareness of Kahoot and its benefits to their students would be increased. Next, this will connect a deeper understanding of their roles as facilitators and guides actively involved in constructing virtual spaces that will help students build knowledge. Curran and Standage (2017) put forth that the use of technology does not only change the traditional role of a teacher but also transforms the entire student-teacher relationship in the classroom which will bring two-way communication and create more collaborative learning rather than one-way communication and learning which was a practice of the old class. Teachers need to guide each other through professional learning communities to develop a more in-depth understanding of Kahoot and its features and uses. This will help tackle the issues indicated in the findings of this study, especially in moderating the application when it comes to creating activities.

One significant suggestion for future research would be to increase the number of respondents to expand the sample to consolidate the data. This is important to allow the findings to be more comprehensive. It will be more appropriate to help the ministry decide if Kahoot use should be widespread across all schools in Malaysia. On the other hand, in terms of methodology, future studies should be conducted as mixed-method studies, which will combine qualitative and quantitative data collection methods. This way, interviews would provide valuable input and allow the researcher to understand the in-depth emotions and attitudes involved in the use of applications like Kahoot for teaching and learning. A semi-structured interview and critical analysis would be appropriate to gather robust data about behavioral changes brought about the use of such applications in teaching and learning. This would expand the study to contribute more significantly to the fields of technology in education and other related areas simultaneously.

Conclusively, the study has managed to pinpoint the general perceptions that students have towards the Kahoot application and its usage in the classroom. It has also led to understanding usage attitudes and behaviors towards the use of those applications in education. The research has opened up the field of study here in Malaysia and given more room for more improvements for future studies in the areas of understanding perceptions of use and the understanding Kahoot itself. The study has combined the features of Kahoot and opinions to know how effective it may be in the classroom and emphasized the roles that educators would play in creating a 21st-century learning environment.

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#### APPENDIX

Appendixes, if needed, appear before the acknowledgment.

#### ACKNOWLEDGMENT

The preferred spelling of the word “acknowledgment” in American English is without an “e” after the “g.” Use the singular heading even if you have many acknowledgments.