STUDENTS' PERCEPTION OF GAMIFIED ONLINE QUIZZES AND ITS IMPACT ON THEIR CLASSROOM ENGAGEMENT

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Abstract

Gamification has been very popular in educational field. As a consequence, there were many researchers interested to conduct a study on it. In order to give contribution for enriching the resources for such study, this research investigated students' view toward the use of gamified online quizzes given by the teacher outside the classroom, as well as to examine the impact on students' engagement in the classroom. The method used was qualitative, with questionnaires and interview as the instruments. The participants were 69 twelfth graders students of three classes who filled the questionnaires, as 9 students among them were interviewed as the representatives. Results showed that students perceived experience in using gamified online quizzes was positive. They recognized such quizzes as interactive and useful for their learning. Moreover, they were found to be engaged in using the gamified online quizzes. They showed their engagement in behavior, emotion, cognitive, and agentic.

Keywords: *gamification, online quizzes, students' perception, students' engagement*

Sari

Gamifikasi sudah menjadi hal yang sangat popular dalam bidang Pendidikan. Sebagai konsekuensinya, banyak peneliti yang tertarik mengadakan kajian tentang hal tersebut. Untuk berkontribusi dalam memperkaya sumber data untuk kajian serupa, penelitian ini ditujukan untuk menyelidiki pandangan siswa dalam penggunaan kuis online berbentuk permainan yang diberikan oleh guru di luar kelas, sekaligus meneliti dampaknya pada keterikatan siswa di dalam kelas. Metode yang digunakan adalah kualitatif, dengan kuisioner and wawancara sebagai alat penelitian. Peserta penelitian terdiri dari 69 siswa kelas 12 sebanyak 3 kelas yang mengisi kuisioner, dengan 9 siswa yang diwawancarai sebagai perwakilan. Hasil menunjukkan bahwa siswa merasakan pengalaman yang

positif saat menggunakan kuis online berbentuk permainan. Mereka menganggap kuis tersebut menarik dan berguna untuk kelangsungan proses belajar mereka. Selain itu, siswa juga terikat penuh dalam menggunakan kuis tersebut. Mereka menunjukkan keterikatan secara perilaku, emosional, kognitif, dan agentik.

Introduction

In recent years, the term Gamification has been a famous trend in educational field. Gamification is defined as a procedure to put game elements into non-game circumstances (Campbell, 2016). It aims to transfer and to adapt the elements of game into the real-world condition without neglecting the reality. In educational field, gamification is considered as a method to have a game played in the classroom setting without any intention to threaten or to risk the nature of a curriculum (Nolan & McBride, 2014). Gamification has a potential to make the learning process to be more entertaining so that it increases students' motivation to study (Muntean, 2011). Moreover, the availability of scores and rankings as the instant feedback giving in gamification can lead to students' engagement in the learning process as and motivates students to reach the targets (Glover, 2013). Gamification is also beneficial for teachers as it provides a chance to track students' learning achievement and triggers a transparent assessment (Lee & Hammer, 2011).

As gamified online quizzes provide the instant feedback processing, it helps the teachers to conduct a formative assessment related to students' engagement in the classroom (Delacruz, 2011). It is also explained that during the gamification process, monitoring and assessing successful learning is likely to happen (Hassan et al., 2021). Similarly, the use of gamified online quizzes allows the teachers to gather initial information of each student's learning progress so that it would be a possible option for assessing students' engagement in the classroom (Huang & Hew, 2018). Furthermore, Shute (2011) also mentioned that gamification allows the teachers to observe not only students'

achievement but also students' emotion and behavior, which are parts of learning engagement. Students' learning engagement mentioned refers to a condition in which students actively involved in teaching and learning process (Christenson et al., 2012).

In regards to students' engagement in the classroom, there have been several research conducted to investigate such concept. For instance, Huang et al (2019) investigated two types of engagement namely behavioral and cognitive. Meanwhile as a more complete version, Reeve and Tseng (2011) proposed four types of learning engagement namely behavioral, emotional, cognitive, and agentic. Skinner, Kindermann, and Furrer (2009) stated that *behavioral engagement* refers to students' involvement in the learning activity in relation to awareness, endeavor, and persistence. It means that students' involvement in the classroom can be seen from their attitudes or behaviors. Moreover, they also explained that *emotional engagement* refers to the existence of positive emotions such as interest and enjoyment during the learning activity, and to the absence of negative emotions such as anxiety (Skinner et al., 2009; Watt, 2004). When students seem to be not interested in the classroom, it means that they are not emotionally engaged in the learning process. The third engagement namely *cognitive engagement* refers to students' personal investment in learning activities such as self-regulation and the use of learning strategies (Walker et al., 2006). Lastly, *agentic engagement* is the fourth and newly proposed aspect of students' engagement. It is a combination of action and behavior which refers to student's constructive contribution into what they have received; it is their acts of asking questions, expressing preferences, and telling the teacher what they need in order to create a more supportive learning environment for themselves (Reeve, 2013; Reeve & Shin, 2020; Reeve & Tseng, 2011).

There have been several previous research concerning the use of gamified online quizzes done in various field all over the globe (Andreani & Ying, 2019; Campillo-Ferrer et al., 2020; Göksün & Gürsoy, 2019; Lin et al., 2020; Poondej & Lerdpornkulrat, 2020; Roosta et al., 2016; Sanchez et al., 2020; Zainuddin et al., 2020). A study by Göksün & Gürsoy (2019) investigated the gamification activities that are used as a formative assessment tool based on academic achievement and student engagement in learning environments of science education in Turkey. The study was

done quantitatively by having three research groups that were two experimental groups in which Kahoot and Quizizz were implemented and a control group where conventional instruction was implemented. Similarly, Sanchez et al (2020) also conducted a research exploring the benefit of gamification on student learning. It involved 473 students of psychology department. Findings showed that students who completed more quizzes performed better on subsequent tests and had better scores.

Another study conducted by Zainuddin et al (2020) was to investigate the differences in learners' performance and perceived engagement between three intervention groups in a Science class, using mixed method design by involving two types of pedagogical intervention: traditional instruction with paper-based quizzes and gamified instruction with gamified e-quizzes as formative assessments. The results showed that the employment of innovative gamified e-quiz applications and paper-based quizzes were found to be effective in evaluating students' learning performance, particularly as formative assessment after completing each topic. The previous mentioned studies were mostly done using quantitative and mixed method. Moreover, they were not happened in Indonesian EFL contexts. Even though there was a study conducted by Andreani and Ying (2019) that examined the use of a game namely PowPow to support the English vocabulary learning in Indonesian elementary school, this study was done quantitatively and it focused only on students' enhancement on the vocabulary mastery. It did not investigate the aspects of students' engagement in the classroom.

Concerning the previous research aims and findings, more studies on the use of gamified online quizzes and its impact on students' learning engagement in the classroom, especially in Indonesian EFL context is still worth doing. Therefore, this research attempted to fill the gap by conducting such study in Indonesian EFL secondary school, more specifically to investigate the use of gamified online quizzes outside the classroom and students' perceived engagement in the classroom by using qualitative research method. Therefore, this study addressed the following research questions:

1. How do students perceive the experience of using gamified online quizzes outside the classroom?

2. How do students perceive their engagement by the use of gamified online quizzes?

Methods

This research involved 69 students of twelfth grade of Senior High School in Gresik. They have experienced using such gamified online quizzes (quizziz, wordwall) as required by the teacher for about a year. The content of the online quizzes was made based on the instructional materials and objectives that have been taught. In order to address the research questions, qualitative research method was employed. The instruments used were open-ended questionnaires and semi-structured interview. The questionnaires were distributed to all students while the semi-structured interview was conducted to 9 students to represent the total number of the students. Before gathering the data, the participants were asked for their consents to be involved in the study and they were also told that their identity would be kept confidential.

The interviews were conducted online using voice and video call over the application, Whatsapp, as the agreement of both author and the participants of the study. The interviews were conducted in the participants' first language, *Bahasa Indonesia,* to prevent the language barriers existed. The questionnaire items about the usefulness of the gamified online quizzes were mainly adapted from Hilman (2012) and the interview questions about students' perceived engagement were adapted from Reeve & Tseng (2011). The data from questionnaires and interviews were organized, selected, and analyzed in order to meet the results.

Results and Discussion

Students' Perceived Experience in Using Gamified Online Quizzes

Table 4.1. Students' Perceived Experience of Gamified Online Quizzes

No.	Category	Frequency	Percentage
1	Attractiveness	64	93%
2	Usefulness	67	97%

The results from questionnaires showed that 93% students agreed that having gamified online quizzes outside the classroom was pleasant. Some students said that such quizzes could be a stress reliever after having a long day at school. In terms of usefulness, 97% students said that such quizzes were helpful in a sense that it helped them being prepared for the exams and gave them opportunities for recalling the materials given by the teacher. As Student 1 said in the follow up interview, *"By using that quiz, I gain better understanding of what have been explained by my teacher in an attractive way."* (Student 1). It was also explained by another student *"It helps me to review the materials so that they will stick longer in my brain."* (Student 3).

Even though the students had positive experiences in having the gamified online quizzes, there were also obstacles that they might found. The most common problem was the internet connection. *"It is annoying when you are very serious in doing the quiz, then the internet connection troubles suddenly."* (Student 2). Student 1 also explained "*We need to have the best signal since there will be an error happened to the quiz server if the signal is not that strong."* (Student 1). Aside from the issue of internet connection, several students mentioned the issue of duration. They felt that sometimes the quiz duration was too fast so that they had limited time to give the correct answer. Moreover, they also explained that there was no "undo" feature in the quiz so that they could not edit the answer given, as Student 5 mentioned *"Sometimes I am not sure about the answer but the thing is I cannot undo or edit it."* (Student 5).

The experience of having gamified online quizzes outside the classroom was perceived both positive and negative. The positive experiences were in terms of the attractiveness and usefulness brought by the platform. Students enjoyed having the gamified online quizzes since it gave them fun and different experience in understanding the given materials, even acted as a stress reliever. It was also perceived as a helpful tool because it helped the students to be prepared for the class as well as the exams. It was also perceived as a promising tool to recall and to review the previous materials in the classroom.

In terms of the usefulness brought by the gamified online quizzes, results of this study supported the previous research by Sanchez et al., (2020) which found that students who completed the gamified quizzes had significantly better scores on the tests. Similarly, the attractiveness of the gamified online quizzes were previously highlighted by Andreani and Ying (2019) which mentioned that such gamified online quizzes were considered successful in attracting students' interest in learning English.

Students' Perceived Engagement in Using Gamified Online Quizzes

Results from the semi-structured interviews showed that there were four kinds of engagement appeared when students involved in the use of gamified online quizzes. There were behavioral, emotional, cognitive, and agentic engagement. Behavioral engagement refers to the students' involvement seen from their attitudes or behavior. The interview question related to the behavioral engagement was about their attitudes when they did the quiz as well as when they had the feedback giving session from the teacher.

There were various responses from the students such as *"Of course. I listened to the teacher carefully during the feedback giving."* (Student 2). It was also said "I pay attention to the teachers while she gave us the feedback so that I can understand more." (Student 9). They showed that their behavioral engagement formed as an act of listening to the teacher carefully. Meanwhile, student 3 perceived her engagement by asking questions. She said *"I usually ask some questions during the feedback session."* (Student 3). Another form of behavioral engagement also mentioned by student 5 and student 8. *"I tried my best to answer every question in the quiz."* (Student 5). It was also mentioned *"Even though I do not really sure about the answer, I am still working on it."* (Student 8). They showed that the effort for answering the quiz is also a form of behavioral engagement.

The notion of emotional engagement in the use of gamified online quizzes could be highlighted from several students. For instance, student 5 said *"It is always fun to have the quizzes after the teacher gave the materials."* (Student 5). Moreover, it was also said *"I am excited to have the quizzes after lesson."* (Student 2). Furthermore, student 8

mentioned *"Even if the materials are quite hard for me, it is always fun to do the quiz, it is like challenging."* (Student 8). They showed that they were emotionally engaged by expressing their excitement of having the quiz. Another student furtherly said *"When it comes to the end of the quiz, I feel curious about the correct answer"* (Student 3). It expressed the curiosity as her emotional engagement in doing the quiz.

The results of semi-structured interviews also found the notion of cognitive engagement from the students in various form. For instance, student 1 mentioned *"Well, I am able to remember the materials from the quiz."* (Student 1). It was also said *"Through the discussion, we are able to solve the quiz problem."* (Student 6). Furthermore, Student 4 mentioned *"I guess, I am improving my critical thinking skills since the quiz has various type of questions."* (Student 4). They showed that they were cognitively engaged in using the gamified online quizzes since they had their own learning strategies.

Lastly, agentic engagement was also found in the interview process. Agentic engagement is related to student's constructive contribution into what they have received. It can be seen in several forms. For instance, student 6 mentioned *"Sometimes I give suggestion to prevent the quiz to be boring."* (Student 6). Moreover, it was also said *"I expressed my feeling about what I liked and disliked from the quiz."* (Student 4). Furthermore, student 8 explained *"After the feedback given, I usually say what I need in order to improve my learning progress."* (Student 8). They showed that their agentic engagement formed in a way they told the teacher what they need for better learning experience.

The interview results showed that students' perceived engagement in using such gamified online quizzes formed in four aspects of engagement proposed by Reeve and Tseng (2011) namely behavioral, emotional, cognitive, and agentic engagement. They showed their behavioral engagement by their efforts in doing the quizzes as well as their participation in the feedback giving session. Moreover, their emotional engagement could be seen from their excitement and curiosity of having the gamified online quizzes. Furthermore, the cognitive engagement could be seen from the way the students formed their own learning strategy as well as their recognition of their responsibility of their

learning. Lastly, agentic engagement was also found when they were constructively giving opinion for making a better learning environment. The results were contributively supported the previous finding by Zainuddin et al., (2020) who found that applying games in the classroom could be a promising tool to engage their students in learning process.

Conclusion & recommendation

This current study revealed that EFL secondary school students perceived the experiences of using gamified online quizzes positively. They perceived such quizzes as new, fun, and interesting way of gaining better understanding of class materials. Moreover, they perceived such quizzes as helpful tools to prepare them for the exams as well to recall the knowledge they had received in the classroom. Aside from the positive experience, they had also some obstacles such as the internet connection and the absence of edit feature for the answer. Students were also actively engaged in using the gamified online quizzes. They were engaged in terms of behavior, emotional, cognitive, and agentic. This research is limited in a sense that the results cannot be generalized to all classroom situations. Moreover, the future research also encouraged to have the point of view of the teachers as the one who prepared the gamified online quizzes in their classroom. Furthermore, future research can also focus specifically on certain skills.

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Conflict of Interest

No potential conflict of interest was reported.

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