

JUNIOR HIGH SCHOOL STUDENTS' ENGAGEMENT IN GAMIFIED LEARNING EXPERIENCES THROUGH QUIZIZZ

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Abstract

Various problems are faced by all academic sectors when studying online during the covid-19 pandemic. Teachers and students feel overloaded with learning at home and accomplishing school during the Covid-19 outbreak, specifically assessment, because the teacher can control and monitor the assessment activity through gamification-based assessment. One gamification-based assessment is Quizizz, created to facilitate online assessment, free user, and easy to apply. This study investigated the students' perspectives on using Quizizz as students' assessment tool regarding engagement theory. More specifically, the purposes of this study were to explore students' perspectives in Quizizz as their assessment tool regarding behavioral engagement, emotional engagement, and cognitive engagement. This study was a survey in which the data were collected through a questionnaire about engagement. The research participants were 32 students of secondary schools. The result of this study showed three types of engagement categories considered moderately high interpretation (M. 3.14). Specifically, Students endorsed positive behavioral engagement that demonstrated active participation, contribution, and persistence in using Quizizz. Then, students showed their positive emotions while using Quizizz, including emotional engagement. Also, students viewed good psychological involvement in students' self-regulation and encouragement in achieving the goal, which indicates a very high interpretation in cognitive engagement. So, Quizizz as a gamification-based assessment could engage students in behavioral, emotional, and cognitive. Thus, it is highly recommended that teachers consider using Quizizz as a good assessment tool to keep students engaged.

Keywords: Students' Engagement, Quizizz, Assessment, Gamified Learning

Introduction

These two years, the education sector in Indonesia had a new policy because of the newly discovered virus called Covid-19. The policy is stated by the Ministry of Education and Culture chief, Nadiem Makarim on the letter of Mendikbud No.04 2020. The teaching and learning process should be done from home or online. This policy made the teacher think and find an effective way to support the online learning process. Several online platforms can be used to conduct online learning because nowadays, online platforms have been provided freely in the internet. Furthermore, online platforms help communicate in distance learning.

The use of an online platform facilitates online teaching and learning process and online assessment. Conducting an assessment is needed among the parents, students, and teachers. Students' assessment is necessary for the parents to connect the parents and the school. The parents also need it to monitor their child's development at school. For the students, it is needed to indicate how their progress is. It helps the teacher evaluate and select appropriate strategies in the teaching process. On the other side, especially in Indonesia, an assessment document shows some information about students' performance and results. It is called a students' report. The teacher was asked to make students' reports that should be finished after the school examination because it consists of information about students' results in the classroom and in the examination.

However, in this current situation, the teacher had limit to conduct assessment such as controlling and monitoring the students directly. Hence, gamification-based assessment is believed to solve those problems. Gamification-based assessment is thought to solve those problems. Gamification refers to the application of game dynamics, mechanics and framework into non-game settings (Oliver, 2017). The use of gamification into assessment activity is purposed to achieve positive outcomes because gamification is an educational approach to facilitate learning, encourage motivation and engagement, improve learner participation and lesson interactivity, and stimulate learners (Lopez & Tucker, 2018). It means that proper gamification as an assessment tool can increase students' motivation to do the assignment or test well and keep the students engaged and participate in every assessment conducted by the teacher.

A study conducted by Michelle Stewart and Stephanie Anderson in 2016 found that gamification also increases learner engagement (Stewart & Anderson, 2016). Learner engagement showed as students' attention, interest, involvement and active participation. So that, the teacher can control and monitor the students how they interact and engage from their home by seeing the students' engagement. Interaction and engagement during online learning are also very important because it can positively affect the students' learning. So the teacher can monitor and control the students' interaction and engagement in assessment activity by using gamification-based assessment for online assessment.

One of the gamification-based assessment is Quizizz. Quizizz is an online assessment tool as a fun multiplayer classroom activity (Nanda, 2018). This tool can help the teacher prepare test. Students can have a personal report of their result regarding a correct and an incorrect answer, the ranking, and the number of points. In this case, both students and teachers know the students' progress.

Several studies have proved the advantages of Quizizz and have found students' positive wash back through Quizizz. To begin with the study in 2019, there was a study from Fang Zhao, Quizizz was applied at accounting class; the students reported that Quizizz application brought positive impact on their learning experiences. Then in 2020, a study from Dinda Firly Amalia (2020), Quizizz was conducted as an online assessment tool especially formative assessment at Dynamic English Course. The result showed that students have positive perspectives toward the Quizizz. The students agreed Quizizz is interesting and fun. Quizizz creates a competitive atmosphere. Furthermore, at the same year in 2020, Muhher Ammad Dafit Pitoyo, Sumardi and Abdul Asin conducted research Quizizz to explore the effect for students' learning motivation in English TOEFL structure class who are students at third semester in a university at Surakarta. The result shows that the students were motivated and wanted to learn more deeply after doing several gamified tests with Quizizz.

That explanation goes with the researcher experiences, the researcher found in the field through the observation that the 7th grade students faced online learning for the first time. This was the first experience for them to have an online assessment using Quizizz. It was also the first innovation for the students because they were bored having paper-based exercises during the online class. The teacher always asked them doing some exercises at their book at the end of the class. After that, the students submitted their work by taking a picture of it. Then, they

sent it to their teacher via *Whatsapp*. Finally, the teacher corrected the student's work one by one. Those processes take too long time. So, using Quizizz could be an alternative solution for it. Furthermore, in the online conversation between the researcher and the student, the student had been used Quizizz platform for more than one. It is believed that the students have already known about Quizizz well.

Due to the points reviewed above, many researchers have considered the positive potential of using Quizizz as an assessment tool. The gap seems noticeable. This research is to investigate the students' perspectives toward Quizizz application as an assessment tool in a summative context. Moreover, there is a lack of study investigating Quizizz particularly applied at the secondary level, and this study serves as an attempt to investigate students' perspectives.

Considering the several gaps above that have been stated and the aim of the study, the researcher tries to investigate and analyze it under the title "Gamification Based Quizizz as Students' Assessment Tool: Students' Perspectives".

Literature Review

Gamification

In October 2010, an innovative new trend emerged in the media that aimed to improve the participation of students in classroom activities and promote particular behaviors, called gamification (Bicen&Kocakoyun, 2018).

Gamification helps overcome the difficulties in learning and motivates participation in the learning activities (Codsh&Ravid, 2014). Landers and Callan (2011) give a definition on gamification as the use of elements associated with the game such as game mechanics to educational purposes to create more learning engagement. They introduced gamified online quizzes as result, they found most enjoyed through it. Rama (2017) stated that game design elements had specific psychological effects such as enriching the experience, increasing intrinsic motivation and improving player engagement.

Gamification in Assessment

In recent years, the study of learning has stayed away from traditional model. The integration of learning by technology has increased. Gamification in education is one of the examples. In 2007, Blunt had an experiment regarding games in learning community. The outcome showed that the students who used games scored significantly higher during assessment. The case of gamification in

assessment aligns knowledge acquisition and knowledge assessment as transparent processes (Ghergulescu&Muntean, 2012). Hence, gamification in an educational context could be a tool for assessment. When gamification is utilized with assessment, there should be any designs which associate game elements, mechanics, and game dynamic. They are the core to be successful assessment tool.

Quizizz

According to Quizizz.com, Quizizz was created by two Indian teachers, Ankit and Deepak in 2015. They designed Quizizz to help them in teaching mathematics in Bangalore, India. It is no wonder that many of teachers and students are used it. Zhao states that Quizizz is an educational game-based app that allows multiplayer activities to convert classroom exercises into a more interactive and fun experience.

The Quizizz application is an educational application using the concept of the learning-based game design in the form of online games for teaching and learning in the class. Quizizz is a platform that consists of many questions on it. The question and the answer are provided on the students' device. The question and answer are ordered randomly, so it is difficult for students to cheat (Hanif, et. al, 2019). Quizizz is a flexible platform that is used for pre-assessments, formative assessments, summative assessment, lesson hook, homework assignments, test reviews and post-assessments (Sari, 2019). Quizizz is a website that provides several questions which is form as quiz with various subjects at school. The subjects start from elementary school to high school.

Students Engagement

Literally, engagement is being actively committed and participated. Engagement is especially important for passive and discouraged learners. The students need engagement to reform their motivation to learn and engagement with the school. Student engagement is like a glue or mediator that connects important contexts such as home, school, peers, and community to students and, in turn to outcome of interest (Rescly&Christenson, 2012).

Types of engagement

Fredricks (2004) defined engagement in three ways;

- 1) Behavioral engagement

Behavioral engagement is about students' involvement in learning and academic tasks. The measures of behavioral engagement contain items about effort, persistence, concentration, attention, classroom participation, and initiative asking question and contribution to classroom discussion.

In this study, behavioral engagement defines students' participation in assessment activity using Quizizz application conducted at English class. It might be a daily assignment or midterm test. Their positive conduct could see their participation in attending the class, their contribution to classroom discussion, and their effort and persistence in joining Quizizz assessment activity.

2) Emotional engagement

Emotional engagement has similar meaning with students' affective. It draws on the idea of appeal. It includes positive reaction like feeling interest on a thing, fun, happiness, and pleasant or negative reactions like boredom, sadness, anxiety.

3) Cognitive engagement

Cognitive engagement can be categorized as the students' psychological involvement in learning activities, a desire to master and give attention to task, and prefer for challenging tasks. Behaviors indicative of cognitive engagement include: asking questions to clarify concepts, persisting with difficult tasks, reading more than the material assigned, reviewing material learned previously, studying source of information beyond those required, and using self-regulation and other cognitive strategies to guide learning. High levels of cognitive engagement facilitate students' learning of complex material.

Methodology

This study utilized quantitative approach concerning survey study. Survey design is suitable because survey design is a quantitative research technique used to explore the attitudes, perspectives, behaviors, or characteristics of a population (Creswell, 2012). Survey design was used to describe trends, such as community interest, students' belief and school programs. The Quizizz application was used in the research location for conducting online assessment specifically for conducting Midterm test or Penilaian Tengah Semester (PTS) and daily assignment. So, the context of assessment in this study focused on the summative assessment context.

The participants of this study were 32 secondary school students of a Junior High School in Jember, East Java, Indonesia. Regarding the aim of this research that this research would like to investigate the students'

perspectives toward the use of Quizizz application, the researcher set up some criteria that was relate with the aim of the study including the experienced of using gamification in English class, and the frequency of having Quizizz in class.

The researcher collected the data by using an adapted questionnaire. The questionnaire items were adapted from Zamzami Zainuddin, Muhammad Shujahat, Hussein Haruna and Samuel Kai Wah Chu (2019). The total items of the questionnaire were 20 items. There were 7 items of behavioral engagement, 7 items of emotional engagement and 6 items of cognitive engagement.

The data analysis technique in this study used descriptive statistic. Descriptive statistics indicate the data's spread score (mean, mode, median, variance, standard deviation, and range). The data analysis technique was started by formulating the result from questionnaire. The questionnaire in this study was using Likert Scale consisting four alternatives "strongly agree", "agree", "disagree", "strongly disagree". The result from total choice from each degree of agreement was multiplied with the value of the degree of agreement (strongly agree=4, agree=3, disagree=2, strongly disagree=1). The total of multiplication is the totalled to get the total frequency. Then, each frequency from each item in a questionnaire were quantified to get mean score. After the mean score was obtained. It was interpreted by using interpretation score from Hadiyanto, et. al. (2015) in this following table. The mean criteria for each statement were described in the table below:

Table 1
The Mean Criteria

| Interval | Criteria |
|-------------|-----------|
| 1.00 - 1.75 | Very low |
| 1.76 - 2.50 | Low |
| 2.51 - 3.25 | High |
| 3.26 - 4.00 | Very high |

Findings

The questionnaire result showed that the students' responses regarding engagement in the use of Quizizz as an assessment tool had positive perspectives Quizizz application as an assessment tool that engaged the students in terms of behavioral, emotional, and cognitive. Most of the interpretation mean score showed very high interpretation and high interpretation. The detail of the result could be seen in the table 2. It showed the result of the students' responses toward the

questionnaire of Quizizz application as students' assessment tool specifically summative regarding students' engagement.

Table 2
The Frequency of Students' Perspectives toward the Use of Quizizz as an Assessment Tool

| Types of engagement | No Item | Descriptive Statistics | | | | Mean Score | The Interpretation |
|--------------------------|------------|------------------------|----|---|--------|---------------|-----------------------|
| | | SA | A | D | S D | | |
| Behavioral engagement | 1 | 7 | 24 | - | 1 | 3,16 | High |
| | 2 | 6 | 23 | 3 | - | 3,09 | High |
| | 3 | 5 | 23 | 4 | - | 3,03 | High |
| | 4 | 9 | 23 | - | - | 3,28 | Very high |
| | 5 | 9 | 19 | 4 | - | 3,16 | High |
| | 6 | 4 | 25 | 3 | - | 3,03 | High |
| | 7 | 7 | 23 | 2 | - | 3,16 | High |
| Total | | 47 | 16 | 1 | 1 | 3,13 | High |
| Emotional engagement | 8 | 5 | 19 | 7 | 1 | 2,88 | High |
| | 9 | 17 | 14 | 1 | - | 3,50 | Very high |
| | 10 | 3 | 24 | 5 | - | 2,94 | High |
| | 11 | 5 | 23 | 4 | - | 3,03 | High |
| | 12 | 5 | 17 | 9 | 1 | 2,81 | High |
| | 13 | 6 | 19 | 7 | - | 2,97 | High |
| | 14 | 3 | 28 | 1 | - | 3,06 | High |
| Total | | 44 | 14 | 3 | 2 | 3,03 | High |
| Cognitive engagement | 15 | 11 | 19 | 1 | 1 | 3,25 | High |
| | 16 | 12 | 19 | 1 | - | 3,34 | Very high |
| | 17 | 6 | 24 | 2 | - | 3,13 | High |
| | 18 | 8 | 20 | 4 | - | 3,13 | High |
| | 19 | 19 | 13 | - | - | 3,59 | Very high |
| | 20 | 8 | 24 | - | - | 3,25 | High |
| Total | | 64 | 11 | 8 | 1 | 3,28 | High |
| Total 20 items | | 15 | 42 | 5 | 4 | 3,14 | High |
| | | 5 | 3 | 8 | | | |

Note: SA = Strongly Agree; A = Agree; D = Disagree; SD= Strongly Disagree

As shown in table 2, No significant difference in each engagement's frequency. Looking at the distribution, most of the item steps on high interpretation for each category of engagement. It means that students endorse sa positive perspective on Quizziz regarding their engagement and the application.

For more detailed information based on the research questions of this study about what are students' perspectives on using gamification-based Quizziz as an assessment tool regarding (1) behavioral engagement, (2) emotional engagement, and (3) cognitive engagement, the researcher provided tabular form

Table 3
The Descriptive Statistics of Behavioral Engagement

| <i>Types of engagement</i> | <i>No Item</i> | <i>Item</i> | <i>Mean Score</i> | <i>The Interpretation</i> |
|------------------------------|----------------|---|-------------------|---------------------------|
| <i>Behavioral engagement</i> | 1 | I never skipped the class when Quizziz application was used | 3,16 | High |
| | 2 | I never submitted the assignment late when using Quizziz application | 3,09 | High |
| | 3 | I tried to be active in asking and answering question during the class when my teacher gave assignment/test using Quizziz application | 3,03 | High |
| | 4 | I listened carefully during the class when my teacher gave assignment using Quizziz application | 3,28 | Very high |
| | 5 | I actively participated during the class when my teacher used Quizziz application | 3,16 | High |
| | 6 | I was able to answer questions on Quizziz independently | 3,03 | High |

| | | | |
|--------------|---|------|------|
| 7 | I studied hard to be able to answer the question on Quizizz application | 3,16 | High |
| <i>Total</i> | | 3,13 | High |

This type of engagement tends to students' involvement in learning and academic tasks. The first seven items in the questionnaire, the item from number 1 to number 7 indicated behavioral engagement. According to Fredricks (2004), behavioral engagement is about students' involvement in their learning and academic activities. These seven items indicated behavioral engagement, especially the students' interactive response on their assessment activity using Quizizz application. The result of all seven items in behavioral engagement showed high rating. It can be noted that the students showed high feedback especially in term of behavioral engagement toward the use of Quizizz application as an assessment and this was supported by the study that gamified group participants had significant improvement in the student behavior (Smiderle, et.all, 2020).

The questionnaire item number 1 and number 2 told about the students' positive conduct. Item number 1 indicated never skipping the test or assignment when Quizizz application was used and item number 2 indicated never submitting the assignment late during when using Quizizz application. This study revealed that the students' response is high, 3.16 for item number 1 and 3.09 for item number 2. A factor may have driven why the students remain consistent and complete the assignment on time.

For the next item of behavioral engagement, questionnaire item number 3, number 4 and number 5 showed the students' participation in the classroom. Participation in item number 3 presented being active in asking and answering questions during the class when the teacher gave a test by using the Quizizz application at class. For item number 4 presented about listening carefully during the class when using Quizizz application. Then, item number 5 presented about actively participating during the class. These three items showed very high responses (number 4) and high responses (number 3, 5). The highest mean score showed 3.28 points. it can be seen that students highly and actively participated in the test by using Quizizz application as assessment tool.

The last questionnaire item in behavioral engagement showed students independently do the test/assignment for item number 6 and students' effort and persistence study hard for their test or assignment

| TYPES OF ENGAGEMENT | NO ITEM | ITEM | MEAN SCORE | THE INTERPRETATION |
|----------------------|---------|--|------------|--------------------|
| EMOTIONAL ENGAGEMENT | 8 | When I used Quizizz application, I felt interested | 2,88 | High |
| | 9 | When I answered questions on Quizizz application, I felt curious about my score | 3,50 | Very high |
| | 10 | I felt enthusiastic to participate in assessment activity by using Quizizz application | 2,94 | High |
| | 11 | I enjoyed assessment activity because of using Quizizz application | 3,03 | High |
| | 12 | I thought that assessment activity was fun because of the using Quizizz application | 2,81 | High |
| | 13 | I enjoyed doing assignmnet/test by using Quizizz application | 2,97 | High |
| | 14 | I enjoyed learning new things with Quizizz application | 3,06 | High |
| TOTAL | | | 3,03 | High |

on Quizizz application for item number 7. With the game based that is provided in gamification, it can develop students' encouragement to study hard to complete the test and then they are able to answer it confidently.

The numeric data and the detailed discussion about the students' perspectives toward Quizizz application as their assessment tool regarding behavioral engagement showed that the students feedback is founded in term of their positive conduct to complete and submit the test using Quizizz persistently, their participation be active in the class, listen carefully to class and their effort to study hard in to answer the test independently.

The next item in a questionnaire is emotional engagement. It started from number 8 to number 14. Emotional engagement has similar

meaning with students' affective. According to Fredricks (2004), emotional engagement involves students' affective and emotional reactions of students. These 7 items showed students' emotional reactions when the teacher used the Quizizz application, such as feeling interested, curious, enthusiastic, enjoyed and fun. Those reactions are indicative of emotional engagement. The result of all these items showed two ratings, one item for very high and six items for high rating, item number 9 showed very high rating.

The first item that belongs to emotional engagement was item number 8. This item indicates emotional engagement about feeling interested in students when using Quizizz application. Thus, the result of this study confirmed that the result of item number 8 about students felt interested when they used Quizizz application because Quizizz was more entertaining.

Next item was number 9. As explained above, this item was the highest mean score in term of emotional engagement. The indicative emotional engagement presented in this item was feeling curiosity about students' scores after completing the assessment in Quizizz application. Feeling curiosity on score in Quizizz application could be caused by game like features that could be a power to produce more engaging (Zainuddin, et. al, 2019). Emotions become part of game dynamics that Werbach and Hunter had designed in 2012. Emotions components consisted of the achievement. It means that students' score in Quizizz application is the form of students' achievement and the emotion of feeling curiosity might increase.

Next item was number 10. This item was addressed for students' affective, feeling enthusiastic. This item showed high rating with the mean score 2.94. The items showed the students agreement that they enthusiastically participated in the assessment activity by using Quizizz application. Then, the Quizizz application is an example of gamification based assessment, so the students enthusiastically participated in doing a test using the Quizizz application.

The next item, it would be combined three items of emotional engagement. They were item number 11, 13 and 14. The indicative of emotional engagement of these items were feeling enjoyed. Number 11 showed feeling enjoyed the assessment activity by using Quizizz application. Next, item number 13 presented feeling enjoyed doing assignment/test. Last, number 14 was about feeling enjoyed learning new things. The mean score of 3 items in order was 3.03, 2.97, and 3.06. These three mean scores showed high rating. It means that Quizizz application used by students that belonged to gamification based

assessment makes the students enjoy learning specifically doing assignment and learning new things.

The last item from the emotional engagement was number 12. The interpretation of this item was high with the mean score 2.81. This item told that the students agreed assessment activity was fun because of using Quizizz application. This study means that the high rating of students' responses showed that the assessment activity was fun because the Quizizz application was fun, interactive and kept them focused.

In conclusion, regarding students' perspectives on emotional engagement, it can be found that there are four positive feelings the students feel. There were feeling interested in the Quizizz application, feeling enthusiastic to participate assessment activity using the Quizizz application, feeling fun and enjoyed toward Quizizz application as a tool for conducting the online assessment. These four positive feelings can be caused by Quizizz characteristics that were engaging, entertaining, keeping students focused, game based features and fun.

Table 5
The Descriptive Statistics of Cognitive Engagement

| <i>Types of engagement</i> | <i>No Item</i> | <i>Item</i> | <i>Mean Score</i> | <i>The Interpretation</i> |
|-----------------------------|----------------|--|-------------------|---------------------------|
| <i>Cognitive engagement</i> | 15 | I was able to track my achievement progress when using Quizizz application | 3,25 | High |
| | 16 | By using Quizizz application, I was able to understand my weaknesses and strengths | 3,34 | Very high |
| | 17 | I was able to remember the knowledge that I got from Quizizz application | 3,13 | High |
| | 18 | Quizizz application helped me to improve my critical thinking skills through various type of quiz question | 3,13 | High |

| | | | |
|--------------|--|------|-----------|
| 19 | I had a goal to get a good score in the assignment when I used Quizizz application | 3,59 | Very high |
| 20 | Quizizz application was a form of friendly competition | 3,25 | High |
| <i>Total</i> | | 3,28 | High |

The last item of the survey is cognitive engagement. There were 6 items. The items started from number 15 to number 20. Cognitive is called something that relates to academic context. According to Stipek (2002), cognitive engagement includes students' psychological involvement in learning that indicates a students' desire to master the task and give attention to the task. The item of number 15 to number 20 consists of indicative cognitive engagement. These five items indicates about showing flexible problem solving, self-regulate which the students can manage themselves in academic term, and have a goal to get a good score, and motivation to learn.

The items of number 15 and number 16 showed self-regulation of how the students control or monitor their academic progress. The type of assessment that is used in Quizizz application is summative context. According to Brown (2003), achievement test are often summative. Achievement test will offer washback about the quality of a student's performance. The washback that the students got can be in the form of the students' point in Quizizz application or leaderboard which the students can make comparison with other students. Thus, the students agreed that by using Quizizz application, they could track their achievement progress.

The next item that showed indicative of self-regulation was number 16. This item contained how students can understand their weaknesses and strengths. This item showed 3.34, and the item of number 16 showed high rating. The students agreed that by using Quizizz application, they were able to understand their weaknesses and strengths after completing test from it. The type of test conducted in Quizizz application was summative assessment to understand their strengths and weaknesses.

Item number 17 and number 18 showed the indicative cognitive engagement of students' actual recall of processes. The item of number 17 told the students who used Quizizz application could remember the knowledge that from Quizizz application. This knowledge could be about

material examined for the student's test. The students agreed that they were able to memorize the knowledge. This was supported by the theory of benefit of gamification in learning. Consequently, Quizizz application help students to absorb the knowledge they got from the test.

Then, the item of number 18 had the same indicative cognitive engagement as item number 17. This item told about how students can improve their critical thinking through various type of quiz question. The teacher used Quizizz application as the students' summative assessment tool. Achievement test is example of summative assessment. The benefit of achievement serves the diagnostic role (Brown, 2003). From this theory by Brown, the students can indicate what their needs to continue to work on in the future with several strategies by recognizing the various type of quiz question in Quizizz such as multiple-choice, fill-in-blank, etc. This increases their critical thinking with gamification strategies.

Showing feeling motivated to learn and giving an effort to do best are the indicatives cognitive engagement. By using the Quizizz application, the students agreed that they were motivated to get a good score for their daily assignment or midterm test results. This was item number 19 which showed very high mean score. That was 3.59. One of game element in Quizizz application is point (Zichermann & Cunningham, 2011). Point will immediately come up after completing the quiz. When the students consider a point system, they might immediately think of goal for it. Consequently, looking at the points that will come up at the end of the test, the students had a goal to get a good score.

The last item of cognitive engagement told Quizizz application was a form of friendly competition. Quizizz is facilitated with several game elements that are created also for reason. There was a theory stated by Ghergulescu & Muntean (2012). They stated that the integration of gamification in assessment aligned the assignment as transparent process. This theory means that gamification used as students' assessment tool is similar with friendly competition for each student. They can monitor their progress and can see others' progress in completing the test.

Considering the numeric data and previous study for six items in cognitive engagement, it can be concluded that the four indicatives cognitive engagement were found. The students can track their academic process and can monitor their strengths and weaknesses as their self-regulation. Students also could remember the knowledge that was got from Quizizz application as the form of students' actual recall, they can

improve their strategies from various types of test when doing test by using Quizizz again. The students also agreed that Quizizz feels like friendly competition and encourage them to get a good score.

Discussion

Based on the data gained, some findings are worth to be discussed in this section. Firstly, among all findings shown in those table, the first behavioral engagement belongs to seven items in questionnaire. As explained in the findings, they were item from number 1 to number 7. According to Fredricks (2004), behavioral engagement is about students' involvement in their learning and academic activities. These seven items indicated behavioral engagement, especially the students' interactive response on their assessment activity using Quizizz application. The result of all seven items in behavioral engagement showed high rating. It can be noted that the students showed high feedback especially in term of behavioral engagement toward the use of Quizizz application as an assessment and this was supported by the study that gamified group participants had significant improvement in the student behavior (Smiderle et al.,2020)

The questionnaire item number 1 and number 2 told about the students' positive conduct. Item number 1 indicated never skipping the test or assignment when Quizizz application was used and item number 2 indicated never submitting the assignment late during when using Quizizz application. This study revealed that the response of the students is high, 3.16 for item number 1 and 3.09 for item number 2. A factor may have driven why the students remain consistent and complete the assignment on time. A study from Huang et all in 2018 showed the implementation of gamification strategies positively affected students' behavioral in stimulating learners to complete the activities such as assessment on time and being persistent to participate on the activities (Huang, et. al, 2018). Hence, it can be stated that students have positive perspectives toward gamification in term of positive conduct like consistently completing and submitting the assignment/test in Quizizz application.

For the next item of behavioral engagement, questionnaire item number 3, number 4 and number 5 showed the students' participation in the classroom. Participation in item number 3 presented being active in asking and answering questions during the class when the teacher gave a test by using the Quizizz application at class. For item number 4 presented about listening carefully during the class when using Quizizz application.

Then, item number 5 presented about actively participating during the class. These three items showed very high responses (number 4) and high responses (number 3, 5). The highest mean score showed 3.28 points. This result is in line with the notion of gamification, improving student participation could be done by gamification that is stated on Bicen and Kocakoyun's (2018) study about perceptions of students for gamification approach. Based on the supported theory for this indicative emotional engagement, it can be seen that students highly and actively participated in the test by using Quizizz application as assessment tool.

The last questionnaire item in behavioral engagement showed students independently do the test/assignment for item number 6 and students' effort and persistence study hard for their test or assignment on Quizizz application for item number 7. These are also in line with the notion gamification used game based with meaningful impact, especially learning encouragement, motivating action, and problem solving (Rajali, et. al, 2020). With the game based that is provided in gamification, it can develop students' encouragement to study hard to complete the test and then they are able to answer it confidently.

The numeric data and the detailed discussion about the students' perspectives toward Quizizz application as their assessment tool regarding behavioral engagement showed that the students feedback is founded in term of their positive conduct to complete and submit the test using Quizizz persistently, their participation be active in the class, listen carefully to class and their effort to study hard in to answer the test independently.

Secondly, The next seven items are addressed to emotional engagement. They were item from number 8 to number 14. According to Fredricks (2004), emotional engagement involves students' affective and emotional reactions of students. These 7 items showed students' emotional reactions when the teacher used the Quizizz application, such as feeling interested, curious, enthusiastic, enjoyed and fun. Those reactions are indicative of emotional engagement. The result of all these items showed two ratings, one item for very high and six items for high rating. Item number 9 showed very high rating.

The first item that belongs to emotional engagement was item number 8. This item indicates emotional engagement about feeling interested in students when using Quizizz application. Feeling interested in the Quizizz application, students felt is supported by a study from

Basuki& Hidayati (2019). This study found that the students' perspectives of Quizizz was more engaging, more fair result, keeping them focusing on the work and more entertaining. Thus, the result of this study confirmed that the result of item number 8 about students felt interested when they used Quizizz application because Quizizz was more entertaining.

Next item was number 9. As explained above, this item was the highest mean score in term of emotional engagement. The indicative emotional engagement presented in this item was feeling curiosity about students' scores after completing the assessment in Quizizz application. Feeling curiosity on score in Quizizz application could be caused by game like features that could be a power to produce more engaging (Zainuddin, et.al, 2019) Emotions become part of game dynamics that Werbach and Hunter had designed in 2012. Emotions components included the achievement. It means that students' score in Quizizz application is the form of students' achievement and the emotion of feeling curiosity might increase.

Next item was number 10. This item was addressed for students' affective, feeling enthusiastic. This item showed high rating with the mean score 2.94. The items showed the students agreement that they enthusiastically participated in the assessment activity by using Quizizz application. This result was in line with one of the purposes of gamification, which is helpful in motivating participation in the learning activities such as assessment activity (Codish&Ravid, 2014). Then, the Quizizz application is an example of gamification based assessment, so the students enthusiastically participated in doing a test using the Quizizz application.

The next item, it would be combined three items of emotional engagement. They were item number 11, 13 and 14. The indicative of emotional engagement of these items were feeling enjoyed. Number 11 showed feeling enjoyed the assessment activity by using Quizizz application. Next, item number 13 presented feeling enjoyed doing assignment/test. Last, number 14 was about feeling enjoyed learning new things. The mean score of 3 items in order was 3.03, 2.97, and 3.06. These three mean scores showed high rating. These three results were confirmed by the study from Landers and Callan in 2011, and they found

that most students enjoyed the additional learning opportunity through gamified quizzes.

From the explanation above, it means that Quizizz application used by students that belonged to gamification based assessment makes the students enjoy learning specifically doing assignment and learning new things. The last item from the emotional engagement was number 12. The interpretation of this item was high with the mean score 2.81. This item told that the students agreed assessment activity was fun because of using Quizizz application. This high interpretation was supported by the study from Fang Zhao's study in 2019. Fang Zhao's study result reported Quizizz was fun, interactive and kept the students' focused. This study means that the high rating of students' responses showed that the assessment activity was fun because the Quizizz application was fun, interactive and kept them focused.

In conclusion, regarding students' perspectives on emotional engagement, it can be found that there are four positive feelings the students feel. There were feeling interested in the Quizizz application, feeling enthusiastic to participate assessment activity using the Quizizz application, feeling fun and enjoyed toward Quizizz application as a tool for conducting the online assessment. These four positive feelings can be caused by Quizizz characteristics that were engaging, entertaining, keeping students focused, game based features and fun.

Thirdly, Cognitive is called something that relates to academic context. According to Stipek (2002), cognitive engagement includes students' psychological involvement in learning that indicates a students' desire to master the task and give attention to the task. The item of number 15 to number 20 consists of indicative cognitive engagement. These five items indicate about showing flexible problem solving, self-regulating. The students can manage themselves in the academic term, have a goal to get a good score, and motivation to learn.

The items of number 15 and number 16 showed self-regulation of how the students control or monitor their academic progress. The type of assessment that is used in Quizizz application is summative context. According to Brown, achievement test are often summative. Achievement test will offer washback about the quality of a student's performance (Brown, 2004). The washback that the students got can be in the form of the students' point in Quizizz application or

leaderboard which the students can make comparison with other students. Thus, the students agreed that by using Quizizz application, they could track their achievement progress.

The next item that showed indicative of self-regulation was number 16. ~~This item contained how~~ students can understand their weaknesses and strengths. This item showed 3.34, and the item of number 16 showed high rating. The students agreed that by using Quizizz application, they were able to understand their weaknesses and strengths after completing test from it. In line with the theory stated by Brown (2004) that summative assessment reinforces students strengths and weaknesses. The type of test conducted in Quizizz application was summative assessment to understand their strengths and weaknesses. Item number 17 and number 18 showed the indicative cognitive engagement of students' actual recall of processes. The item of number 17 told the students who used Quizizz application could remember the knowledge that from Quizizz application. This knowledge could be about material examined for the student's test. The students agreed that they were able to memorize the knowledge. This was supported by the theory of benefit of gamification in learning. After using and trying gamification in learning activities, it could be improve knowledge absorption and boost retention (Oliver, 2017). Consequently, Quizizz application help students to absorb the knowledge they got from the test. Then, the item of number 18 had the same indicative cognitive engagement as item number 17. This item told about how students can improve their critical thinking through various type of quiz question. The teacher used Quizizz application as the students' summative assessment tool. Achievement test is example of summative assessment. The benefit of achievement serves the diagnostic role. From this theory by Brown (2004), the students can indicate what their needs to continue to work on in the future with several strategies by recognizing the various type of quiz question in Quizizz such as multiple-choice, fill-in-blank, e t c this increases their critical thinking with gamification strategies.

Showing feeling motivated to learn and giving an effort to do best are the indicates cognitive engagement. By using the Quizizz application, the students agreed that they were motivated to get a good score for their daily assignment or midterm test results. This was item

number 19 which showed very high mean score. That was 3.59. One of game element in Quizizz application is point (Zichermann&Cunningham, 2011). Point will immediately come up after completing the quiz. When the students consider a point system, they might immediately think of goal for it. Consequently, looking at the points that will come up at the end of the test, the students had a goal to get a good score.

The last item of cognitive engagement told Quizizz application was a form of friendly competition. Quizizz is facilitated with several game elements that are created also for reason. There was a theory stated by Ghergulescu&Muntean in their study entitle "*Assessment in game-based learning: Foundations, innovations and perspectives*". They stated that the integration of gamification in assessment aligned the assignment as transparent process. This theory means that gamification used as students' assessment tool is similar with friendly competition for each student. They can monitor their progress and can see others' progress in completing the test.

Considering the numeric data and previous study for six items in cognitive engagement, it can be concluded that the four indicatives were found. The students can track their academic process and can monitor their strengths and weaknesses as their self-regulation. Students also could remember the knowledge that was got from Quizizz application as the form of students' actual recall, they can improve their strategies from various types of test when doing test by using Quizizz again. The students also agreed that Quizizz feels like friendly competition and encourage them to get a good score.

Conclusions

The findings on this study have several contributions toward English language teaching, especially regarding students' engagement on summative assessment context language assessment. They were behavioral, emotional, and cognitive engagement.

Regarding behavioral engagement, the students' perspectives toward Quizizz application as their assessment tool was founded in terms of their positive conduct to complete and submit the test using Quizizz persistently, their participation to be active in the class, listen carefully to class and their effort to study hard to answer the test independently.

Moreover, There were feeling interested on Quizizz application, feeling enthusiastic to participate assessment activity using Quizizz

application, feeling fun and enjoyed toward Quizizz application as a tool for conducting online assessment. These four positive feeling could be caused by the Quizizz characteristics that were engaging, entertaining, keeping students focused, game based features and fun. It represents emotional engagement.

Lastly, regarding students' perspectives in cognitive engagement, four indicatives cognitive engagement were found. The students can track their academic process and can monitor their strengths and weaknessess as their self-regulation. Students also could remember the knowledge that was got from Quizizz application as the form of students' actual recall, they can improve their strategies from various types of test when doing test by using Quizizz again. The students also agreed that Quizizz feels like friendly competition and encouraged them to score well.

As the repressive action toward the findings, teacher may also take Quizizz application as primary or alternative concern in assessing students. Moreover, the variety used materials in Quizizz provide students with more option to link their learning process to their learning engagement.

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