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GAMIFICATION BASED ASSESSMENT: A TEST ANXIETY REDUCTION THROUGH GAME ELEMENTS IN QUIZIZZ PLATFORM

Research Article

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Abstract

Test anxiety always makes students afraid of doing the test because they probably think that they will fail. To overcome the problem, the teacher then used gamification based assessment. Furthermore, the study investigates the category of students test anxiety, students' attitudes toward Quizizz and the students' preference toward the elements of game in Quizizz. This study is a case study which the data were collected by using observation, interview, and questionnaires. The participants of this study were 14 students in an English course in Solo. The sampling used by the researcher was purposive sampling. The results of this study showed the category of students test anxiety considered moderately high, the students' attitude toward Quizizz in reducing test anxiety also considered high (M= 3.94) and the kinds of elements of game which students prefer most were Points (M= 4.357), Test report (M= 3.929), Leader board (M=3.714), Time restriction (M=3.357), Profile (M= 3.429) and Meme (M= 3.357). The implication of this study is Quizizz successfully reduce test anxiety because of the use of game elements in that application. Thus, it is a good option for teachers to use Quizizz on the exam.

Keywords: Assessment, Gamification, Elements of game, Test anxiety.

1. Introduction

Test anxiety becomes a concern as it is believed to be detrimental to the school success owing to the effect on performance evaluation and self-esteem. Test anxiety is defined to be an individual emotional state. The individual feeling before or throughout a particular assessment in relation to the act of completing the assessment, the risk and fear of failing and anything related to undesirable moments (Bonaccio & Reeve, 2010). Test anxiety is a serious problem for many students (Ergene, 2003) because it will be the obstacles to achieve their goals. Moreover, the examination is definitely becoming harder and more anxiety-provoking (Putwain, 2014). Generally, university students suffer more anxiety because in that educational level they think about future and career and it is affected by the score of the test they take or get in university or institution. College is an important time of life for many people and much scholastic testing occurs during that time (Guay, 2005).

There are many ways to overcome the problems, to reduce the anxiety as students on the exam. The teachers can take the benefits of technology by using gamification in education world such as for assessment. There were many researchers conducting an investigation of game and technology in test anxiety reduction. Smits and Charlier (2011) conducted a study entitled Game-based assessment and the effect on test anxiety. The result of the study was concluded that games' integration in assessment results in positive psychological well-being as the result of less test anxiety of students. They assumed based on the literature that it would increase academic achievement. Pless (2010) also concluded from his study that the use of computerized treatment for test anxiety was successful. Both studies are the evidence of the use of technology and game in reducing students' test anxiety. However, the researcher

was interested to investigate gamification for reducing test anxiety which was employed in some English course.

Gamification is non-game contexts in using game design element (Zichermann & Cunningham in Marcos et.al., 2014). Thus, it is not like a pure game. It only uses the elements of the game to create something like game. The game elements which can be included are Badges, Achievements, Avatars Content Unlocking, Leader Board, Points, Virtual Goods, Teams and Levels (Werbach and Hunter in Cheong, 2014). That element will be designed for enhancing engagement, motivation and instruction (Kim, 2015).

Gamification is applicable for many aspects in education such as for teaching and assessment. However, the focus of this study is on the way teacher use gamification based assessment as the way to reduce students' test anxiety. As generally known that most of the students like to play a game and they play it most of the time in their lives. One of the most popular online game in Indonesia is Mobile Legend. It is MOBA (Massive Online Battle Arena), 5 players VS 5 Players. The statistical data obtained by the game company that there are 43 million players who are monthly active in Southeast Asia and Indonesian players are almost 50 percent of the total (Sunarto, et. al, 2019). It indicated that most of the people are engaged with something game-like. Furthermore, it is able to be adapted into assessment as students will probably feel like happy to have it.

Based on the background of the study, the researcher to investigate (1) the students' anxiety as facing examination, (2) the students' attitude toward Quizizz employment in examination and (3) game elements in Quizizz which students are engaged most. The significance of this study will be for the innovation of conducting an assessment in school or education world. It gives teachers options to include technology and game into completing purposes because this is the era of industry 4.0. However, to face the industrial revolution 4.0, teachers are supposed to be able to use ICT in teaching and learning in which it is also in the line with the demand of the 21st-century learning (Dwiono et.al, 2018).

2. Literature Rewiew

2.1.Assesment

One of the important things in education which support the successful teaching-learning process is assessment. It is admittedly to be a source of data which will be utilized to create anticipation. It means teachers will be able to reflect their teaching process including the students learning process to achieve the learning goals. Assessment appeared in an educational issue in the 20th century. There was various literature discussed assessment and there were lots of experts interested in the case. They agreed that assessment is the part of the educational system which is not separable as it becomes the main component of education to conduct effective learning (Bransford et.al., 2000).

Teachers should understand the progress of students' learning progress from an early moment until the end of teaching-learning process in some academic year. Hereby, Assessment is the way to monitor students' learning progress. Assessment is used by the teacher to collect more information about students' learning progress systematically. The information is able to be collected by many ways in the form of written and oral test such as extended performance of an authentic task, responses (essays), traditional paper and pencil tests, and student self-report. In additions, teachers can also observe their students during teaching-learning process and they can also assess their students incidentally or intendedly. A good teacher will never ignore his students because assessment becomes an integral part of the instructional process and the way to help students learn (Guskey, 2003).

There are two types of common assessment in education namely formative and summative assessment. Both types of assessment are used to evaluate students' learning

progress. Nevertheless, the way to obtain progress is different. Formative assessment is an ongoing process of evaluating students' competencies and skills. Thus, the assessment is considered longer depends on the academic period given. According to Brown (2004, p.6), Formative assessment is an evaluation of developing students' competencies and skills process in the form of aid to enhance students' growth and progress of learning.

While the summative assessment is evaluation of students' competencies and skills at the end of a unit of instruction or course. Thus, the evaluation is not ongoing like formative assessment. According to Brown (2004) Summative assessment is the way to measure what students have learned during some period given and usually conducted at the end of the unit of instruction.

There are basic principles of assessment which are theorized by Brown (2004) as follows:

(1) Appropriate assessments serve in strengthening and retention of information.
(2) Assessments can identify areas of strength areas which need treatment.
(3) Assessments can offer a sense of a constant approach to elements within a curriculum.
(4) Assessments can promote student autonomy by encouraging students' self-evaluation of their progress.
(5) Assessments can motivate learners to have goals.
(6) Assessments can evaluate teaching effectiveness.

2.2. Test anxiety

Test anxiety is something common happening among students as the test will determine their future such as their career. They will think about how to achieve the best performance for the test. They think over and cause some anxiety which disturbs their performance. Test anxiety is a serious problem for many students (Ergene, 2003). Definitely, the examination is becoming harder and more anxiety-provoking (Putwain, 2008). The result of the anxiety is a negative affective state occurring in evaluative conditions. The negative affective is due to worry, tension, and over-stimulation of the central nervous system (Ergene, 2003).

There are two fundamental elements to investigate students' test anxiety and those two become the general focus. Both elements are the cognitive component and physiological component (McDonald, 2001). Cognitive component refers to worry. Cognitive interference diverts attention to self-deprecating thoughts (Orbach et al., 2007). Henceforth, the children have negative beliefs about the ability of problem-solving although they actually are capable to solve the problem and generate some solutions. On the other hand, Physiological component refers to emotionality or autonomic arousal manifested in bodily indications such as sweaty palms, heart rate increase, and trembling arising from being in an evaluative situation (McDonald, 2001)

Regarding the investigation of students' test anxiety, Richard Driscoll (2007) created an instrument with several criteria as the reference of the test anxiety category. It was called The Westside Test Anxiety Scale. It combines six items assessing impairment, four items on worry and dread. The ten items in the instrument are designed to identify the anxiety impairments form students. It hopefully helps teachers for conducting an intervention to reduce students test anxiety. The scale items cover self-assessed anxiety impairment and cognitions which can impair performance. There six categories of students' test anxiety which is determined with the mean score.

Table 1. Westside Test Anxiety Scale
Richard Driscoll (2007)

Mean score	Category of test anxiety
1.0—1.9	Comfortably low test anxiety
2.0—2.5	Normal or average test anxiety
2.5—2.9	High normal test anxiety
3.0—3.4	Moderately high (some items rated 4=high
3.5—3.9	High test anxiety (half or more of the items rated 4=high)
4.0—5.0	Extremely high anxiety (items rated 4=high and 5=extreme)

2.3. Gamification in assessment

Gamification is the term which came popularly in 2010 and there are many experts discuss the use of gamification in education such as the use of gamification to engage students learning motivation. According to de Byl (2013) the popularity of gamification is indicated in 2010 by Google search tool. Gamification is like the derivation from the game in which the core is the same. Game and gamification are like using the term of *play to get engagement.* Thus, both are based on entertaining principles. However, gamification and game are different in this context of education.

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. Additionally, Gamification is able to enhance students' engagement, motivation, and instruction (Kim, 2015). The elements of the game are various and those all elements will support the idea of gamification.

As gamification is utilized to be assessment, there should be any design which associate game elements, game mechanic and game dynamic into one constituent. They are the core of the successful gamification based assessment. One of the examples the design came from Werbach and Hunter Hunter in Cheong, 2014. They explained to design gamification based assessment into three steps. The first process is to select the dynamics of the test and the second process is to select the appropriate mechanic of the test. It needs to take into account that both dynamics and mechanics of the test should be matched. The last is to select the components which fit the mechanics. Dynamics, mechanics, and components of the game utilized in the gamification based assessment are summarized in Table.

Table 2. *Design of gamified assessment by Werbach and Hunter Hunter in Cheong (2014)*

Dynamics	Mechanics	Components
Constraints	Challenge	Content unlocking
Emotions	Challenge	Content unlocking
	Reward	Badges, Achievements, Avatars Content Unlocking
	Competition	Badges, Leader Board
	Competition	Teams
	Resource Acquisition	Points, Virtual Goods

	Feedback	Points, Content Unlocking, Badges Leader Board, Levels
Progression	Reward	Badges, Achievements, Content Unlocking
	Resource Acquisition	Points, Virtual Goods
	Feedback	Points, Badges, Leader Board, Levels
Relationship	Cooperation	Teams

(1) Components, components are the smallest parts which directly affect the design of gamification. To integrate the dynamics and mechanics selected in this research, the following components were used: avatars, levels, content unlocking, the leader board, achievements, virtual goods, points, teams, and badges.
(2) Mechanics, a gamified environment consists of mechanics, which are used to create player engagement and involve essential processes. To highlight the dynamics selected for this design, the mechanics of challenge, rewards, feedback, resource acquisition, cooperation, and competition.
(3) Dynamics, a gamified environment consists of dynamics, which are not directly included in the process, yet make it possible to look at the design from a broader perspective. Among the dynamics, constraints, emotions, progression and relationships were used in this study.

2.4. Quizizz

Quizizz is a website that provides teachers to conduct **formative assessments** by giving quiz for **the student** of all ages. According to Reece (2016); Yoshida (1985), the quiz is a test of knowledge which has been gained in advance, especially as competition in the form of a game. Although it is like competition, the test is entertaining. The quiz is an entertaining and easy way to investigate students' understanding of some topics (Sue, 2006). She added that quiz would prize a reward for some who accomplished some achievement. Thus, it will minimize students' anxiety during doing the test with a quiz (Barbara, 2009). A quiz is usually used multiple choice question which is quickly and easily to score students answer (Tabata et. al., 2009); (Zane & Lin, 2013) and quiz provides questions at various levels of difficulty (William, 2011). Furthermore, the students' report of their answers (feedback) will be given directly, automatically.

Quizizz provides a multiplayer activity that students possibly can practice together. The total player who will do the quiz is determined by the teacher. Students will be given a code to join a quiz and the teacher will ensure the students who join the quiz with the students' attendance list to avoid intruders. Thus, not everyone can join the quiz. Quizizz supports on all devices such as computers, smartphones and tablet, and quizizz also has iOS, Chrome apps and Android. Consequently, it is reachable in this era which technology development is very impressive. Most students have a smartphone or laptop with a good internet connection and it is accessible for them to do the quiz. However, students need to have their own device in the other word one student, one device. The main features of Quizizz include:

(1) **Student-paced: the** teacher will give a time limit for each question and students need to answer before the time given for each answer is up.
(2) **BYOD:** quizizz can be played in various devices with a browser, including PCs, smartphones, laptops, tablets, and.

(3) **Thousands of public quizzes:** a great number of teacher around the globe create their own quiz and it can be shared, thus everyone can do the quiz as long as they are a member of quizizz. It is really helpful for the teacher to get some inspiration from another teacher in designing the quiz.
(4) **Quiz Editor:** quizizz allows the teachers to pluck questions from any quiz, easily add images from the internet, auto-save teachers' progress and tons of other features.
(5) **Reports:** this feature is the one which can give teachers detailed information about student-level understanding and class-level for each quiz that teachers conduct. The teacher can also download the report in the form of a spreadsheet in Microsoft Excel.
(6) **Quiz Customization:** Teachers can customize their quiz session in multiple options to consider the level of competition, speed, and other factors

There are also settings including question and game which teachers can use to create a quiz that they want or represent teachers' goal.

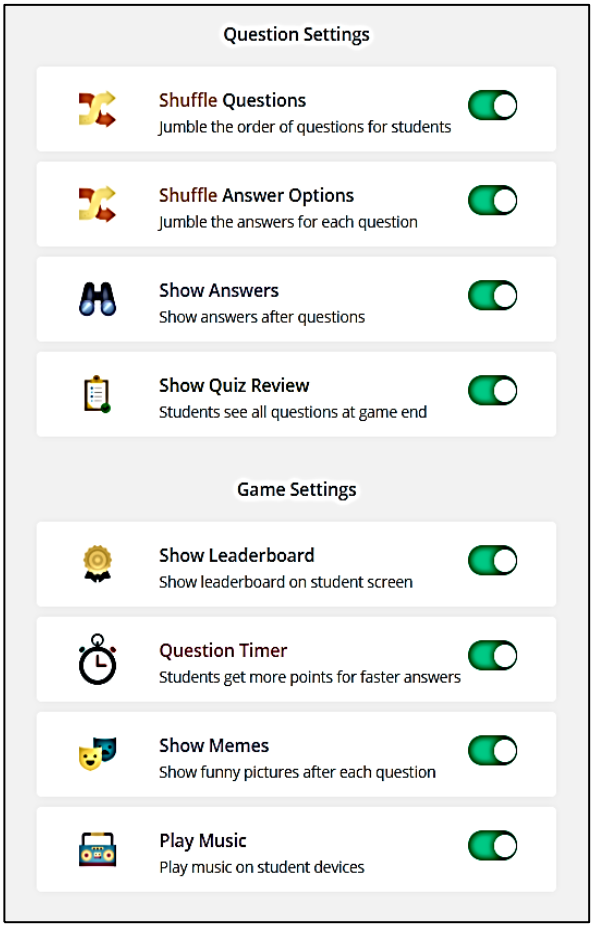

Figure 1. Questions settings of Quizizz

2.5. Attitude

According to Sharma (2013), attitude is defined as a complex mental state including beliefs, values, feelings, and personalities to act in certain ways. It is kind of a hypothetical construct representing an individual's degree of dislike or like for something. There are two kinds of attitudes namely positive or negative views of a person, place, thing, or event. Attitude also involves biases, prejudices, appreciation, and the state of readiness in acting and reacting. It is kinds of the variable inferred from behaviors both nonverbal and verbal responses. The concept of attitudes always relates to how individuals think, act and behave. There should be strong implications for the students, teachers, the groups with which individual relates and the whole school system. Attitude is created as the result of learning experiences such as parents', teachers, and friends' opinion.

Eagly and Chaiken in Karr (2011) defined that attitude as the representative of the psychological tendency expressed by evaluating a specific entity of favor and disfavor. Similar to Rokeach in Karr (2011) stating that the concept of attitude is essential to the psychology of personality. The attitude was theorized as comprising of three components such as a cognitive, affective and behavioral component.

Furthermore, Jain (2015) stated that attitude is an important factor in the teaching-learning process. Attitude is a characteristic of a set of conditions that are symptomatic to the individual capacity to obtain with some knowledge or skill or a set of response, specific training in a given field (Bingam in Jain, 2015). Henceforth, it is really useful for the teacher to understand students' attitude to create a good teaching-learning process.

To conclude, attitude is a complex mental state including affective, cognitive, and behavioral aspects of an individual toward another place, person, thing or event. According to Eagly and Chaiken in Jain (2015), affective component is in the relation with to what the participant feels concerning the attitudinal object. There are several components of affective namely likeness, confidence, anxiety, and motivation. Cognitive aspect regards the individual's opinion (belief/disbelief) on the attitudinal object. It includes beliefs, thoughts, and evaluation. The behavioral aspect of attitude regards with a verbal/non-verbal behavioral tendency by an individual comprising of actions or noticeable responses to attitudinal objects. The attitude is able to be either positive or negative.

3. Method

This research aimed at exploring the students' attitude toward Quizizz for assessing whether or not it would reduce the students' test anxiety. This study was conducted in an English course and the subject grammar structure. The respondents of this research were university students. There were 14 students participated in this research. Furthermore, the sample selected based on some criteria which are it is called purposive sampling. According to Arikunto in Suryabrata (2003), purposive sampling is the method of choosing a sample by taking subject not based on the level or area, but based on the particular purpose. The sample of the study was the students who got a good score in English structure subject.

The empirical data were gained through observation, in-depth interview and questionnaire. The observation showed the condition of the class during teaching-learning process and the questionnaire showed students' opinion about the use of Quizizz for assessment. Additionally, in-depth interview showed detail opinion of the respondents about the use of Quizizz for assessment. It was used to be a verbal justification for the respondents for what the researcher missed as conducting observation in the classroom (Widodo in Sumardi, 2017). The data were analyzed qualitatively as followed with the interpretative enterprise.

4. Finding and discussion

4.1. Students' test anxiety Category

The test is probably affectionate to students' psychological aspect namely anxiety. The students' test anxiety is able to investigate by using questionnaires adopted from Richard Driscoll which is proved valid by several experts. Thus, the researcher decided using this questionnaire. The test anxiety scales are categorized into 6 categories namely Comfortably low test anxiety, Normal or average test anxiety, High normal test anxiety, Moderately high, High test anxiety, and Extremely high anxiety. There are 10 items which the researcher gave to the participants to know the category of students' test anxiety. From those 10 items deployed, there are two item aspects namely Incapacity and Worry. The items indicated with Incapacity (poor cognitive processing and memory loss) are the items number 1, 4, 5, 6, 8 & 10 and the items indicated with Worry (catastrophizing) are the items 2, 7, 3, 9.

From the data collected by the researcher with the questionnaire, the researchers could categorize the students' test anxiety. The data is as follows.

From the data collected, the mean score of all items is 3.05. To know the meaning of the score, the researcher uses the theory from Richard Driscoll (2007).

Table 3. the score of students' test anxiety

No.	Items	Mean
1.	The closer I am to a major exam, the harder it is for me to concentrate on the material.	3.214
2.	When I study, I worry that I will not remember the material on the exam.	2.857
3.	During important exams, I think that I am doing awful or that I may fail.	3
4.	I lose focus on important exams, and I cannot remember material that I knew before the exam.	2.714
5.	I finally remember the answer to exam questions after the exam is already over.	3.214
6.	I worry so much before a major exam that I am too worn out to do my best on the exam.	3.214
7.	I feel out of sorts or not really myself when I take important exams.	2.857
8.	I find that my mind sometimes wanders when I am taking important exams.	3
9.	After an exam, I worry about whether I did well enough.	3.214
10.	I struggle with writing assignments, or avoid them as long as I can. I feel that whatever I do will not be good enough.	3.214
	TOTAL	**3.05**

Table 4. *The meaning of students' test anxiety score*
Richard Driscoll (2007)

Mean score	Category of test anxiety
1.0—1.9	Comfortably low test anxiety
2.0—2.5	Normal or average test anxiety
2.5—2.9	High normal test anxiety
3.0—3.4	Moderately high (some items rated 4=high
3.5—3.9	High test anxiety (half or more of the items rated 4=high)
4.0—5.0	Extremely high anxiety (items rated 4=high and 5=extreme)

The score of students' test anxiety obtained 3.05 and as it was reflected to the category of test anxiety from Richard Driscoll (2007), it was categorized into Moderately high test anxiety because the score was in the range of 3.0—3.4. It means students still had any anxiety as they faced examination or test. Furthermore, the researcher would elaborate on the score to be more meaningful.

Students felt that they could not get a better understanding in answering questions in a test and they assumed that they had a bad memory in recalling what they have learned as facing a test or examination. It can be analyzed from questionnaires. Several students would lose concentration as the examination was closer (M=3.214) and they would remember as some answers to questions in a test after they completed the test (M=3.214). It caused them disappointed. Additionally, students' mind would wander as they took an important examination (M=3). Regarded with writing an assignment, students would lovely avoid as long as they could because they assumed that they felt whatever they did would not be good enough (M=3.214) and more students were worried so much before a major exam that they were too worn out to do their best on the exam (M=3.214). In addition, Students would not dominantly lose focus on the exam and would remember what they have learned before (M=2.714).

Furthermore, students tended to be a worry after facing examinations because they thought whether or not they did well enough on the exam (M=3.214). They also felt out of sorts or not really themselves when they took important exams (M=2.857). However, it was not dominant as well as when students studied, they would worry that they would not remember the material on the exam (M=2.857). At last, students thought that they were doing awful or that they might fail during the exam (M=3).

4.2. Students' attitudes toward Quizizz employment in the test

There are 7 items for the questionnaires including tree aspects (Affective, Cognitive and Behavior) to know whether students have positive or negative attitudes toward the Quizizz employment in a test.

Table 5. Students' attitude toward game elements to reduce test anxiety

Items	**Mean**
Students are interested in doing the test due to Quizizz employment	4.286

Students are confident in doing the test due to Quizizz employment	3.429
Students get more motivation in doing the test due to Quizizz	4.071
Students can improve their skills due to Quizizz employment in a test	4.429
Students believe that Quizizz employment is good to reduce test anxiety	3.786
Quizizz employment helps students to overcome the test anxiety	3.929
Students tend to do a test with Quizizz	3.643
TOTAL	3.94

The mean sore of the collected items is (M=3.94) and it is considered high. It means that students have positive attitudes toward Quizizz employment. In other words, Quizizz could reduce test anxiety in which the students had, moderately high test anxiety. Most of the students were interested in doing a test with Quizizz (M=4.286), because they could enjoy the test. A student said,

Quizizz was a good thing in a test because they would be able to enjoy the test. Many people would like it including children.

Students also felt that they had high motivations in doing the test well (M=4.071). It happens because of the element games which are available in the application. It is in line with Kim (2015) stated that gamification is able to enhance students' engagement, motivation and instruction.The game elements which motivate them are Time restriction/limit and meme. Time restriction is some task or challenge have specific time lime (Groh, 2012) and Meme is a concept or catchphrase or image that spread viral over the internet which sometimes contains joke (Miller, 2014; Joyce, 2010).

The elements of game are good because we are like playing game but in fact we are on the exam. As we answered the questions, we will compete with time. The faster we answer and correct, the better the score we will get. Additionally, there are memes with funny pictures and writings showing right after we answer the question and it makes us motivated.

As a result of high motivation, it influences the students' confidence in doing the test or exam. Avtgis (2001) stated that there is a relationship between students' motivation and students' confidence. They were confident (M= 3.429) due to the points which will be obtained directly after they answer the questions. The points will be dynamic depending on how fast the answer. Thus, higher points will make students more confident. It makes students try to encourage to do (Groh, 2012).

We are able to be confident to answer the questions as we can get points as we answer correctly. It can make us challenged to compete with our friends who are among us achieving more points in a test or exam.

Because students had positive confidence toward the test with Quizizz, it automatically reduces students anxiety (M= 3.786). They assumed that the test is like game thus they enjoyed doing the test as if they play game. Desrochers et.al. (2017) stated that a game approach is a kind of assessment which may students' motivation compared to traditional testing. Most of the Indonesian students like playing the game. It is indicated that Indonesian players of Mobile legends are almost 50 percent of 4 million players all over the world (Sunarto, et. al, 2019).

We are not anxious enough in doing the test because the test looks like a game. So, we like to do it as if playing a game.

Besides enhancing students' motivation and confidence, the Quizizz also helps students improving their skills related to the subject tested (M=4.429). They took the advantages of test report which they would get it shortly after the test was over. The system of Quizizz will record and analyze students answer really fast in detail including the time taken to answer the test, the points and showing the incorrect answer students had. Students learnt from the mistake and try to get over it. Thus, in another test they can answer the same questions correctly. Elmahdi et.al. (2018) stated that immediate feedback leads to improve learning process as the immediate assessment improve students' participation; guarantee equal participation opportunities, save the learning time and create exciting learning process.

We can improve my skill by using a test port which is available. We learn from our mistakes because the test report shows our mistakes in answering the questions in details.

From all results in the form of score and arguments from students related the items in questionnaires, the most of the students tend to use Quizizz (M=3.643) because it has lots of advantages as mentioned in advance. Furthermore, the test with Quizizz is flexible to do. It means the students can do the test wherever they are at in same time. Karaman (2011) said that the convenience of the test came from the place and time flexibility, self-control and less anxiety. In addition, all assessment should be valid, fair, reliable and flexible (Booth et al., 2003). It is not like paper-based test Students need to be in the class to do the test.

It is flexible for us to do the test because we can do the test as we like. It is not like the test with paper. We should be in the class to do the test.

4.3. Game elements preference

The items of game elements above are about the students' preference toward game elements in Quizizz whether or not they are engaged with the test. There are six game elements which researcher use for the questionnaires because these six game elements are integrated in Quizizz. Thus, what were not in the Quizizz was not employed. The six-game elements could be seen in the following table.

Table 6. Students' preference toward game elements in test engagement

Game elements	Mean

Leader board	3.714
Time restriction	3.357
Meme	3.357
Profile	3.429
Test report	3.929
Points	4.357
TOTAL	3.69

From the data above mean score of collected items is 3.69. It means the six elements contributed in test engagement. Rama (2017) stated that game design elements had specific psychological effects such as enriching the experience, increasing intrinsic motivation and improving player engagement. To break down, the highest mean score for the game elements is Points which obtained (4.357). Furthermore, it is followed with Test report (3.929), Leader Board (3.714), Profile (3.49) and the last rank were Meme and Time restriction which both obtained same score (3.357). Those are the rank for students game element preference in Quizizz.

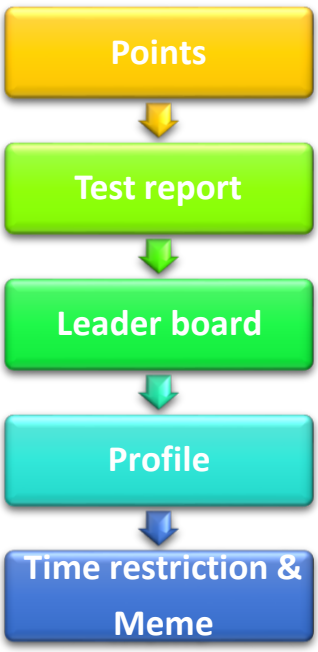

Figure 2. Game elements/game components ranking.

The above game elements ranking was ordered based on the function of each element contributing to the test engagement which students felt during the test. To be more understandable, it could be referred to the students' opinions on students' attitude towards Quizizz in reducing test anxiety.

5. Conclusion

The result of the study is that test caused students having moderately high test anxiety. The symptoms of the anxiety are able to see as lose focus and concentration in doing the exam. They used to feel that they would fail the test. However, the teacher had a strategy to reduce the test anxiety by using gamification based assessment and the application used was Quizizz. From the data analyzed that students preferred to do the test with Quizizz because they could enjoy the test like playing game. Furthermore, the elements of game are really important in this context because it made the test look like game with the all the dynamic and mechanic of the gamification. It can be drawn the inference that students will engage with what they like and love to do. Consequently, the teachers' duty is to create something related to educational purposes for students with what they are interested in. Thus, the chance to achieve purposes will be high.

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