P-ISSN 2527-5615
E-ISSN 2527-5607

KALAMATIKA Jurnal Pendidikan Matematika
Volume 7, No. 1, April 2022, pages 15-26

QUIZIZZ AS A HOTS-BASED ASSESSMENT MEDIA IN INCREASING STUDENTS' MOTIVATION

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ABSTRACT

This study describes the results of research on the implementation of the Quizizz application in learning with distance learning mode. It has three main objectives 1) to find out how to apply the Quizizz application as an assessment medium based on higher-order thinking skills; 2) the impact of the application of Quizizz as an assessment medium based on higher-order thinking skills on students' learning motivation; and 3) supporting and inhibiting factors for the implementation of Quizizz. This study used a qualitative descriptive approach and data were collected using observation, implementation, interviews, questionnaires, and documentation. The data analysis was carried out by grouping and presenting the data of 69 respondents and drawing conclusions. The use of Quizizz as an assessment medium based on HOT skills is carried out during daily tests, mid-semester, and end-semester tests. Based on the data, it was obtained information that the level of student learning motivation using Quizizz media based on higher-order thinking skills showed an average of 69.91. Furthermore, the supporting factor for the application of Quizizz media is that students are familiar with the use of Quizizz and the many tasks available on Quizizz. The inhibiting factor is that the internet connection at the student's residence still tends to be less supportive of online distance learning.

ARTICLE INFORMATION

Keywords

Quizizz
Student Motivation
HOTS

Article History

Submitted *Nov 24, 2021*
Revised *Apr 18, 2022*
Accepted *Apr 19, 2022*

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How to Cite

Priyandi, R., et al. (2022). Quizizz as a HOTS-Based Assessment Media in Increasing Students' Motivation. *Kalamatika: Jurnal Pendidikan Matematika*, *7*(1), 15-26.

https://doi.org/10.22236/KALAMATIKA.vol7no1.2022pp15-26

INTRODUCTION

Educators bear many responsibilities in their profession, one of which is applying effective learning in the classroom. One alternative way to achieve this is to optimize the use of technology as a medium in learning activities (Fadilah et al., 2021a). Moreover, in the last two years, almost all countries in the world are experiencing a COVID-19 pandemic that requires learning to be done remotely (online). This is very demanding, even forcing us to use technology in learning with various effective and interactive distance learning media to maximize the delivery of distance learning (Priyanda et al., 2021).

In the current pandemic, distance learning media can be used to minimize the spread of covid-19; in the future, distance learning is also important because it can save money, and time, and it is environmentally friendly (Hanafiah et al., 2020). Various distance learning media continue to be developed so that every teacher and student can carry out learning effectively. Distance learning can combine various media, such as in delivering material using zoom, Webex, or google meet and for giving practice assignments, discussions and homework can use Quizizz (Suciningsih, 2020).

Quizizz is an interactive web application that can be used as a game medium so that students are more interested in participating in learning. Quizizz can also be used to explain the material, create classes and display power points so that learning can be more effective, interactive, and controlled (Salsabila et al., 2020). Learning mathematics using the Quizizz learning media presents some challenges for students. With this media, students are required to answer quickly and precisely so that they need a different way to solve each problem, and this is believed to be able to continue to hone their higher-order thinking (HOT) skills. Students are high in solving existing problems, especially math problems (Kristanto & Yunianta, 2021; Setiyani et al., 2020). Learning mathematics using Quizizz also contributes to independence and learning outcomes (Khasanah & Lestari, 2021). This is because students can explore learning by working on various tasks, even though they are not from the class they are participating in.

Today's math problems must be solved more simply and differently to increase students' learning motivation to know more about learning mathematics so that later it can become the learning that students most like at various levels (Fadilah et al., 2021b). Much previous research has studied the use of distance learning media using Quizizz. Panggabean

& Harahap (2020) showed that the Quizizz contributed (influence) of 0.78 or the medium category effect on improving student learning outcomes in a department of mathematics education in Medan, North Sumatra. In their research on the geometry transformation lecture, the student responses after applying the Quizizz were: 71.42% gave a very good response. Other similar results were also obtained (Salsabila et al., 2020). They concluded that Quizizz is one media that can create a pleasant learning atmosphere but does not eliminate or reduce students' understanding because this media is interesting. Other researchers (Mulyati & Evendi, 2020) stated that math teachers could use Quizizz to improve student learning outcomes. There is an increase in student learning outcomes by 78%. Pusparani (2020) concluded that Quizizz has many features that teachers can use for learning evaluation activities. She reported an increase in student learning outcomes through Quizizz for learning evaluation activities from 37.5% to 62.5% in the first cycle, the Quizizz media was declared efficient for teachers and students because it was easy to use, more efficient in using paper (paperless), and could be done anywhere and anytime. The Quizizz presents the problem with ease by analyzing the results of the detailed answers to help teachers or lecturers carry out the assessment (Darmawan et al., 2020).

Various previous findings revealed that Quizizz can improve student learning outcomes and is effectively used in distance learning or online. However, they have not discussed Quizzes as an assessment medium based on high order thinking skills in improving learning motivation. It is important to study to increase students' learning motivation while studying remotely and hone students' HOT skills. It is a strong background why researchers are interested in implementing Quizizz as an assessment media based on high order thinking skills in improving student learning motivation.

Higher Order Thinking Skills (HOTS) is an assessment instrument used to predict students' competence to think at a higher level, namely reasoning skills. It is not only memorizing but also conveying and redefining what has been understood (Hamidah & Wulandari, 2021). In addition, globally, Indonesian students have low-level thinking skills based on the Program for International Student Assessment (PISA) examination by the Organization for Economic Co-operation and Development (OECD). it was concluded that Indonesian students are in position 64 out of 70 countries in science and math abilities (Islam & Syarif, 2018). This condition poses a big challenge for educators in enhancing their teaching

skills to improve the quality of student learning according to the demands of education; every teacher must be active and innovative in delivering learning. In addition to the low level of students' thinking, especially in science and mathematics, online learning also reduces students' learning motivation. One of the efforts to increase students' learning motivation in understanding concrete mathematics with intellectual abilities is to actively involve students in playing activities while learning mathematics according to the material and level of students' intellectual abilities (Syahputri et al., 2021).

Learning motivation is a factor that determines learning outcomes. The importance of motivation was also conveyed by (Tetteh, 2015). It is stated that motivation has a significant effect on learning outcomes. The pandemic period presents a challenge for teachers to increase student learning motivation. Students' learning motivation has significantly declined, especially in distance learning (Bakti et al., 2021). Lack of student learning motivation is also seen in students of mathematics education study program, faculty of teacher training and education science. Students are not ready to learn. Being late, less engaged in discussion, skipping assignments well and not submitting assignments on time are indicators that distance learning reduces students' learning motivation (Sumargiyani et al., 2022). It is a collective responsibility, especially for educators. Educators must provide learning that, can improve students' HOTS and learning motivation. Thus, a learning media that is easy to use and entertain students in learning, such as Quizizz. It can be used as an interactive learning media and game-based learning combined with other distance tools such as zoom and Webex.

METHOD

This research was conducted online and offline. The research subject was students from semester II to semester VI of the Mathematics Education Study Program, Faculty of Teacher Training and Education, Universitas Samudra (69 students). And the focus of this research is (1) how to implement Quizizz as an assessment medium based on high order thinking skills, (2) how is the impact of implementing Quizizz as an assessment medium based on high order thinking skills on student learning motivation, (3) what factors can support and hinder the implementation of Quizizz as an assessment media based on high order thinking skills on student learning motivation. This study uses a qualitative descriptive approach, where the research results are presented in descriptive words such as information. The data collection method is conducted through observation, implementation, interviews, questionnaires, and

documentation. Then the data analysis technique is carried out by grouping the data, presenting the data, and drawing conclusions. Here are the stages in the research:

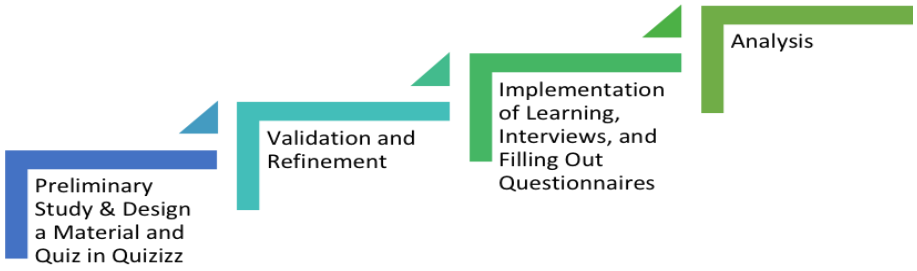

Figure 1. Research Stages

Preliminary

At this stage, the researcher conducted a preliminary analysis in the form of content analysis and needs analysis, adopting part of design research (Ihsan & Karjanto, 2019; Plomp, 2013). The content analysis is carried out in the form of reviewing the basic statistics course material (First Year), Mathematical Statistics (Second Year), and Statistical Methods (Third Year). The things that are analyzed are the curriculum objectives in each course and the relevance of the course material with the use of Quizizz. In the needs analysis, what is studied is the relevance of the lecture material, application and characteristics of Quizizz, with the concept of learning based on student motivation, which refers to (Duffin et al., 2020; Firdaus & Isnaeni, 2018; Oh et al., 2020; Schumacher & Ifenthaler, 2018). The results of these analyzes become a reference in the preparation of the Quizizz implementation design in learning activities.

Validation and Refinement

To see the impact of implementing Quizizz as an assessment media based on HOTS on student learning motivation, the researchers implemented a validated instrument and analyzed the assessment media based on HOT skills on student learning motivation. The results of the validation are used as a reference for the improvement and development of the implementation design (Van den Akker et al., 2013). At this stage, the researcher also provides a student learning motivation questionnaire when distance learning uses the Quizizz through google

form and then analyzes the data, Table 1 shows the student motivational instrument using the Quizizz (Napitupulu, 2018).

Table 1. Student Learning Motivation Questionnaire using Quizizz

Indicators	Description
Excited when the lecturer gives lecture material via Quiziz	Positive
Motivated to study harder after the lecturer gave lecture material using Quizizz	Positive
Enthusiastic about learning and answering questions when presented with animated images on Quizizz	Positive
Find it helpful to understand the use of media assisted by Quizizz	Positive
Feeling the Quizizz used is too complicated and confusing	Negative
Feel the quiz media is the right medium for doing Quizizz and other tasks	Positive
Get new experiences by using Quizizz	Positive
Want to learn the use of Quizizz on all materials	Positive
Not interested in learning if you use Quizizz in delivering material	Negative
Always listen to the lecturer's explanation and pay attention to the material presented	Positive
Easy to understand sentences and informational questions on Quizizz	Positive
Punctuation and descriptions displayed on the quiz media are not accurate	Negative
Presentation of material in Quizizz makes learning unattractive	Negative
The colour display between letters, numbers, and rankings on the Quizizz does not match.	Negative
Have difficulty learning the material using Quizizz	Negative
Feeling that the quiz media is not suitable for certain materials	Negative
Enthusiasm to get high scores when using Quizizz	Positive
Depressed while doing assignments through Quizizz	Negative
Happy to complete assignments and quizzes with Quizizz media because it's like a game, and the results are real-time	Positive
Actively participate in expressing opinions when answering questions using Quizizz	positive

The instrument uses a Likert scale from 1 to 5 for positive statements and 5 to 1 for negative statements. The following table 2 show assessment criteria were adopted (Sudjiono, 2012).

Table 2. Criteria for determining the level of student learning motivation

Formula	Criteria
M + 1,5. SD	Excellent
M + 0,5. SD	Good
M - 0,5. SD	Enough
M - 1,5. SD	Less
< M - 1,5. SD	Very Less

Implementation

At this implementation stage, the Quizizz design is applied as an assessment medium based on high order thinking skills. Implementation in class is carried out in three meetings (within three consecutive weeks), then during the midterm and final exams. To see the impact of the application of Quizizz as a medium for assessing higher-order thinking skills on students' learning motivation, at this stage the researchers implemented a validated instrument and analyzed the assessment media based on higher-order thinking skills on students' learning motivation. At this stage, the researcher also gave a questionnaire on student learning motivation when distance learning used Quizizz learning media through a Google form.

Analysis

At this stage, after conducting interviews, the researcher summarized the results and analyzed the results of the assessment of student learning motivation on the use of Quizizz and concluded what factors can support and hinder the implementation of Quizizz as a medium. Assessment based on HOT skills on student learning motivation. The interview questions focused on things that could support online learning, such as the Availability of online learning facilities, the ability to operate online learning tools, and the condition of the internet connection in the student's residence. The researcher groups students' answers into groups of answers that indicate support and groups of answers that indicate obstacles.

RESULT AND DISCUSSION

After carrying out the stages of research, several results and findings were obtained. The first finding obtained is the result of the validation of the assessment media using Quizizz. Then, the results are also obtained in the form of profiles or levels of student interest after experiencing learning using Quizizz. The third finding is the obtaining of information about the factors that can support and hinder learning that uses Quizizz as an assessment medium. In more detail, it will be explained in the following sub-sections

Implementation of Quizizz as an assessment Skills

Prior to implementing Quizizz as an assessment media based on high order thinking skills, the researchers validated the assessment media based on high order thinking skills using expert judgement. The experts consisted of four parties, namely linguists, material experts, and media experts, in more detail detailed validation results by experts can be seen in the following Table 3.

Table 3. Validator Assessment Results

Validator	Percentage Assessment	Criteria
Language	86%	Very Strong
Material	94%	Very Strong
Media	82%	Strong
Evaluation	92%	Very Strong
Average	88.5%	Very Strong

The average results of the assessment by experts showed that the assessment media instrument based on high order thinking skills was quite strong with a percentage of 88.5%, then when implementing the students were very enthusiastic in work given using Quizizz, this

was also seen from the results of filling in the student learning motivation instrument as an assessment medium. Based on high order thinking skills

The impact of implementing Quizizz as an assessment medium based on high order thinking skills on student

The results of student learning motivation on implementing Quizizz as an assessment medium based on high order thinking skills can be seen in the following Table 4.

Table 4. Result of Student Learning Motivation

Quality		Criteria	Percentage
M+1,5 SD = 78.00	>=78.00	Excellent	10%
M+0,5 SD = 72.58	72.62-77.99	Good	39%
M- 0,5 SD = 67.20	67.20-72.57	Enough	22%
M-1,5 SD = 61.79	61.79-67.19	Less	28%
	<61.79	Very less	1%
		Sum	100%
		Average	69.91

Table 4 shows the results regarding the motivation of 69 respondents to learn by using the Quizizz application. Almost half of all respondents have the motivation that is more than sufficient category. Reinforced with an average of 69.91, which is quite good.

Supporting and inhibiting student learning motivation

The stages of analysis carried out resulted in findings in the form of factors that could support, and factors that hindered the use of Quizizz. Supporting factors for implementing Quizizz as an assessment medium based on high order thinking skills include the availability of facilities and infrastructure needed by lecturers and students in accessing Quizizz, such as internet quotas, gadgets, mobile phones or laptops. Does not require a lot of internet credit like zoom and other media conferences. Quizizz is easy to use, and students are used to game-based learning media, such as Quizizz. Assessment results can be seen quickly without performing manual assessment analysis.

In addition to supporting factors, there are also inhibiting factors for implementing Quizizz as an assessment medium based on HOT skills. The assessment through Quizizz is online, either for uploading questions or the assessment itself thus it depends on the internet network. Lecturers cannot make quizzes, share questions, or give instructions to students. Likewise, students cannot receive instructions, cannot join through Quizizz, or cannot complete Quizizz until the signal is stable. The implementation of the live game takes place under the educator's supervision through the monitor screen. The lecturer must monitor the

assessment activities until all students complete their assignments. In addition, this application can be used simultaneously with two accounts. The ranking of students easily goes up and down, making it difficult to know who is accessing two accounts. It is deemed necessary to pay attention to these obstacles so that learning with Quizizz implementation can be more optimal.

CONCLUSION

Some conclusions are drawn from the data analysis. First, the average result of the expert validator's assessment of the media instrument for assessing HOT skills is high (88.5%). This indicates that the instrument can be used without revision. Second, the average student motivation after applying Quizizz as a HOTS-based assessment medium is 69.91 (fairly good). Third, the existence of facilities and infrastructure in online learning is very supportive of learning by using Quizizz which is rich in the exploration of practice material and questions. Meanwhile, so far, the obstacle is the students' internet connection. For those living in areas with a poor internet connection, learning with Quizizz is not optimal.

ACKNOWLEDGMENTS

We express our gratitude to all who have participated in this research, especially the students of the Mathematics Education at Universitas Samudra who have been willing to become subjects in this research.

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