



# Utilization of the Paper Mode Quizizz Game in Mathematics Learning at Elementary School

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## ABSTRACT

Mathematics is a subject that is often considered difficult by most students at the elementary school level. It must be addressed early because it will affect the child in the next academic career. Educational technology has become one of the solutions that can help improve mathematics learning. One of the technological tools that has attracted attention in recent years is the Quizizz game. The purpose of this study was to explore the use of the paper mode Quizizz game in learning mathematics in elementary schools. The research method used is qualitative research with a case study approach. This research approach uses a variety of research instruments, including class observations, interviews with teachers and students, as well as document analysis. The subjects of this study were the sixth grade students of SDN 1 Donotirto. The results showed an increase in students' understanding of difficult mathematical concepts. They have the opportunity to practice actively and collaborate with their friends in solving math problems. Quizizz games in paper mode can increase students' interest in mathematics. Students show higher levels of engagement during learning and have greater motivation to complete math assignments. Quizizz paper mode makes it easy for teachers to give interesting and fun quizzes offline. Teachers also reported that using the Quizizz paper mode made it easier to measure student understanding and provide real-time feedback.

**Keywords:** *Quizizz, paper mode, mathematics, elementary school*

## 1. INTRODUCTION

Mathematics is a subject that is often considered difficult by most students at the elementary school level. Low interest in mathematics and an inadequate level of understanding is often a problem in the learning process. Mathematics is considered a science that is difficult to understand because it is abstract, not only by students at the elementary school level but even by students at tertiary institutions. However, if further investigated, children's learning difficulties are a problem that must be dealt with early on because it will affect children in their further academic careers.

As a result of continuing learning difficulties in mathematics left alone, children will be less interested in learning mathematics. Mathematics will continue to be a frightening specter for children. Children are always bored and easily bored in learning mathematics. If you look at how related mathematics is in everyday life, it can be predicted how difficult it will be for children in their social life if they cannot understand mathematics well.

In fact, mathematics is not just a matter of calculations. According to Johnson and Myklebust [1], mathematics is a symbolic language whose practical function is to express quantitative and spatial relationships while its theoretical function is to facilitate thinking. Cockroft [1] argues that mathematics needs to be taught to students because (1) it is always used in all aspects of life; (2) all fields of study require appropriate mathematical skills; (3) is a means of communication that is strong, concise and clear; (4) can be used to present information in a variety of ways; (5) improve the ability to think logically, accuracy, and spatial sense (spatial sense); and (6) giving satisfaction to efforts to solve challenging problems. The various reasons for the need for schools to teach mathematics to students can essentially be concluded because of problems in everyday life. Therefore, efforts are needed to increase students' interest and understanding of mathematics at the elementary school level.

Educational technology has become one of the solutions that can help improve mathematics learning.

One of the technological tools that has attracted attention in recent years is the Quizizz game. Quizizz is one of the various forms of learning media, which is very suitable for use in the learning process in elementary schools. Media quiz-quizizz is one of the learning media in which there are various features, including a game feature, which is very suitable for elementary school-aged children to use, besides that there are other features including the form of play in play games. Media quiziz-quizizz is one of the learning media that can display in the form of images. Where, this media is very suitable for students at elementary school age. Media quizzes can also provide a feature so students can be interested, so that students will like learning with media quizzes. Quiz-quizizz is indeed made with attractive features and appearance, so that students like and enjoy using it. The use of quiz-quizizz media is very easy to understand and apply in learning [2].

[12] states information that the use of student learning concentration can be increased by evaluating learning using quizizz. The results of research conducted by [15] show that Quizizz is a creative, innovative and fun learning medium and is effectively used in learning mathematics. Based on previous research, it has shown the positive potential of using Quizizz games in learning mathematics. However, most of this research focuses on using Quizizz games in digital formats. Meanwhile, the paper mode of this game still needs to be explored further in the context of learning mathematics in elementary schools.

## 2. RESEARCH METHOD

This research uses a qualitative approach with a case study approach. This approach was chosen because it provides an in-depth understanding of the use of the Quizizz game in paper mode in teaching mathematics in elementary schools. Case studies allow researchers to explore perceptions, experiences, and the impact of using these games on students and teachers in a more detailed context.

Data collection techniques were carried out by class observation, interviews, and document analysis. In class observation: Researchers made direct observations on the mathematics learning process which involved the use of the paper mode Quizizz game. These observations include students' interactions with games, their level of involvement, and their reactions to learning using this technology. Interviews were conducted with math teachers and a number of students who were involved in learning using the paper mode Quizizz game. Interviews with teachers will discuss their preparation, implementation, and views on using this game. Interviews with students will focus on their experiences during learning with the game. Document analysis was carried out on learning materials, math problems used in

the Quizizz game, and notes that were relevant to understanding the learning context.

The research subjects consisted of students and teachers of class VI at SDN 1 Donotirto. The selection of subjects was carried out by considering the existence of Quizizz games in paper mode in the school curriculum and the willingness of teachers to participate in research.

## 3. RESULTS AND DISCUSSION

### 3.1. Utilization of the Paper Mode Quizizz Game

Utilization of digital learning media in schools, especially in elementary schools, can be done by using the quizizz application. Quizizz is a fun interactive game-based learning application. *Quizizz* is an educational application that is based on educational games and can be used as a learning medium or evaluation tool, through this students can become more interested and motivated to carry out teaching and learning activities.

In the learning process using Quizizz this can increase student interest when studying the material to be given and also students are more active in asking questions in class and outside class, this application can also be accessed with minimal internet quota, through the Quizizz application students will feel challenged to show the best results, because there is a system that shows the ranking and grades of students who have filled out the questions given.

The results of observing the use of the Quizizz Application as a digital-based learning media in class VI at SDN 1 Donotirto consist of several stages as follows:

#### 3.1.1. Planning

In planning activities, the teacher prepares a Learning Implementation Plan (RPP) which contains the learning process using quizizz media. At this stage the teacher prepares quizizz quizzes that will be used in learning. This is done by:

##### 3.1.1.1. Setting up a computer / laptop that is accessible to the internet

Create a quizizz account using the guru.belajar.id account. Creating a quizizz account using the guru.belajar.id account has the advantage of having access permission to use features for free including paper mode in quizizz. Account creation can be done via the link <http://quizizz.com> then linked to the guru.belajar.id account.



**Figure 1.** Creating a quizizz account using the guru.belajar.id account

### 3.1.1.2. Setting up a math quiz on quizizz

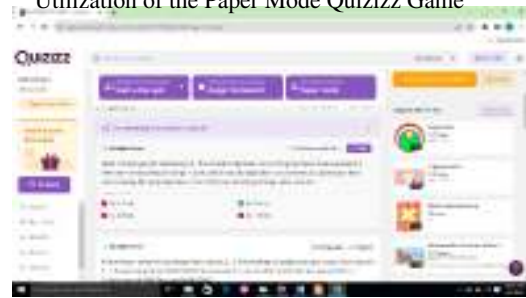
Creating a new quiz on quizizz can be done by steps as follows: Click menu *create new quiz* on the left, Fill in the name of the quiz, Select Language, *Add quiz image*, Select *save*. Click *create new question* to start asking questions. *Single answer* is a question with one correct answer. *Multy select* is a question with more than one correct answer. When you have finished creating questions, click *finish quiz* then fill *grade* and *choose relevance subject*. In addition to creating their own questions, teachers can also use or import questions available on the Quizizz application by using the menu *Teleport Question*.



**Figure 2.** The process of making a math quiz

### 3.1.1.3. Prepare paper containing barcode quizizz answers in paper mode for students

When the quiz is finished, select the paper mode menu to use the paper mode quizizz. Then print the barcode according to the number of students. In this study a number of 27 different barcodes were prepared. This is because the number of grade VI students at SDN 1 Donotirto is 27 children. The advantage of using paper mode is that students can answer quizzes without an internet network. This can minimize the use of computers / gadgets and the internet for schools that still lack facilities and infrastructure.



**Figure 3.** Paper mode on Quizizz



**Figure 4.** Barcode on paper mode quizizz

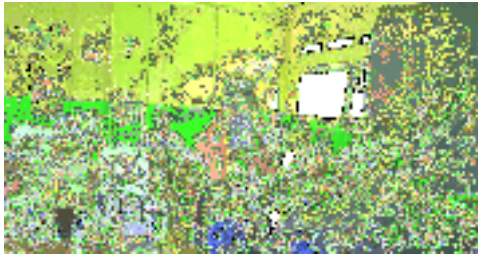
### **3.1.2. Process**

Quizizz "Paper mode" is a new feature that can be used in quizizz. With this mode, students can access answers on quizzes using paper containing barcode answers A, B, C, or D. This mode can be used if the quizizz used by the teacher is in the form of premier/paid quizizz. However, by utilizing the guru.belajar.id account, teachers can access these features for free. This is of course the right solution for teachers, especially grade VI teachers in providing mathematics learning.

The following is the learning process using quizizz carried out by the teacher in "paper mode":

- ✓ The teacher distributes sheets of paper containing barcodes for A/B/C/D answers.
- ✓ The teacher displays math questions and answer choices on the LCD screen.
- ✓ Students determine the appropriate answer by showing the answer choice barcode.
- ✓ The teacher scans student answers through the quizizz application on gadgets/cell phones.
- ✓ After the process of scanning the answer barcode is complete, the student's grades and answers will appear on the LCD screen.
- ✓ On the screen will appear student scores based on the score acquisition ranking.

The following is a video of learning mathematics in class VI at SDN 1 Donotirto using the paper mode quizizz: <https://youtu.be/zcsbokDcAZU>.



**Figure 5.** Use of paper mode quizizz



**Figure 6.** Use of paper mode quizizz



**Figure 7.** Use of paper mode quizizz

### 3.1.3. Evaluation

After the results of students' daily tests appear, they will be displayed on the notice board and students with low scores will increase their learning motivation to be even more active.

### 3.1.4. Discussion

Discussions are also carried out by the teacher so that students become active. The teacher also gives questions and feedback to students so that students who don't understand the material can be identified and explained again by the teacher. From the data obtained by the researcher, the application or use of Quizizz is very interesting, fun and also very effective for increasing the motivation to learn mathematics in grade VI students at SDN 1 Donotirto.

## 3.2. The Effect of Using the Paper Mode Quizizz Game on Students

The results showed that the use of the Quizizz game in paper mode had a positive effect on students' interest in mathematics. During the learning process, students show higher engagement compared to conventional learning methods. They looked more enthusiastic in answering the math questions presented in the form of a game. The teacher also noted that students were more enthusiastic and motivated to participate in learning with the paper mode Quizizz game.

Utilization of paper mode quizizz has a positive influence on student interest. Game elements in learning, such as those in the Quizizz game, can increase student interest in certain subjects. Learning that is more interactive, competitive, and fun can change students' perceptions of mathematics from something that is scary to something that is interesting. This indicates that the paper mode Quizizz game can be an effective tool in increasing students' interest in mathematics at the elementary school level.

## 3.3. Students' Understanding of Mathematical Concepts

This study also found an increase in students' understanding of difficult mathematical concepts. While using the paper mode Quizizz game, students have the opportunity to practice actively. They can try to solve problems with the help of their friends, discuss and correct their own mistakes. As a result, their understanding of math material increased significantly. Teachers reported that students were better able to apply these concepts in different contexts after using the paper mode Quizizz game.

Increasing students' understanding of difficult mathematical concepts is also an important finding. Paper mode Quizizz games give students the opportunity to practice actively, collaborate with their friends, and receive instant feedback. This allows them to overcome difficulties in understanding mathematics more effectively. Teachers can also more easily identify areas that need additional attention and provide appropriate guidance to students.

The results of this study have several important implications in the context of learning mathematics in elementary schools:

### 3.3.1. Utilization of Educational Technology

The use of the paper-mode Quizizz game can be an effective example of using educational technology to improve mathematics learning. Teachers may consider integrating these games into their teaching to make learning more interactive.

### 3.3.2. Improved Student Comprehension

Paper mode Quizizz games can be a useful tool in helping students understand difficult math concepts. This can help students build a stronger foundation in mathematics.

### 3.3.3. Increased Student Interest

This game can be used to increase student interest in mathematics. By making learning more fun, students may be more motivated to learn and develop their math skills.

## 4. CONCLUSION

This study shows that the use of paper mode Quizizz games in teaching mathematics in elementary schools has a positive influence on students' interest and their understanding of mathematical concepts. Quizizz paper mode is done offline so that it makes it easy for schools with minimal internet access to make learning interesting and fun for students. The use of educational technology like this can be an effective strategy to improve the quality of learning mathematics at the elementary school level. In order to understand the further implications and generalizability of these findings, further research can be conducted involving a larger number of primary schools.

## AUTHORS' CONTRIBUTIONS

The division of tasks in writing articles, as follows:  
First author: carries out research and writes the research results in the form of a research article. Second author: discussing the results of research and writing research articles with the first author.

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