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IMPLEMENTATION OF QUIZIZZES IN IMPROVING ELEMENTARY STUDENTS' COMPUTATIONAL THINKING IN MATHEMATICS LEARNING

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ABSTRACT

This research aims to explore the implementation of Quizizz media in improving primary school students' computational thinking skills in learning mathematics. A qualitative approach was used with a case study method, involving classroom observation, in-depth interviews with teachers, and analysis of student learning outcomes. The research subjects were elementary school students SD XYZ in Medan City. who were involved in using Quizizz as a learning tool. The results showed that the integration of Quizizz effectively increased students' learning motivation, strengthened understanding of mathematical concepts, and developed computational thinking skills, such as decomposition, abstraction, pattern recognition, and algorithms. Teachers also reported that Quizizz facilitated interactive and problem-solving orientated learning. This research emphasises the importance of using innovative educational technology in improving the quality of mathematics learning at the primary school level.

Keywords: *Quizizz, Computational Thinking, Primary School*

INTRODUCTION

Advances in information and communication technology (ICT) in the current digital era require education to continue to innovate, especially in the development of learning methods and media that are able to facilitate 21st century skills. One important skill that needs to be developed early on is computational thinking (CT). This ability includes logical thinking, problem solving, pattern recognition, decomposition, and algorithms, which are fundamental in understanding and solving complex challenges in various fields, especially in science, technology, and mathematics.

The computational thinking ability of elementary school students in Indonesia is still relatively low (Astini, 2020); (Anita et al., 2021). This is due to several factors, such as conventional learning methods, lack of interactive learning media, and teachers' lack of understanding on how to integrate CT into the learning process (Widyantara, 2020); (Dewi, 2020). Platforms used to facilitate and enhance the teaching and learning process. The use of appropriate media can help make complex concepts easier to understand, engage students, and support a variety of learning styles (Desania et al., 2020); (Fuad et al., 2023); (Juliana et al., 2023). Innovations are needed in learning media that can increase student engagement and help them develop these skills (Mayang et al., 2018); (Wahyuni et al., n.d.).

One of the potential learning media to be implemented is Quizizz. Quizizz is a game-based learning platform that allows students to learn while playing quizzes interactively (Sari et al., 2019); (Yusnita et al., 2023); (Haddar & Juliano, 2021). Quizizz is able to increase students' learning motivation, as well as encourage them to think critically and systematically in answering questions (Halimah et al., 2023); (Anindita Dwi Ratriningrum, 2022). This research focuses on developing Quizizz media to improve computational thinking of elementary school students. Through this research, it is hoped that Quizizz-based learning media can be an innovative solution in improving students' thinking skills, especially in facing challenges in the digital era.

METHODS

This research uses a qualitative approach with descriptive methods to describe the Quizizz media process and its impact on improving computational thinking of elementary school students. This method was chosen because it can provide an in-depth understanding of the process, challenges, and results of implementing Quizizz-based learning media. (Maharani et al., 2023).

RESULTS AND DISCUSSION

Quizizz Media Development Process.

The development of Quizizz media was carried out through several stages, starting from needs analysis to classroom implementation. Based on the results of observations and interviews with teachers, it was found that students need interactive learning media to increase their involvement in the learning process, especially in understanding basic mathematics and logic concepts. Teachers also stated that interactive quiz-based learning helps students to be more focused and motivated. (Halimah et al., 2023). Content Design: The quizzes were developed with a focus on the four components of computational thinking: decomposition, pattern recognition, abstraction, and algorithms. Each quiz consists of questions that require students to identify patterns, solve simple problems, and apply systematic logic.

Implementation of Quizizz Media in the Classroom of Quizizz was carried out in three learning sessions involving grade V students. Each session focuses on different materials, but with the same approach in developing computational thinking skills (Sudarta, 2022). Students are more active in participating during the learning process. They compete healthily to get the highest score, which increases their learning motivation. Quizizzes allow students to learn from their mistakes. After completing the quiz, students can see the explanation of the correct answer, which helps them understand the concept better.

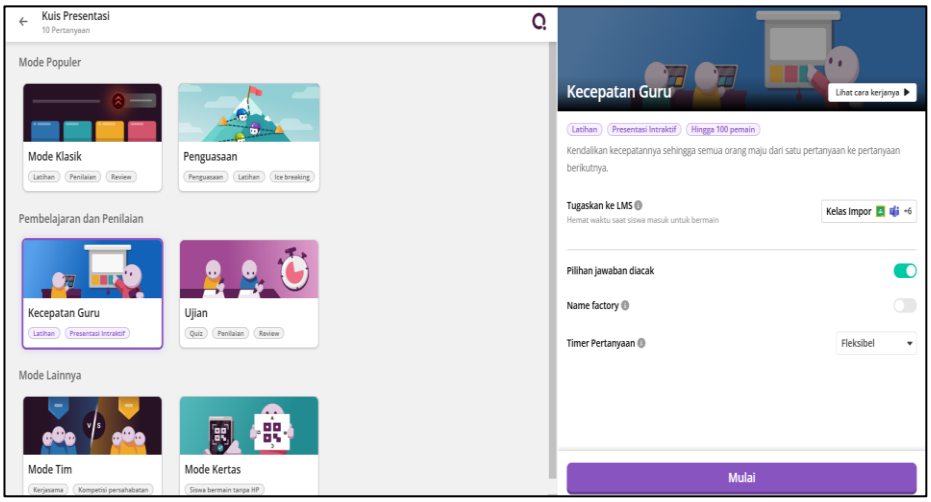

Figure: 1. Aplication of Quizziz

Quizizz is an excellent application for learning. It offers a gamified learning experience that makes studying engaging and fun for both students and educators. Quizizz's Advantage for Learning Platform turns quizzes into game-like experiences with timers, leaderboards, and fun animations.

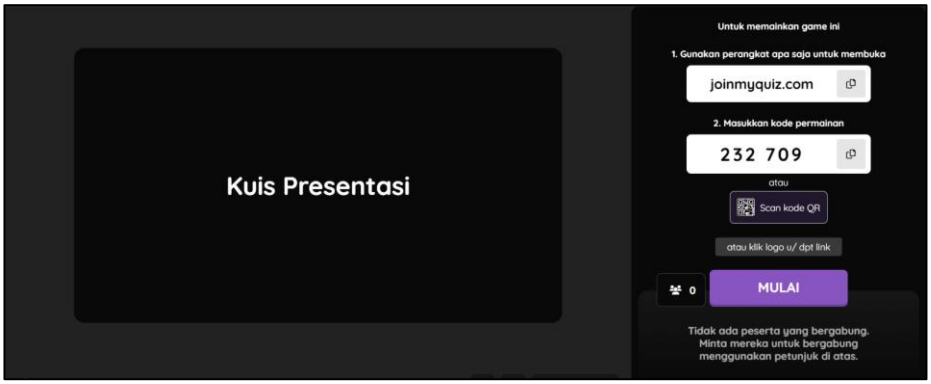

Figure: 2. Start Learning by Quizizz

Students enter the code to start the quiz session in Quizizz, making sure that every digit of the code typed is correct, so that it can be directly connected to the challenge that the teacher has prepared. This stage is an important first step to working on challenging computational thinking questions.

Figure: 3. Take a Quiz

In this stage, students work on the first stage of Computational Thinking questions in the Quizizz platform. students are invited to think logically and structurally to solve mathematical challenges that are designed interactively.

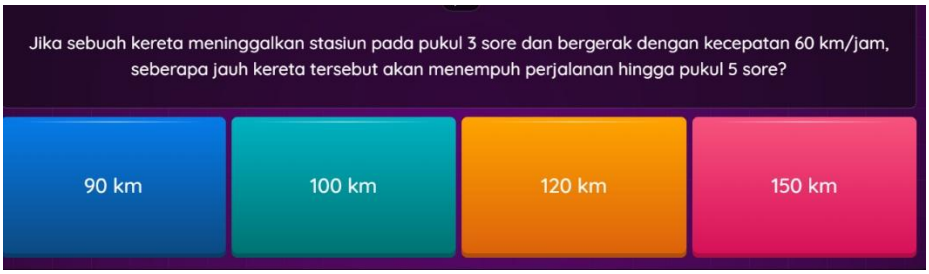

Figure: 4. Take a Quiz

Likewise, for working on the second problem, students are invited to think about solving problems from the problems given.

Figure: 5. Take a Quiz

In the following problem, students are invited to determine the answer to a patterned or sequential problem.

Discussion

Through the Quiziz application, students gain new knowledge so that learning runs conducively and enjoyably. Quizizz in learning is effective in improving students' computational thinking skills at the elementary school level. Quizizz not only increases learning motivation but also encourages students to think more regularly and logically (Salsabila et al., 2020); This is in line with the constructivist learning theory which states that learning that involves interaction and active activities can improve students' understanding (Lim, 2021). Quizizz is an online platform that is free for everyone—not just teachers but also students. With just one click, users can register for free and have unlimited access to various quizzes that are appropriate for their level. The quizzes available on the platform can be used by teachers as they wish and teachers can also create or design their own quizzes whenever they want.

Quizizz-based learning can make a significant contribution to improving elementary school students' computational thinking skills. Quizizz as an interactive quiz platform not only increases students' learning motivation

through a fun and competitive atmosphere, but also encourages them to think logically, systematically, and analytically in solving the challenges given. Students are better able to understand the concept of decomposition, recognize patterns, and compile algorithmic steps. In addition, this media also helps teachers in creating more dynamic and technology-based learning, in accordance with the demands of education in the digital era. However, the successful implementation of Quizizz requires adequate technological infrastructure support and teacher readiness to utilize this media effectively. Quizizz is an excellent tool for modern classrooms and distance learning environments. It balances fun and education, making it a valuable resource for teaching and learning. However, it is most effective when used as a complement to other teaching methods, not as a substitute. Quizizz can be an innovative solution in learning, especially to develop students' computational thinking skills, which are very important in preparing them to face the challenges of the 21st century.

CONCLUSION

Quizizz can indeed be an innovative solution in learning! Its combination of gamification, interactivity, and accessibility makes it a powerful tool for modern education. This research shows that the development and implementation of Quizizz-based learning media can make a significant contribution in improving computational thinking skills of elementary school students. Quizizz, as an interactive quiz platform, not only increases students' learning motivation through a fun and competitive atmosphere, but also encourages them to think logically, systematically, and analytically in solving the challenges given. Students are better able to understand the concept of decomposition, recognise patterns, and construct algorithmic steps. In addition, this media also helps teachers in creating more dynamic and technology-based learning, in accordance with the demands of education in the digital era. However, the successful implementation of Quizizz requires adequate technological infrastructure support and teacher readiness in utilising this media effectively. Quizizz-based learning can make a significant contribution to improving elementary school students' computational thinking skills. Quizizz as an interactive quiz platform not only increases students' learning motivation through a fun and competitive atmosphere, but also encourages them to think logically, systematically, and analytically in solving the challenges given. Students are better able to understand the concept of decomposition, recognize patterns, and compile algorithmic steps. In addition, this media also helps teachers in creating more dynamic and technology-based learning, in accordance with the demands of education in the digital era

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