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Weaving the Values of Pancasila and Mathematics Into Digital Stories: Exploring Student Experiences Through the Story Jumper Media

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Abstract

This study aims to explore students' experiences in linking mathematics and Pancasila values in a digital picture story project activity through Story Jumper media. A phenomenological approach was used to capture in-depth meanings during the story-making process based on students' creative ideas and experiences, including their feelings, thoughts, reflections, and challenges. In-depth interviews, digital story documentation and field notes were used to extract research data. The results showed that several themes in Pancasila and Mathematics emerged in the stories such as gotong royong and practicing the values in each precept in Pancasila, as well as whole number operations and the area of flat buildings. In addition, the learning experience provided a new discovery of meaning in learning for students and had an impact on the creative process in developing story ideas and motivating themselves as prospective teachers with character.

Keywords: pancasila; mathematics; digital story; story jumper

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Introduction

Mathematics is known as an exact science closely related to numbers, formulas, and logic. Although mathematics is a science rooted in real life (Utami et al., 2021), it is currently still taught as a separate science, far removed from the context of real life, moral values, and even character values that motivate students' critical and creative thinking (Brata & Mafulah, 2022).

In the process of learning mathematics in the classroom, the focus of students and teachers is often on the ability to calculate and solve problems, without touching on deeper aspects such as human values or nationality, even though education is currently required to provide a more holistic learning experience. This is a mandate embedded in the Merdeka Curriculum through the strengthening of the Pancasila Student Profile to shape students' character in addition to their cognitive understanding. Character education equips students with knowledge, cultural experiences, and behaviors based on life values derived from local and foreign cultures (Hartoyo, 2015). This character building is based on Pancasila values such as social justice, mutual cooperation, and humanity. In addition to the implementation of mathematics learning as a separate subject, Pancasila learning, which is incorporated into the Civics Education subject, currently still focuses on memorizing material and does not sufficiently facilitate students in critical thinking (Brata & Mafulah, 2022).

Students' understanding of mathematics in everyday life is still very minimal (Wulandari et al., 2020), especially when it comes to Pancasila. The view that mathematics is separate from Pancasila is clearly acknowledged by (Julaika & Mariana, 2018). Given the importance of integrating these two subjects, various methods can be used to incorporate mathematics and

Pancasila into learning. One of them is by linking mathematical concepts to stories that are close to life and rich in meaning. In this case, Story Jumper is an interesting alternative that can be used to train students to think logically in integrating mathematical concepts creatively and contextually into the values of Pancasila. By creating picture stories using Story Jumper, it provides space for students to experience more personal and meaningful learning. This learning experience will be valuable for students in the process of understanding their knowledge, both in mathematics and the values of Pancasila. In addition to Story Jumper having been proven to contribute positively to student learning motivation (Rameswara et al., 2019), this medium is also capable of improving writing skills (Mohammad, N. A., & Yamat, 2020) and reading skills (Bee Choo & Zainuddin, 2018) as a means of improving students' literacy and numeracy skills when composing stories that integrate mathematics.

Although various studies have revealed the integration of mathematics with other disciplines such as Islamic studies, the Quran, and culture (Abdussakir & Rosimanidar, 2017; Azmi & Salam, 2022; Maarif, 2015; Maya Nurjanah, 2022; Sugilar et al., 2019; Tijah, 2019), research that provides an overview of students' experiences in compiling digital stories through the Story Jumper media as a form of integration between mathematics learning and Pancasila values has not been specifically explored. Therefore, this study will explore in depth the experiences of students in linking mathematics and Pancasila values in a digital picture story project activity using the Story Jumper media. This study is expected to provide knowledge about students' ability to connect mathematics with Pancasila values based on the results of the project they have carried out using the Story Jumper media.

Method

This study uses a qualitative approach with a phenomenological method. Phenomenology is a philosophical approach that understands human experience directly without any external assumptions or theories (Tarumingkeng, 2024).The phenomenological approach was chosen because the main objective of this study was to explore and understand the subjective experiences of students in composing digital stories that integrate mathematical concepts and Pancasila values through the Story Jumper media. This method sought to capture the deepest meaning of their experiences, including the feelings, thoughts, reflections, and challenges they experienced during the process.

The subjects of this study were students majoring in mathematics education who had participated in learning activities involving the task of compiling digital stories using Story Jumper. Data were collected through: 1) In-depth interviews were conducted in a semi-structured manner to give the research subjects the freedom to express their experiences and views reflectively. 2) Documentation in the form of digital stories created by students using the Story Jumper platform. These documents will be analyzed as part of the data to understand the context and meaning constructed in the stories. 3) Field notes were used to record nonverbal responses, interview situations, and the researcher's reflections during the data collection process.

Results and Discussion

Based on in-depth interviews, documentation of digital story works, and field observations, a number of main themes were obtained that describe students' experiences in the process of compiling digital stories through the Story Jumper media. These themes reflect the emotional dynamics, reflective thinking processes, and integrative efforts made by students in linking mathematics with the values of Pancasila.

Mathematics and Pancasila Themes Explored in Digital Stories

The Pancasila theme explored in the digital stories that have been created includes Pancasila as a source of ethics. Meanwhile, the mathematics theme is integer operations. Both themes are illustrated through the mathematical problems presented in the Figure 1.

Figure 1. Initial Problems in the Story

This problem elicited various answers from students, shown in the Figure 2.

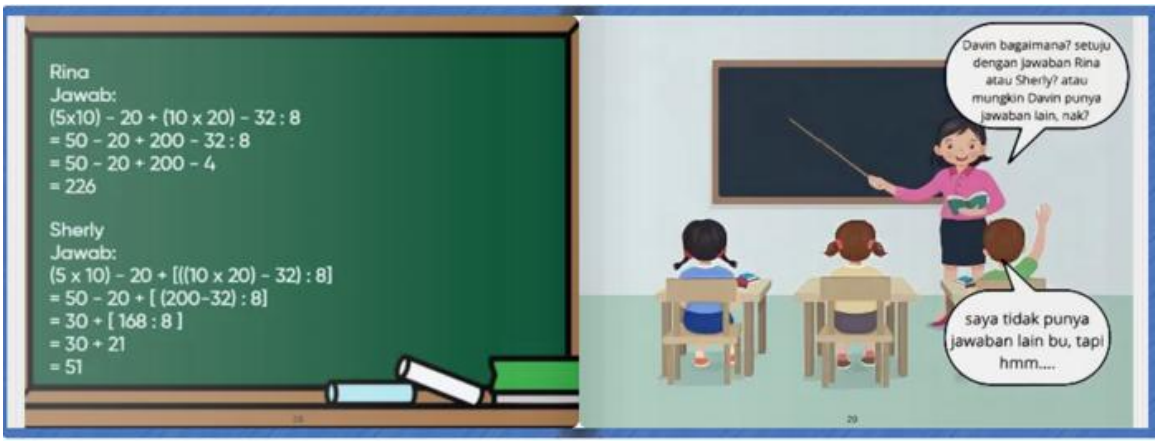

Figure 2. Students' Answers to Previous Questions

The answers from both students show the diversity of students' ways of thinking about how to solve a math problem. Based on the story that has been created, students have been able to relate how to have good ethics in dealing with differences of opinion. Everyone has the right to express their opinion politely, and this is protected in the 1945 Constitution, Article 23 E, paragraph 3 (UUD 1945 Pasal 23 E ayat 3).

Figure 3. Pancasila in Responding to Differences of Opinion

The second theme raised in the story is mutual cooperation, which reflects the third principle of Pancasila and is related to mathematics, namely the area of flat shapes and addition. Students apply mutual cooperation in solving problems that arise in society, which of course require mathematics in order to find solutions. The problem addressed is the mutual cooperation of a group of students in an effort to preserve the environment by buying new plants for the school yard because the previous plants had withered/died. They took the initiative to collect the money they had, as shown in the Figure 4.

Figure 4. fundraising narrative (1)

Next, using the data on the size of the garden to be planted, mathematical calculations are needed to decide how many plants need to be purchased based on the money that has been collected. The details can be seen in the Figure 5.

Figure 5. fundraising narrative (2)

In addition to the above themes, other Pancasila themes explored by students included nationalism, which was illustrated using stories in the flag ceremony and linked to simple calculations in the ceremony participants' lines.

Discovering New Meaning in Learning

Most students revealed that the process of creating digital stories made them see mathematics and Pancasila as two closely related subjects. They did not just think about how to calculate or solve problems, but began to ask, "What values can I teach from this concept?" or, through the context of real-world problems, such as the previously described example of park conservation efforts, they would think about what could be used to solve this problem. It turned out that in addition to calculating material requirements and costs, mutual cooperation was also needed to quickly resolve the issue.

"I realize that we can learn empathy through the problems we encounter in our lives" (Student 1).

This finding further strengthens the opinion that contextual and value-based learning can broaden students' perspectives and encourage them to think logically, ethically, and reflectively. In the activities that have been carried out, students have achieved a process of meaning discovery, which occurs when they themselves construct a concept in its entirety. This will have a positive impact on their responsibility for their actions (Kainde & Tahya, 2020).

The Creative Process of Developing Story Ideas

Many students admitted to experiencing difficulties and even confusion at the beginning of the story writing process, especially in finding the connection between mathematical concepts and Pancasila values. However, these obstacles sparked a process of deep reflection. They began to explore their personal experiences, social contexts, and real stories around them, which they then wove together into meaningful narratives.

"It took me a long time to think, 'What does mutual cooperation mean in mathematics learning?' But once I found the story, I actually understood the value more personally," (Student 2).

This process is costly because it requires reflective thinking to find the meaning of Pancasila values that must be incorporated into narrative stories while also relating them to mathematics. Although the work of some students is quite creative, many students still seem to have difficulty connecting mathematical concepts with Pancasila values. Some students feel they need more examples or guidance in this process.

"At first I thought it was like matching heaven and earth, two things that are very different. But after thinking about it, I realized that the story could be made up" (Student 3).

If students engage in this activity frequently, they will be better able to deepen their understanding of the material they have learned in both mathematics and Pancasila. This is believed to be because writing a story reflects the knowledge they already possess (Campos & Oliveira, 2019; Walters et al., 2016, 2018).

Self-motivation as prospective teachers with character

Several students said that this experience motivated them and made them aware of their future role as educators who not only teach knowledge but also instill values.

"I realize that being a teacher requires creativity. It's not enough to be able to teach students how to calculate; you also have to be able to teach them good character" (student 4).

This experience is very important and can serve as capital for prospective teachers with character in line with the values of Pancasila. Through the learning process they have undergone and the meaningful learning experiences they have gained, they are highly motivated to provide even more meaningful experiences for their students in the future (Hartoyo, 2015).

The results of this study reinforce the view that a learning approach that combines academic content and noble national values can provide a more meaningful learning experience. The use of digital media such as Story Jumper opens up space for students to express themselves, reflect, and integrate cognitive and affective aspects simultaneously, thereby enhancing students' understanding of mathematics in a conceptual and contextual manner (Kencanawaty, 2019).

From a phenomenological perspective, students' experiences show that digital storytelling is not merely an academic activity, but an existential process, a process of searching for meaning in learning and in becoming human. The stories produced not only illustrate an understanding of mathematical concepts, but also reflect the values that students live by and wish to instill in others.

This finding is in line with the objectives of the Merdeka Curriculum and the Pancasila Student Profile, which place character at the center of the educational process. The internalization of character values embodied in mathematics learning can realize the Pancasila

student profile (Dwi et al., 2023).In the context of teacher education, this experience is crucial because it shows how students, as future educators, can develop sensitivity to values in the learning processes they design.

Conclusion

This study describes students' learning experiences in their understanding of Pancasila values as related to mathematics through a picture story project using Story Jumper Media. Several themes in mathematics and Pancasila topics have been explored, including the values in each principle of Pancasila and topics on number operations and flat shapes in mathematics. Students felt a new meaning in learning because they were actively and creatively involved in developing story ideas, which motivated them to become prospective teachers with Pancasila character.

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