

Students' Perceptions of In-Deep Learning in Mathematics Subjects in Elementary Schools

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Abstract: The purpose of this study was to analyze students' perceptions of in-depth learning in mathematics at SD N 1 Kutowinangun. This study used a descriptive quantitative approach. Respondents in this study were 5th grade students. The data collection technique used a questionnaire. The data analysis technique used quantitative descriptive in the form of percentages. The results showed that 75,85% of students' perceptions of mathematics lessons were classified as good.

Keywords: Perceptions of deep learning in mathematics, elementary school.

Introduction

Mathematics learning objectives are based on the policy of the Minister of Education and Culture Regulation (PERMENDIKBUD) No. 22 of 2016, namely (1) understanding concepts, explaining and applying concepts accurately, precisely and efficiently, (2) reasoning, formulating and developing patterns of mathematical properties in compiling arguments and statements, (3) solving mathematical problems, (4) communicating arguments and ideas into another language. Based on these mathematics objectives, students are expected to be able to understand concepts and apply concepts accurately, be able to reason, formulate, solve mathematical problems and be able to communicate arguments in another language. Therefore, mathematics learning needs to be carried out creatively, fun and challenging in order to encourage students to actively think and find solutions independently.

Based on journal literature, in carrying out the mathematics learning process, a teacher is required to be able to create a learning process that can make students feel interested and have a great sense of curiosity, especially in learning mathematics. In an effort to create quality learning,

a teacher must be able to provide creativity and innovation in implementing the learning process. Therefore, it is important for teachers to sort and choose what strategies to use in implementing learning that suit the needs of students. (Kuntarto, 2013). Apart from that, teachers also need to understand the characteristics of students so that the learning strategies used are truly effective and on target. Each student has different learning styles, abilities and interests, so teachers must be able to adapt learning methods and media to these conditions. Thus, the mathematics learning process is not only centered on delivering material, but also emphasizes the active involvement of students in discovering and understanding concepts independently.

Learning mathematics in the current digital era, teachers must play a more active role in teaching their students. They must also help students solve problems and use technology actively and consciously. By implementing this learning approach, teachers can improve information, learning, innovation, media and technology skills (Nufus, 2025). Mathematics learning in the current digital era requires teachers to play a more active and innovative role in the learning process.

Teachers not only deliver material, but teachers must also be facilitators in the learning process in class. The current use and utilization of digital technology, such as learning applications, dare platforms, and visual media makes learning easier for students. Therefore, teachers need to guide students so they can use technology well. Apart from that, the integration of technology in mathematics learning also provides an opportunity for teachers to create a more interactive and enjoyable learning atmosphere. Through the use of digital tools such as learning videos, interactive simulations and educational games, students can understand abstract mathematical concepts in a more concrete and interesting way. This not only increases students' learning motivation, but also helps them develop critical thinking and creative problem solving skills. Thus, optimal use of digital technology can be an effective means of improving the quality of mathematics learning in schools.

Perception is the way a person views, interprets and gives meaning to an object or experience they experience. In the learning context, students' perceptions of a subject greatly influence their learning attitudes and motivation. Students who have a positive perception of mathematics tend to show joy, confidence, and enthusiasm in participating in learning, while students who have a negative perception often feel anxious, afraid, or reluctant to learn. These emotional conditions play an important role because they can influence the level of concentration, enthusiasm for learning, and ultimately have an impact on student achievement. Therefore, teachers need to foster a positive perception of mathematics through interesting and fun learning strategies, so that students can learn with confidence and obtain optimal learning outcomes. To foster this positive perception, teachers need to create learning experiences that are meaningful and relevant to students' daily lives. Mathematics learning should not only focus on calculations and formulas, but also emphasize the application of concepts in real contexts, such as in buying and selling activities, measurements, or everyday problem solving. In this way, students can understand that mathematics is not a difficult and scary subject, but rather a science that is close and useful in their lives. Apart from that, teachers

also need to give appreciation for students' efforts and successes, no matter how small, so that they feel appreciated and motivated to continue learning. This positive learning environment support will help students build self-confidence and foster interest and positive attitudes towards mathematics.

Based on the results of an initial study with mathematics teachers at SD N 1 Kutowinangun, it shows that mathematics learning is going well. The teacher uses an interactive lecture method, but it is still accompanied by practical activities so that students don't just listen. After explaining the material, the teacher provides practice questions so that students can immediately apply what they have learned. In this way, students will be more active and enthusiastic in participating in learning because they can understand the concepts and practice them directly. However, the results of this initial study also show that there are still several things that need to be improved in the implementation of mathematics learning. For example, the use of technology-based learning media is still limited, so variations in the presentation of material are not optimal. In addition, not all students have an even level of understanding, especially for those who need different approaches in understanding mathematical concepts. Therefore, teachers need to continue to innovate in choosing strategies, methods and learning media that suit student characteristics. In this way, the learning process will become more inclusive, interesting and effective in improving students' understanding and learning outcomes.

Many previous studies have studied students' perceptions of various learning methods, however, not many have studied students' perceptions of mathematics learning. Marlina (2023), examined students' perceptions of learning Pancasila and Citizenship Education, the results of the research proved that perceptions of learning media and students' learning attitudes influenced learning achievement in Pancasila and Citizenship Education. Meanwhile, Sobron (2019) examined student perceptions in a study of the influence of online learning on interest in learning science. The research results showed that online learning-based

science learning at SD Negeri 03 Karanglo Tawangmangu had a positive impact on students.

Based on this research, the aim is to analyze students' perceptions of in-depth learning in mathematics learning at SD N 1 Kutowinangun. The formulation of this research problem is to analyze students' perceptions of in-depth mathematics learning at SD N 1 Kutowinangun.

Method

This research approach uses a quantitative approach. This type of research uses a quantitative descriptive type. Quantitative descriptive is research that uses quantitative methods and descriptive analysis techniques in order to understand the meaning of data academically. Primarily quantitative data is collected using

questionnaires or field observation techniques and presented in the form of tables, surveys, graphs, histograms, steam and leaves, numerical measurements: arithmetic mean, median. (Alfatih, 2016). This research was carried out at SD N 1 Kutowinangun. Respondents totaled 22 students. The data collection technique for this research uses a questionnaire using a Likert scale which uses 3 alternative answer choices, namely agree, disagree and disagree. The data analysis technique uses quantitative descriptive in the form of percentages.

Table 1 categorization of student perceptions.

Score (%)	Category
67 – 100	Good
33 - 66	Not good
0 - 32	Not good

Research Result

Table 2 Students' perceptions of mathematics learning.

No	Statement	N (%)				
		S	KS	TS	Average	Category
1	I prefer mathematics lessons to other subjects	23%	41%	36%	62,3%	Not good
2	For me mathematics is a fun subject	23%	59%	27%	71%	Good
3	I was forced to study mathematics because it was one of the subjects that was mandatory	23%	41%	36%	71%	Good
4	Mathematics is very useful in everyday life	64%	27%	4%	83%	Good
5	Mathematics lessons are very troublesome because they have to be specially prepared	18%	36%	45%	75%	Good
6	Mathematics lessons cannot be used in everyday life	9%	36%	54%	81%	Good
7	Learning mathematics using this method is uninteresting and boring	9%	31%	54%	71,6%	Good
8	In my opinion, learning mathematics like this makes me happy and interested in studying mathematics	50%	23%	27%	74,3%	Good
9	Learning like this makes me lazy to pay attention to the material being studied	4%	54%	40%	77,3%	Good
10	Pembelajaran matematika seperti ini tidak ada bedanya dengan pembelajaran matematika yang biasa dilakukan	40%	36%	23%	60,3%	Not good
11	Learning like this makes it easier for me to understand the material	59%	27%	9%	80%	Good
12	Methods or methods like this allow me to use mathematics in everyday life	64%	27%	9%	85%	Good
13	The teaching materials presented made it difficult for me to understand the material	14%	54%	32%	72,6%	Good
14	Learning mathematics like this makes me brave to express my opinion	50%	31%	18%	76,6%	Good

15	I prefer learning mathematics like this compared to ordinary (conventional) learning	27%	59%	14%	71%	Good
16	I like learning mathematics like this because I can often spend time with friends and teachers	54%	31%	9%	77,6%	Good
17	Learning mathematics like this is not useful for me	18%	18%	64%	82%	Good
18	I feel confused and tense during mathematics learning	9%	45%	45%	78%	Good
19	Studying discussions makes it difficult for me to understand the material	4%	36%	50%	75,3%	Good
20	I am more motivated to study mathematics after receiving this lesson	59%	41%	0%	86,3%	Good
Average		31%	38%	30%	75,85%	Good

Based on the table regarding students' perceptions of mathematics learning, it can be seen that in general students have a good perception of mathematics learning, with an **average percentage of 75.85%** which is included in the good category. This shows that the majority of students feel that their mathematics learning experience is positive, interesting and useful. Thus, it can be concluded that overall students' perceptions of mathematics learning are relatively **good**, because the majority of students show a positive attitude, are motivated, and realize the benefits of mathematics in everyday life. However, teachers still need to innovate in learning strategies and methods so that mathematics can be more popular and can foster students' sense of enjoyment and self-confidence in learning.

Dicussion

The research results show that students' perceptions of mathematics learning at SD N 1 Kutowinangun are classified as good (75.85%). This means that most students have a positive view of mathematics lessons. They feel that learning is fun, useful in everyday life, and can increase motivation and learning activity. However, there are still a small number of students who find it difficult to understand certain materials and consider the learning methods to be less varied. This finding is in line with the results of research by Suryani & Putra (2024) in the Journal of Nusantara Elementary Education which examined "Student Perceptions of Contextual-Based Mathematics Learning in Elementary Schools." The results of the study showed that 78% of students had a positive

perception of mathematics learning that uses a contextual approach. Students find it easier to understand concepts because the material is linked to real situations, such as buying and selling activities, measurement, or mathematical games. This meaningful learning fosters students' interest and self-confidence. This research confirms the results of a study at SD N 1 Kutowinangun that positive perceptions grow when students are actively involved and find relevance between lessons and everyday life. In addition, research by Lestari & Wibowo (2023) in the Journal of Mathematics Education Scholars with the title "The Relationship between Students' Perceptions of Mathematics and Learning Motivation with Elementary School Students' Learning Outcomes" also supports this finding. Their research showed a significant positive relationship between students' perceptions of mathematics and learning outcomes ($r = 0.74$). Students with positive perceptions of mathematics demonstrated higher learning enthusiasm and better results. The main factors influencing positive perceptions were the teacher's communicative role and the use of engaging learning media, such as interactive videos and concrete teaching aids. When compared to research at SD N 1 Kutowinangun, the results showed a similarity: students felt more motivated to learn when teachers used interactive approaches and provided opportunities for hands-on practice. This means that the teacher's role as a creative facilitator and the use of relevant visual media significantly influenced students' positive perceptions of mathematics. However, both our research and the two comparison studies highlighted one important issue: some students still have unfavorable perceptions of mathematics, primarily because they

find the material difficult and the learning methods monotonous. This demonstrates the need for continuous learning innovation, such as the implementation of Project-Based Learning (PjBL), Problem-Based Learning (PBL), or game-based learning, to make the mathematics learning experience more meaningful and enjoyable for all students.

Conclusion

Based on the research results, it can be concluded that students' perceptions of mathematics learning at SD N 1 Kutowinangun are considered good, with a percentage of 75.85%. This indicates that the majority of students have a positive view of mathematics lessons, considering them enjoyable, beneficial, and capable of increasing motivation and learning engagement. These results also align with research by Suryani & Putra (2024) and Lestari & Wibowo (2023), which both emphasized that positive perceptions of mathematics learning are closely related to contextual, interactive learning approaches and the use of engaging media. Therefore, the teacher's role as a creative facilitator and the use of relevant learning media are important factors in shaping positive student perceptions. However, a small number of students still have less favorable perceptions due to difficulty understanding the material or finding the learning methods monotonous. Therefore, ongoing learning innovations such as the implementation of Project-Based Learning (PjBL), Problem-Based Learning (PBL), or game-based learning are needed

to create more meaningful, varied, and enjoyable mathematics learning experiences for all students.

Conflict of Interest: The authors declare that there are no conflicts of interest concerning the publication of this article.

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