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Analysis Of Learning Difficulties Of Grade Vi Students In The Material Of Spacious Figures In Elementary School

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Abstract

This research was conducted at an elementary school in Pedamaran , Pedamaran District, Ogan Komering Ilir Regency, South Sumatra. This research was motivated by the problem of students' learning difficulties in understanding the concept of geometric shapes, these difficulties are caused by several problems that arise in the learning process, there are still many students who experience learning difficulties, especially in understanding the concept of geometric shapes, because in this geometric shape material the delivery must be explained through concrete objects, because students tend to understand real problems, especially elementary school students, most elementary school children prefer learning that is related to everyday life or real life. This study aims to determine the picture of student learning outcomes in understanding the concept of geometric shapes, in which part students experience many difficulties in understanding the concept of geometric shapes, what factors influence students' difficulties in understanding the concept of learning mathematics on the subject of geometric shapes in grade IV of elementary school in Pedamaran . This research is a descriptive qualitative study, data were collected using tests conducted at public elementary schools in Pedamaran . The data sources in this study were students and mathematics teachers of grade VI of public elementary schools in Pedamaran .

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Based on the test, students have errors in understanding the concept of geometric shapes. The results of this study show a picture of learning outcomes, meaning students' scores are below the Minimum Competency (KKM). In this case, students do not understand the form of the problem that must be translated into mathematical sentences and students do not understand which formula to use in the problem. Factors that influence this include internal factors such as low student interest in learning, student readiness to learn, and lack of motivation. External factors include inadequate school facilities, friends who do not support learning, unpleasant learning methods, and a lack of teachers who provide examples in learning.

Keywords: learning difficulties, spatial structure

INTRODUCTION

Mathematics is one of the important subjects taught since elementary school. Mathematics learning not only aims to improve numeracy skills but also to develop logical, systematic, and critical thinking skills in students (Ningsih et al., nd) . Therefore, understanding mathematical concepts from elementary school is very important as a foundation for learning at the next level of education. However, in practice, mathematics learning often only focuses on the use of formulas and problem solving without providing students with a deep understanding of the concepts. This causes many students to experience difficulties when faced with problems that differ from the examples given by the teacher, especially problems related to the application of concepts in everyday life (Wibowo & Agia, 2020) . One of the mathematical materials often considered difficult by elementary school students is geometric shapes. This material requires students to understand the shape, properties, and calculation of volume and surface area of geometric shapes. If students do not understand the basic concepts of geometric shapes well, they will experience difficulties in solving various types of problems.

But in reality , in activity for every individual No forever can ongoing in a way reasonable , even so in learning mathematics . State the influenced by speed slowness Power catch somebody to something lessons and fast Power catch influenced by concentration . There are obstacles For reach objective frequent study We meet in activity everyday so- called difficulty learning . The difficulties that contained in learning mathematics is something things that always met by participants educate in the process learning , so that result in something obstacle For reach desired goals . Participants students who experience difficulty Study have a number of characteristics of participants students who have difficulties Study often do error in Study counting , and errors in finish question story . Factors that cause difficulty learn from participants educate among them is factor low intelligence will but can also be

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caused by non - intelligence factors . With thus , high IQ Not yet Of course ensure success learning . Factors reason difficulty Study That Alone can classified into two groups that is internal factors (factors) from in self man That itself) which includes factor physiology and factors psychology , whereas factor external (factors) from outside humans) which includes non - social factors and social factors social (Ajiegoena , 2014; Awaludin et al., 2019; Juniarti et al., 2020; Masykur et al., 2017).

Based on observations at an elementary school in Pedamaran, it was found that most sixth-grade students struggled to understand the material on geometric shapes. Furthermore, their motivation to learn was also low. Many students were less active in the learning process, and only a few dared to ask or answer questions from the teacher.

Based on these problems, this study aims to analyze the learning difficulties and low motivation of sixth grade students in understanding spatial geometry material at SD Negeri 7 Pedamaran.

RESEARCH METHODS

This research used a descriptive method. The research was conducted at SD Negeri 7 Pedamaran with research subjects being sixth-grade students and mathematics teachers. Data collection techniques were carried out through observation, interviews, and documentation. Observations were conducted to determine student learning activities during the learning process. Interviews were conducted to obtain information directly from teachers and students regarding the difficulties they experienced in understanding the material on spatial shapes. Documentation was used to supplement the research data in the form of photographs of learning activities and student work results. The data obtained were then analyzed descriptively to describe student learning difficulties and factors that influence students' low learning motivation in mathematics learning.

RESULTS AND DISCUSSION

Researchers have obtained an overview from research that has been conducted with various parties related to the Implementation of Adaptive Management by the Principal. The results of the study show that the implementation of adaptive management implemented by the principal of SMP Negeri 04 Madang Suku I OKU Timur demonstrates the ability to adapt to the dynamics of educational policy, particularly in facing the implementation of the Independent Curriculum. The principal plays a role not only as an administrative manager, but also as an

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adaptive leader with the ability to direct, coordinate, and motivate school residents to remain in line with the educational vision despite the demands of transition. The implementation of adaptive management is seen in three main stages: planning, implementation, and evaluation.

According to Mulyadi, learning difficulties are conditions that manifest during educational activities, characterized by specific obstacles to achieving educational goals. Meanwhile, Blassic and Jones (in Cahyono et al., 2019) assert that learning difficulties faced by students reveal a discrepancy or gap between anticipated academic achievement and the actual academic performance achieved by the learner. Furthermore, it is argued that such challenges will always affect students' academic success in the classroom environment. This cognitive capacity includes forms of logical, critical, systematic, and creative thinking. However, mathematics is consistently considered a challenging subject for students due to its reliance on abstract mathematical constructs and numerous formulas, resulting in the perception of mathematics teaching in educational settings as a tough and complex subject to understand and apply (Alfiyah, Zuraida Nisaul, et al.). Learning difficulties can also be conceptualized as a child's inability to fulfill tasks given by educators. Children who exhibit learning disabilities have different characteristics and exhibit diverse modalities. Thus, it can be concluded that learning difficulties include the presence of obstacles or barriers in achieving learning goals, which can be reflected in the discrepancy between students' expectations and academic performance. These learning difficulties not only affect the learning aspect but also impact overall academic achievement in the classroom. Therefore, understanding and addressing learning difficulties is crucial to ensure optimal achievement in the educational process. The factors influencing learning difficulties are difficult to pinpoint because they are interconnected (Asriyanti & Purwati, 2020).

According to Dhian (2016), educator fulfil nine role different in framework activity Study teaching , especially : the role informant , role organizer , role of motivator, role director , role initiator , role transmitter , role facilitator , mediator role , and evaluator role . Educator school base responsible answer For give content education start from the most fundamental concept . Educators expected No only own knowledge comprehensive about material lesson but also for provide relevant role models with situation life real . As a result , educators own role important in success activity Study teaching activities Study is a process experienced by everyone man during he live . Based on results research conducted by Novitasari , A., & Fathoni , A. (2022) can concluded that in overcome difficulty Study mathematics can done with a number of method namely : (1) changes in learning models that can interesting interest Study students ; (2) use of interesting learning media in accordance with material learning ; (3) involves student in using learning media

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; (4) give freedom For student ask about material that has not been understood ; and (5) provide remedial for students who get mark below KKM.

Mathematical development does not occur naturally in every child. Although many children meet national requirements for mathematical proficiency throughout elementary school, some children experience severe and persistent difficulties in learning mathematics, a condition known as mathematics learning difficulties (MLD) (Desoete, 2007; Van Luit, 2019). The deficits exhibited by children with MLD, sometimes also called dyscalculia, can be broad. These deficits can be manifested across multiple mathematical domains and across a range of underlying cognitive skills, reflecting the heterogeneity of MLD (Geary, 2004). The precise cognitive mechanisms that enable some children to develop their mathematical performance more than others remain unclear. Variability in sample characteristics across studies (e.g., Murphy, Mazzocco, Hanich, & Early, 2007) further complicates the identification of underlying cognitive mechanisms in MLD and, consequently, hampers the search for appropriate building blocks for establishing adequate interventions for children with mathematics delays. Therefore, the aim of this study was to examine which cognitive mechanisms predict the mathematical development of children with mathematics learning difficulties (MLD) and their typically developing (TD) peers, and to what extent sample selection criteria lead to different profiles of mathematical and cognitive skills. According to previous research, a theoretical model of mathematical development in TD children can be derived, with the most relevant factors including number sense (Schneider et al., 2017), working memory (Friso-van den Bos, Van der Ven, Kroesbergen, & Van Luit, 2013), phonological awareness (Simmons & Singleton, 2008), rapid naming (Willburger, Fussenegger, Moll, Wood, & Landerl, 2008), and nonverbal reasoning (Seethaler, Fuchs, Star, & Bryant, 2011). To elaborate on these cognitive skills, number sense, or the ability to recognize and understand quantities, number words, and Arabic numerals (Dehaene, Piazza, Pinel, & Cohen, 2003), is involved in mathematics achievement in TD children by supporting their insight into relationships between numbers and hence mental calculation performance. For example, number sense is involved in mathematical tasks in which number words, symbols, or quantities are actively used to represent quantities (e.g., counting and ordering) as well as in tasks requiring insight into the magnitude of numbers.

Mathematics in the upper elementary grades demands an understanding and application of general principles and strategies for solving mathematical problems. The focus of this study is on fourth- and fifth-grade mathematics because children in these grades typically expand their mathematical knowledge from simple arithmetic skills to solving more complex mathematical

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problems (Mullis, Martin, & Loveless, 2016). Mathematics in this study is operationalized into three domains present in the Dutch curriculum as well as in many other industrialized Western cultures: number, geometry, and proportion. First, the number domain represents children's ability to calculate with (large) whole numbers. Second, the geometry domain includes the ability to calculate the perimeter or area of a figure and convert units of measurement (e.g., centimeters to kilometers). Third,

Students' learning difficulties in spatial geometry material based on the results of the research conducted, it was found that the majority of sixth grade elementary school students in Pedamaran experienced difficulties in understanding the spatial geometry material. According to (Amalia & Mawardini , 2023) These difficulties are apparent when students are asked to identify the properties of geometric shapes and calculate their volumes. Furthermore, students also struggle to understand word problems related to geometric shapes. Many students are unable to translate word problems into mathematical sentences, making it difficult to determine the correct formula for solving them. These difficulties are also influenced by students' low motivation to learn mathematics.

Some students believe that mathematics is a difficult and boring subject; this perception can influence their attitudes during the learning process. Students with low learning motivation tend to be less active in learning activities, rarely ask questions to the teacher, and participate less in class discussions (Bangun et al., 2025) . In addition to internal factors originating from the student, external factors such as the learning methods used by teachers also influence the level of student understanding and learning motivation. Learning that is still dominated by lectures and continuous practice problems can cause students to feel bored and less interested in the material presented (Fauzi & Arisetyawan, 2020) . Therefore, teachers need to implement more varied and innovative learning methods so that students are more actively involved in the learning process. Mathematics play role big in develop thinking humans , presenting the reasoning process strategic and systematic methods used in analysis and problem solving problem . Mathematics help people to can anticipate , plan , decide , and solve every problem in life everyday life . Mathematics is also a tool For learn knowledge technology and the like . With thus , mathematics beneficial for life we help increase quality life (Core Curriculum of Basic Education, 2008). In addition that , the National Mathematics Teachers Council (2012) stated that skills solution problem is hope main from eye lesson mathematics . On the other hand , the goal main teaching mathematics is For allows student solve problem problem life everyday . Therefore that , can it is said that mathematics is tool For practice students to be able to solve problems , and for building a thinking process that

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leads to ability more carry on For solve non- mathematical problems .

One of efforts that can be made done is with using concrete learning media , such as building models space , tools props , as well as objects in the environment around students . Through use of the media , students can see in a way direct form get up room so that they more easy understand concepts learned . In addition that , activity learning that involves discussion group , solution problems and activities practice can also increase involvement student in learning (Sidik et al., 2021) . With existence more learning interactive and contextual , expected student No only capable memorize formula , but also understand draft get up room in a way more deep . Besides That according to (Simbolon & Ramadhani, 2019) motivation Study students can also increase Because they feel learning mathematics become more interesting and meaningful . Therefore Therefore , the role of teachers is very important in create atmosphere conducive learning as well as give experience learning that can help student understand draft mathematics with more good . In Thailand, the results exam national about performance mathematics student class six across the country between 2007-2009 shows that part big student is at the necessary level improved (NIETS, 2012). Analysis O-NET exam for student class 6 shows that questions mathematics in exam the consists of from questions symbolic and questions text long . According to results said , some of them big student experience difficulty in apply knowledge mathematics they For solve problems , especially on questions based text that requires skills understanding besides the thinking process mathematical .

Many scholars has learn understanding problem mathematics . Bruckner and Grossnickle (1947), Suydam and Weaver (1977), and West (1977) have learn difficulties that affect solution problem mathematics . Obstacles the biggest is lack of skills reading , computing , and mathematics . When students No can understand what is implied in text , they No can start the thinking process For solve problem . Students only knowing keywords or term limited technical skills . They not enough interested in the problem mathematics , because length and complexity problem said . Some scholars also study connection between understanding reading and achievement mathematics , such as Helwig et al . (1999), Fuchs et al . (2000). A studies about indicators that influence studies mathematics show that factor key is reading . (Lamb, 2010; Jiban & Deno , 2007). From all of the above , understanding reading skills computing and mathematics is factor key For solve problem mathematics . For finish something problem mathematics , students need skills reading , especially understanding reading and analysis text . Therefore that , researcher interested For do study about difficulty in finish problem mathematics among student school basic , as guide for teachers and parties related For create method teaching precise and

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appropriate mathematics For students . This is will leading to development more carry on tools used For analyze difficulty student in finish problem mathematics .

Picture:



Figure 1. Teachers accompany students in the learning process.



Figure 2. Students Scary assignments given by the teacher.

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Figure 3. Results of the work student

CONCLUSION

Based on results research that has been done , can concluded that Student Class VI of Public Elementary School in Pedamaran experience difficulty Study in understand get up space , especially in identify properties get up space and calculating the volume of the building space , but after given different learning approaches and models so student understand explanation about get up space . Besides That caused by lack of understanding draft basic , such as recognize form , nature , and elements get up space . Besides that , other factors such as method lack of learning varied , minimal use of concrete media , as well low ability visualization students also participated influence . Therefore that , is necessary the role of teachers in implementing more effective learning strategies innovative , using tool props or appropriate learning media , as well give intensive mentoring so that students can understand material get up room with more okay . After given different ways and models so student class VI can get great value and capable finish question get up room .

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