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THE INFLUENCE OF PARENTS' EDUCATION AND LEARNING MOTIVATION ON MATHEMATICS LEARNING ACHIEVEMENT AT SD NEGERI KRAMAT III

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Abstract

This research aims to analyze how education carried out by parents and learning encouragement affects students' mathematics learning achievement, individually and collectively. If there is indeed a very positive and significant influence, then how strong is the influence of education carried out by parents and learning motivation on students' mathematics learning achievement? The research method used is after-the-fact. This research selected 45 respondents as the research sample. The researchers collected data using a questionnaire and analyzed it with descriptive statistical methods, including calculating the mean, median, mode, and standard deviation. This research used statistical tests to analyze the significance of the correlation coefficient with the t-test. The research was carried out from January to June 2024. The results show that: 1) parents' education significantly influences students' mathematics learning achievement. The obtained t_{count} proves a score of 2.199 and Sig. 0.033<0.05. The parents' education variable contributes 16.66% to improving students' mathematics learning achievement. 2). Learning motivation significantly influences students' mathematics learning achievement. The obtained t_{count} proves a score of 3.063 and Sig. 0.004 < 0.05. The learning motivation variable contributes 25.51% in improving students' Mathematics learning achievement. 3) Parents' education and learning motivation significantly influence students' mathematics learning achievement. The evidence was shown by obtaining a score of Fo = 15.298 and Sig. 0.000 < 0.05. Together, education carried out by parents and learning motivation affect the mathematics learning achievement obtained by students, contributing 42.1%.

Keywords: Parents' Education; Learning Motivation; Mathematics Learning Achievement

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A. Introduction

Parents' education significantly influences student learning achievement. In this context, parental education refers to parents' guidance, attention, direction, response, and participation to support their children's learning. According to Wirawan et al. (in Ansel & Pawe, 2021), parental tutoring involves actively assisting children in their educational journey through love, attention, acceptance, and responsibility and helping them overcome learning challenges to achieve optimal outcomes according to their potential. Similarly, Yuliastuti (2022) and Ansel & Pawe (2021) highlight that parental tutoring is the support parents provide when children encounter difficulties in their learning activities.

According to Musfiyyah & Maknun (2022), the role of parents is the most dominant factor that supports children's educational success, especially in subjects that require a strong understanding of concepts, such as mathematics. Mathematics is one of the subjects taught in school, and it is a subject that many students do not like. For them, mathematics tends to be seen as a subject that is "less popular" (Murtiningsih, 2019). Thus, when parents have a higher education level, they can provide their children with better academic support and motivation. It can create a positive learning environment at home, where students feel motivated to learn and develop their math skills. Motivation is a condition within a person that encourages him to carry out certain activities to achieve the desired goals (Utari, 2018). Learning motivation is also a key factor in determining student learning achievement. Motivation exists within a person that encourages that person to behave and act to achieve certain goals (Leobisa & Namah, 2022). According to Sandy et al. (2017), learning motivation greatly influences learning outcomes. The result obtained by Erlisnawati (2015) shows that lack of motivation for a subject is the root cause of why students do not want to learn. Yandari & Kuswaty (2017) state that when parents actively participate in their children's education by teaching fundamental concepts, they can enhance their children's learning motivation by encouraging and acknowledging their efforts. Providing appropriate support, such as assisting with math assignments or praising children for successfully solving problems, can boost their self-confidence and inspire them to work harder.

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Additionally, educational institutions play a crucial role in fostering collaboration between parents and schools to support students' learning experiences. By sharing information about student progress, educational units can help parents understand the challenges their children face in learning mathematics. It also allows parents to be more empathetic and provide support according to the child's needs. When an educational unit's values, vision, and mission align with parents' expectations, the learning process will be more focused and effective.

Several studies show that there is an influence of parental education and learning motivation on students' mathematics learning achievement (Junita et al., 2019; Kurniasari, 2019; Marbun, 2021; Mawarsih et al., 2013; Munthe & Pasaribu, 2023; Putri & Pradana, 2021; Sukendra & Yuliastini, 2019). Based on these findings, this research aims to analyze the impact of parental education on students' mathematics learning achievement, the effect of learning motivation on mathematics achievement, and the combined influence of parental education and learning motivation on students' mathematics learning outcomes.

B. Methods

The method used in this research is the a*fter-the-fact* method with a quantitative approach. The first factor is parental education as the independent variable (X1) and learning motivation (X2), with student mathematics learning achievement as the dependent variable (Y). Using this research method, the researcher hopes to get an overview of the research results by the facts.

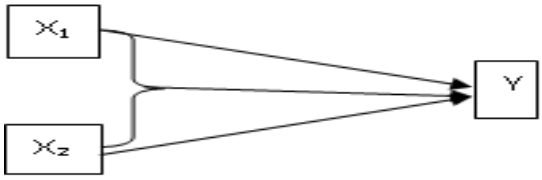

Figure 1. Problem Constellation

Information:
X1 = Parental Education
X2 = Learning Motivation
Y = Mathematics Learning Achievement
X1 = influences Y
X2 = influences Y
X1 and X2 both influence Y

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The population in this research were 6th-grade students at SD Negeri Kramat III, Pakuhaji Sub-district, Tangerang Regency, in the even semester of the 2023/2024 academic year. The sample in this research was 45 students in 6th grade at SD Negeri Kramat III, Pakuhaji Sub-district, Tangerang Regency.

In this research, parental education is measured through students' scores on a questionnaire designed around several key indicators: parental guidance, frequency of attention, direction, response, and participation. The validity of this instrument was established through field trials and feedback from two academic supervisors, one expert teacher, the school principal, and the school supervisor. Reliability testing obtained a coefficient $r = 0.981$, indicating that the instrument is highly reliable for measuring parental education's impact on students' learning outcomes.

Student learning motivation in this research is the student's score on a questionnaire, which is compiled based on the following indicators: (1) frequency of learning, (2) learning achievement, (3) grit and tenacity, (4) devotion to achieving goals, and (5) aspirations.

The calculation results found that all instrument items for the Parental Education (variable X1) and the Learning Motivation (variable X2) were declared valid. The questionnaire data is in the form of 30 questions with four options previously tested for the validity and reliability of the questions. Teachers distributed questionnaires to students to collect qualitative data, which was then converted into interval data for each variable using a Likert scale. Learning motivation data is in the form of questions consisting of 35 questions with options: SS (strongly agree), S (agree), N (Neutral), and TS (disagree), which have previously been tested for the validity and reliability of the questions. Teachers distributed questionnaires to students to gather qualitative data. The data was converted into interval data for each variable using a Likert scale.

C. Results and Discussion

Mathematics learning accomplishment was obtained from the Final Exam (UAS) scores of 45 students as the investigated sample. The scores obtained were a score of 65 as the lowest score, 95 as the highest score, a mean score of 78.07, a median score of 75, a mode of 76, and a standard deviation of 9.340.

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Table 1
Statistical Calculation of Students' Mathematics Learning Achievement Results

N	Valid	45
	Missing	0
Mean		78.07
Median		75.00
Mode		76
Std. Deviation		9.340
Minimum		65
Maximum		95

Based on the calculations above, the mathematics learning achievement of students at SD Negeri Kramat III, Pakuhaji Sub-district, Tangerang Regency, is relatively high, as indicated by a mean score of 78.07. The following histogram presents the results to clarify the information.

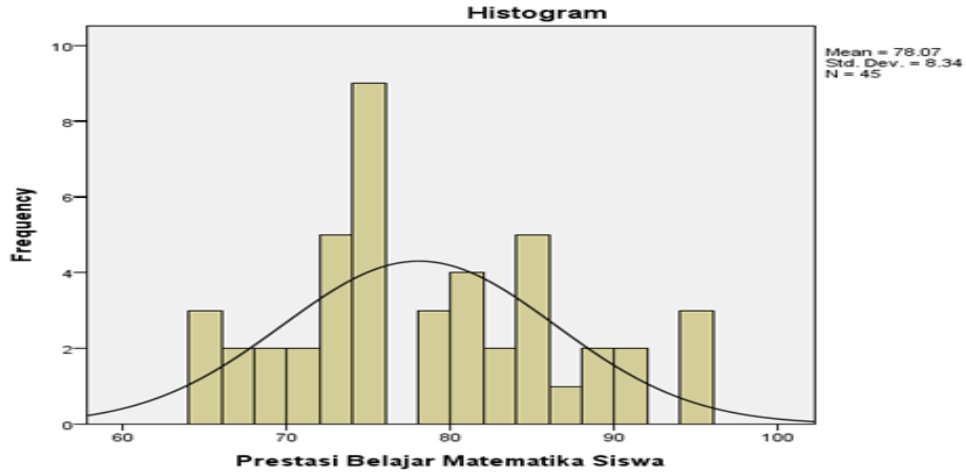

Figure 2. The Histogram of Mathematics Learning Achievement Variables

From the table and histogram above, it can be concluded that the mathematics learning achievement information for students at SD Negeri Kramat III Pakuhaji Sub-district, Tangerang Regency, displayed a typical dispersion.

Next is the educational background of the student's parents (X1). Parental education was obtained from a survey of 45 students, with the lowest score of 39, the highest score of 112, the mean score of 76.49, the median score of 78, the mode of 86, and the standard deviation of 8.844.

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Table 2
Description of the Results of Parents' Education Research

N	Valid	45
	Missing	0
Mean		76.49
Median		78.00
Mode		79
Std. Deviation		8.844
Minimum		58
Maximum		94

From the calculations above, it can be said that the parents' education at SD Negeri Kramat III Pakuhaji Sub-district, Tangerang Regency, is high, as indicated by a mean score of 76.49. The following histogram presents the results to clarify the information.

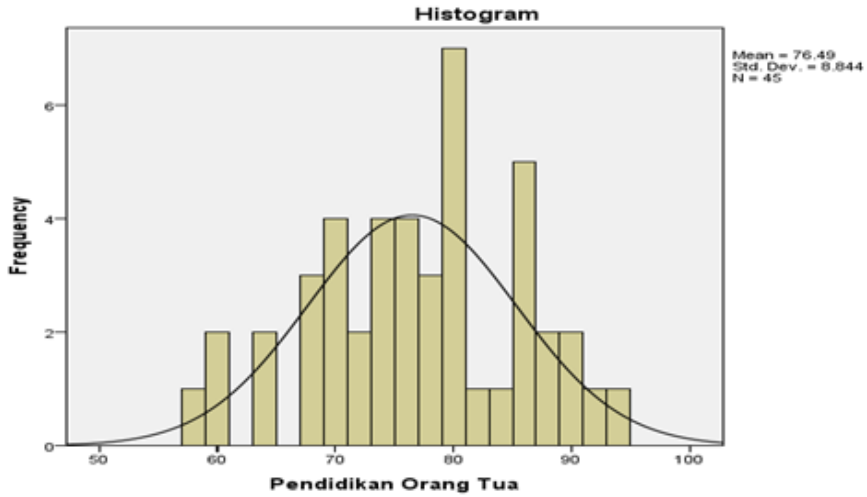

Figure 3. The Histogram of Parental Education Variable

From the table and histogram above, it can be concluded that the parents' education of students at SD Negeri Kramat III Pakuhaji Sub-district, Tangerang Regency, is included in the moderate category.

Next, the results of learning motivation (X2) were obtained from a questionnaire answered by 45 students as respondents, obtaining the lowest score of 59 and the highest score of 94. The mean score is 77.00, the median score is 79.00, the mode is 79, and the standard deviation is 8.216.

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Table 3
Description of Learning Motivation

N	Valid	45
	Missing	0
Mean		77.00
Median		79.00
Mode		79
Std. Deviation		8.216
Minimum		59
Maximum		94

Based on the calculations above, it can be said that students' learning motivation at SD Negeri Kramat III Pakuhaji Sub-district, Tangerang Regency, is high, indicated by the achievement of a normal learning motivation score of 77, above the hypothetical normal score of 70. The following histogram presents the results to clarify the information.

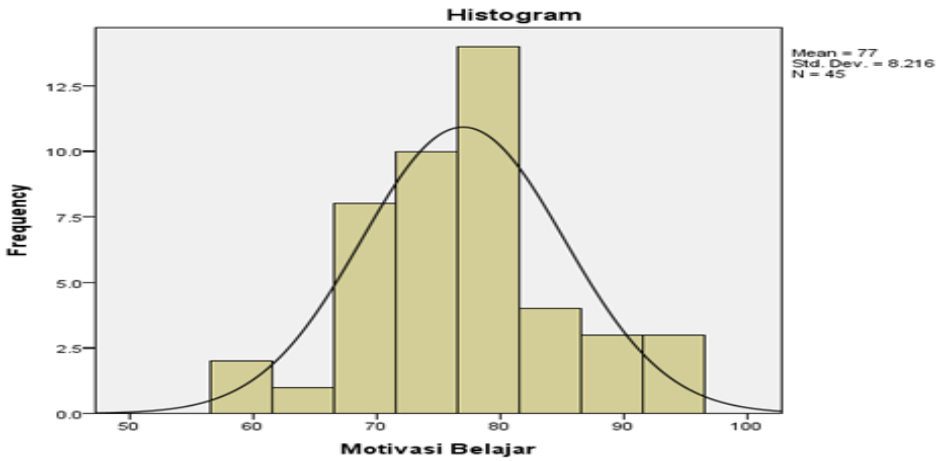

Figure 4. The Histogram Learning Motivation Variables

From the table and histogram above, it can be concluded that the student's learning motivation at SD Negeri Kramat III Pakuhaji Sub-district, Tangerang Regency, displayed a typical dispersion.

This research demonstrates that parental education positively influences the mathematics learning achievement of students at SDN Kramat III Pakuhaji Sub-district, Tangerang Regency. It indicates that parents' educational involvement significantly improves students' mathematics performance.

These findings are consistent with previous research. Hermawati (2018) showed that parental education contributes to students' mathematics learning

achievement. Kurniawan and Wustqa (2014) found that parental attention significantly influences mathematics achievement, while Asfuri (2022) highlighted a positive and significant relationship between parental guidance and mathematics outcomes. Similarly, Mawarsih et al. (2013) demonstrated a significant influence of parental attention on student achievement. Kurniasari (2019) confirmed the positive impact of parental attention on students' mathematics outcomes, and Junita et al. (2019) found a significant relationship between parental attention and mathematics achievement. Additionally, Marbun (2021) and Chusnia & Rozak (2023) emphasized the significant role of parental attention in enhancing students' mathematics learning outcomes.

These consistent findings underscore the significant influence of parental education on students' mathematics achievement, highlighting the importance of parental involvement in supporting academic success.

Furthermore, this research shows that motivation to learn has positively impacted the mathematics learning achievement of students at SDN Kramat III in Pakuhaji Sub-district, Tangerang Regency. High learning motivation enhances students' performance in mathematics, reinforcing the critical role of internal drive in academic success.

This result aligns with previous research findings. Hermawati (2018) showed that learning motivation contributes significantly to students' mathematics achievement, while Mawarsih et al. (2013) found a positive impact of learning motivation on student achievement. Kurniasari (2019) and Sukendra & Yuliastini (2019) confirmed a significant relationship between learning motivation and learning outcomes. Munthe & Pasaribu (2023) also highlighted the positive influence of motivation on mathematics achievement. Furthermore, Junita et al. (2019) demonstrated that learning motivation contributed 20.307% to students' mathematics learning outcomes, while Marbun (2021) and Chusnia & Rozak (2023) also reported significant positive effects of learning motivation on mathematics achievement.

The consistency of these findings with previous research underscores the vital role of learning motivation in enhancing mathematics learning achievement. This

study contributes to the growing body of evidence that emphasizes the importance of both parental education and learning motivation in supporting students' academic success, particularly in mathematics.

The findings on the influence of parental education and learning motivation reveal that both factors positively impact the mathematics learning achievement of students at SD Negeri Kramat III Pakuhaji Sub-district, Tangerang Regency. It indicates that parental education and learning motivation significantly improve students' mathematics performance.

These results align with research by Kurniawan and Wustqa (2014), which found that parental attention and learning motivation significantly affect mathematics learning achievement, contributing 10.6% to student performance. Additionally, Asfuri (2022) demonstrated a positive and significant relationship between parental guidance and mathematics learning outcomes. Furthermore, Mawarsih et al. (2013) found that (1) parental attention significantly influences student achievement, (2) learning motivation positively affects learning outcomes, and (3) a combined influence of parental attention and learning motivation enhances student achievement.

D. Conclusion

Based on the findings and discussion of data analysis presented, it can be concluded that parental education significantly influences students' Mathematics learning achievement. Learning motivation has a significant influence on students' achievement in mathematics. Parental education and learning motivation significantly influence students' mathematics learning achievement.

Based on this conclusion, there are suggestions: Parents should devote all forms of optimal attention to their children to improve their learning achievements. Student learning motivation has a vital influence on student learning achievement. Therefore, teachers and parents should be able to provide optimal encouragement so that children can continue to improve their achievement. Parental education and learning motivation together have a positive influence on mathematics learning achievement. Thus, teachers at school and parents at home should be able to

facilitate each student's learning needs. We hope that the findings of this research will always be useful and can be used as a reference for further research.

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