Parenting Styles and Parental Education Levels and Their Correlation with Students' Mathematics Learning Outcomes During the Covid 19 Pandemic

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ABSTRACT

This study aims to analyze the relationship between parenting styles and parental education levels on students' mathematics learning outcomes. This type of research is ex post facto. The population of this study was all fourth-grade elementary school students. Samples were taken using the proportional random sampling technique with a sample of 78 students. Data were collected by filling out a parenting style questionnaire by students who were the sample in the study. In contrast, data on parents' education level and students' mathematics learning outcomes were obtained through document recording. Data were analyzed by regression analysis technique. Regression analysis prerequisite tests include normality, linearity, and multicollinearity tests. After the prerequisite test is met, the next step is to test the hypothesis using simple regression, product-moment correlation, and multiple regression. The hypothesis testing results show a relationship between parenting styles and mathematics learning outcomes, there is a relationship between parents' education level on learning outcomes, and there is a relationship between parenting styles—parents' education level on mathematics learning outcomes.

1. INTRODUCTION

The position and function of mathematics are very important in everyday life. Mathematics supports the development of mathematics and other sciences (Permatasari, 2015; Putri et al., 2019). Therefore, mathematics is one of the compulsory subjects at the level of primary education to secondary education. Mathematics also has an important role in education. It is supported by the opinion that mathematics is given to students to help them organize their reasoning, form their personalities and be skilled in using mathematics and reasoning in later life (Antara et al., 2020; Dipayana et al., 2014). In line with this opinion, mathematics can train students to think logically, analytically, critically, carefully, systematically, and creatively, improving student learning outcomes (Snegurenko et al., 2019; Yuda et al., 2013). Many parents think that mathematics can be used to predict someone's success (Budang et al.,

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If a student studies mathematics well, the predictive student will also succeed in studying other subjects.

Seeing the importance of mathematics in life, students should like this subject. However, many students still feel that mathematics is uninteresting, so their mathematics learning outcomes are low. But on the other hand, some students get high mathematics learning outcomes. If the teacher presents mathematics learning using one type of model or learning method in one class, students should get the same learning outcomes. But in reality, some students have been able to reach the KKM and have not reached the KKM, so it can be stated that the student scores vary. It is suspected that factors besides the model or learning method cause variations in students' mathematics learning outcomes. It is supported by the opinion which states that learning is a complex process with many influencing factors, which include internal factors (factors originating from within the student) and external factors (factors originating from outside the student) (Rosdiantah et al., 2019; Syukriani, 2013). Internal factors include learning motivation, talent, intelligence, interest and attention, perseverance, attitude, study habits, physical condition, and intelligence. At the same time, external factors include the family environment, school environment, and community environment.

Based on these factors, the parents' environment is the most influential factor on children. It is supported by the opinion that the family environment is the main determining factor for child development. So that parents as part of the family play an important role in student learning success. Parents are said to be the first educators because their children receive education for the first time and are said to be primary educators because parental education is the basis for the development and life of children in the future (Bulan et al., 2016; Pakiding, 2014). It is in line with the opinion that the success or failure of children's education at school depends on parents' parenting style at home (Harianti & Amin, 2016; Permatasari, 2015). In addition, good parenting can affect children's success in learning, and a conducive and safe school environment can improve student learning outcomes with high student motivation, expectations of children, parents, and teachers achieved (Hedyanti et al., 2016; Pakiding, 2014). Thus, indirectly external factors can affect internal factors. It can be seen from the students' motivation that arises from good parenting.

Although children study at school every day, the success of children in learning is not only determined by the school. Children must still receive attention from their parents because the task of parents is not only to provide for their children, but it has become an obligation for parents to educate their children as much as possible so that they become the next generation (Vinayasti, 2015; Wardani & Ayriza, 2020). It is in line with the opinion which states that the role of parents is not only to provide pocket money or send their children to school but also to play a role in the education process of their children (Reskia et al., 2014; Zulaiha & Rohman, 2020). Parents have a role in laying the foundation for their children's learning (Elistantia et al., 2018; Khajehpour, 2011).

Parents who do not receive education up to college tend to have limited knowledge and experience in educating children. Hence, children are less than optimal in developing their talents and potential. Parents themselves do not understand how to help their children to succeed. Therefore, the relationship between parents' educational background and learning outcomes is very influential. It is in line with the opinion that if the last education of parents is good. It will lead to good and directed study habits resulting in increased student learning outcomes.

On the contrary, if the last education of parents tends to be less, they will be more indifferent and do not want to know about the existing problems. In schools, student learning outcomes tend to be less (Cholifah et al., 2016; Rochmawati, 2018). Parents who do not pay attention to their children's education, for example, are indifferent to their children's learning, do not pay attention at all to the interests and needs of their children in learning, do not manage their study time, do not provide complete learning tools, do not pay attention to whether children learn or not, do not want to know how their children's learning progress, difficulties experienced in learning and others, can cause children not / less successful in learning.

To find out the actual situation in the field, interviews were conducted with several homeroom teachers of fourth-grade elementary schools in Gugus 6, Kecamatan Tegalalang, and the following results were obtained: 1) there were still students who did not receive enough attention from their parents, for example, the lack of parental concern for business matters. Children's schools, such as children's attendance at school, children's neatness in dressing, and so on. 2) There are a small number of students who are active during learning so that they can obtain high learning outcomes. Meanwhile, most students in the same school seem indifferent to learning activities, so they have low learning outcomes. 3) 49% of students' parents have a maximum education of up to SMA/SMK, so they do not know how to educate their children to learn successfully. 4) some students get bad parenting from their parents. For example, they often invite children to do gambling activities.
In addition to interviewing several teachers, several students were also interviewed directly. The result was that some students admitted that their father often invited them to participate in gambling activities (cockfighting). It negatively impacts children’s development because violating norms can also make it a bad habit. Children at the elementary level of education usually follow their parents’ behavior as role models in the family environment because, at the age of elementary school children, they are still in the imitation stage of development. It is supported by the opinion which states that for children, parents are models that must be imitated and imitated (Budang et al., 2017; Sugiartini et al., 2019). Based on this, parents can be referred to as guidelines for children so that everything parents do for their children. All of these things have an impact on students' mathematics learning outcomes. This is evident from students' mathematics learning outcomes. Before the calculation of the reliability of parenting styles, it is known that the score of r11>rtable is 0.85>0.70, so the questionnaire has very high reliability. The analysis used in this research is descriptive analysis and inferential analysis. Descriptive analysis aims to determine parents’ high and low parenting styles, parents’ education level, and students’ mathematics learning outcomes. The mean, median, and mode results were obtained in the descriptive analysis. At the same time, the inferential test includes prerequisite tests and hypothesis testing. The prerequisite test includes normality, linearity, and multicollinearity tests. Hypothesis testing in this study uses regression which includes simple regression and multiple regression. Simple regression is used to determine the relationship between one of the independent variables on the dependent variable. At the same time, multiple regression is used to determine the relationship between the two independent variables on the dependent variable.

2. METHOD

This type of research is ex post facto. This research was conducted at SD Gugus VI, Kecamatan Tegalalang, 2017/2018 academic year, which includes SDN 1 Keliki, SDN 2 Keliki, SDN 3 Keliki, and SDN 2 Tegalalang. The population in this study were all fourth-grade elementary school students in Gugus VI, Kecamatan Tegalalang, for the 2017/2018 academic year, as many as 97 students, while the sample in this study was 78 students who were taken using a proportional random sampling technique. The methods used for data collection are questionnaires and document recording. Questionnaires were used to collect data about parenting styles, while document recording was used to collect data on parents’ education level and students’ mathematics learning outcomes. Before the questionnaires were distributed, the instrument was tested first, then the validity and reliability were tested. The instrument’s test aims to get an empirical description of whether the questionnaire is suitable for a good research instrument. Referring to the content validity test results, the parenting style questionnaire obtained a result of 1.00, which means that all questionnaire items are valid. Based on the empirical validity test results, all items obtained a score of rxy>rtable so that all questions were declared valid. Referring to the calculation of the reliability of parenting styles, it is known that the score of r11>rtable is 0.85>0.70, so the questionnaire has very high reliability. The analysis used in this research is descriptive analysis and inferential analysis. Descriptive analysis aims to determine parents’ high and low parenting styles, parents’ education level, and students’ mathematics learning outcomes. The mean, median, and mode results were obtained in the descriptive analysis. At the same time, the inferential test includes prerequisite tests and hypothesis testing. The prerequisite test includes normality, linearity, and multicollinearity tests. Hypothesis testing in this study uses regression which includes simple regression and multiple regression. Simple regression is used to determine the relationship between one of the independent variables on the dependent variable. At the same time, multiple regression is used to determine the relationship between the two independent variables on the dependent variable.

3. RESULT AND DISCUSSION

Result

Descriptive statistical analysis was performed with the help of SPSS 21.0 For Windows. The descriptive statistical analysis results include: (1) the mean parenting style is 82.64, the median is 83.00, and the mode is 81.00. The average score for parenting is 82.64, with a frequency of 32. When converted to PAP, a scale of five is in the high category. (2) The mean level of parental education is 8.70, the median is 9.00, and the mode is 8.00. The average score for parents’ education level is 8.70, with a frequency of 37. When converted to PAP, a scale of five is in a low category. (3) The mean of students’ mathematics
learning outcomes is 67.31, the median is 67.00, and the mode is 70.00. The average score of mathematics learning outcomes is 67.31, with a frequency of 52. When converted to PAP, a scale of five is in the sufficient category. Before testing the hypothesis, the analysis prerequisite tests were conducted: the normality test, linearity test, and multicollinearity test. All these prerequisite tests were analyzed with the help of SPSS 21.0 for Windows. The normality test was analyzed using the Kolmogorov-Smirnov technique, provided that if the Kolmogorov-Smirnov test results with p > 0.05, then the data is normally distributed. If p < 0.05, then the data is not normal. The analysis showed that the normality test of parenting (X1) obtained the Kolmogorov-Smirnov score of 0.200. This score indicates that the score of Kolmogorov Smirnov > 0.05 (0.200 > 0.05), it can be concluded that the parenting style data is normally distributed. Furthermore, the normality test of parents’ education level (X2) obtained the Kolmogorov-Smirnov score of 0.200. This score indicates that Kolmogorov Smirnov’s score > 0.05 (0.200 > 0.05), it can be concluded that the data on the education level of parents is normally distributed, and the normality test of students’ mathematics scores (Y) obtains a Kolmogorov-Smirnov score of 0.091. This score indicates that the score of Kolmogorov Smirnov > 0.05 (0.091 > 0.05), it can be concluded that the data of students’ mathematics scores are normally distributed.

This linearity test uses regression analysis techniques. The obtained Fcount score is compared with the Ftable score with a significant level of 5%. If Fcount < Ftable, it is declared to accept Ho with a linear style regression form, whereas if Fcount > Ftable, it is stated to accept Ha with a non-linear regression form. The results of the analysis between parenting parents (X1) and mathematics learning outcomes (Y) can be seen by looking at the results of Fcount on Deviation from Linearity, Fcount 0.559 < Ftable 3.970, because the Fcount result is smaller than the Ftable result, the data is linear or meaningful. The results of the analysis between parents’ education level (X2) and mathematics learning outcomes (Y) can be seen by looking at the results of Fcount on Deviation from Linearity, Fcount 1.658 < Ftable 3.970, because the Fcount result is smaller than the Ftable result, the data is linear or meaningful. The criteria for testing the multicollinearity test is if Fcount < Ftable, it is declared to accept Ho so that between independent variables, there is no multicollinearity, whereas if Fcount > Ftable, then it is declared to accept Ha. Based on the results of the analysis, the score of rx1x2 is 0.336 <0.800, from these results, it can be concluded that between the independent variables of parenting styles (X1) and parents’ education level (X2), there is no strong relationship or there is no multicollinearity. After testing the analysis prerequisites, all the conditions for testing the hypothesis are met. Furthermore, hypothesis testing was analyzed with the help of the SPSS Version 21.0 for the Windows program. The results of the hypothesis testing that has been carried out are presented in Table 1.

### Table 1. Hypothesis Test Results

<table>
<thead>
<tr>
<th>Hypothesis Test</th>
<th>r_count</th>
<th>r_table</th>
<th>Coefficient of Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>0.717</td>
<td>0.227</td>
<td>51.4%</td>
</tr>
<tr>
<td>II</td>
<td>0.430</td>
<td>0.227</td>
<td>18.5%</td>
</tr>
<tr>
<td>III</td>
<td>0.745</td>
<td>0.227</td>
<td>55.5%</td>
</tr>
</tbody>
</table>

The first hypothesis test was carried out using a simple regression technique, which was then continued with calculating the product moment. The analysis of the relationship between parenting style variables (X1) on students’ mathematics learning outcomes obtained was 0.717. Based on the calculation, it obtained rcount > rtable or 0.717 greater than 0.227, so the score of rcount is significant. Thus, Ho is rejected, and Ha is accepted. So, it can be concluded that there is a positive and significant relationship between parenting style and learning outcomes for fourth graders at SD Gugus, Kecamatan Tegalalang. Based on the calculation, the coefficient of determination is 51.4%.

The second hypothesis test was carried out using a simple regression technique, which was then continued with calculating the product moment. The results of the correlation analysis of parents’ education level (X2) on mathematics learning outcomes (Y) the calculation obtained is 0.430. Based on the calculation, it is obtained that rcount > rtable or 0.430 is greater than 0.227, so the score of rcount is significant. Thus, Ho is rejected, and Ha is accepted. So it can be concluded that there is a positive and significant relationship between the level of parental education on the mathematics learning outcomes of fourth-grade elementary school students in Gugus VI, Kecamatan Tegalalang. Based on the calculation, the coefficient of determination is 18.5%.

The third hypothesis test was conducted using the multiple regression techniques. The analysis results obtained Fcount = 46,704 with a significance of 0.000; if the score of Ftable is compared with Fcount, namely Fcount 46,704 > Ftable 3.120, this means that the results of the study are significant. Based on the study’s results, the score of r was 0.745 when compared with the score of r at a significance
level of 5%, namely 0.227, so it can be concluded that \( \text{r}_{\text{count}} 0.745 > \text{r}_{\text{table}} 0.227 \) then \( H_0 \) is rejected, which means it is significant. Thus, it can be concluded that there is a positive relationship between parenting styles and parental education level in the mathematics learning outcomes of fourth-grade elementary school students in Gugus VI, Kecamatan Tegalalang, 2017/2018 academic year. Referring to the calculation, the coefficient of determination is 55.5%.

### Discussion

Based on the results of the first simple regression analysis, it is known that there is a positive relationship between parenting styles and mathematics learning outcomes for fourth-grade elementary school students in Gugus VI, Kecamatan Tegalalang, 2017/2018 academic year. This study found a positive and significant correlation, which means that the higher the parenting style of the students, the higher the student's mathematics learning outcomes. This study's results align with previous research, which states a relationship between parenting styles and learning outcomes in mathematics (Budang et al., 2017; Juniarti et al., 2020). The level of student learning outcomes in mathematics depends on the parenting applied by parents at home. This is in line with the opinion which states that if family education can take place properly, it will foster the development of the child’s personality into an adult human who has a positive attitude towards religion, a strong and independent personality, physical and spiritual potential as well as optimally developing intellectuals (Budiarnawan et al., 2014). Thus parents need to pay attention to the parenting given to their children.

The parenting style of children's education is important for child development (Fishbein & Ajzen, 1975; Tocu, 2014). Likewise, in achieving maximum children's mathematics learning outcomes, people have an important role for their children. In line with this, parents still have to give attention, guidance, escort, and a positive attitude towards improving their children's academic achievement (Ismail, 2017). The good attitude of parents in teaching and educating their children will make them good and educated. This is related to the finding that most parents and teachers have recognized the importance of mathematics in their children and daily life (Al-Mahdi, 2010). Looking at the results of the analysis and findings in other studies by this research, it can be concluded that there is a positive relationship between parenting styles and the mathematics learning outcomes of fourth-grade elementary school students in Gugus VI Kecamatan Tegalalang, 2017/2018 academic year.

Referring to the results of the second simple regression analysis, it is known that there is a positive relationship between the education level of parents and the mathematics learning outcomes of fourth-grade elementary school students in Gugus VI, Kecamatan Tegalalang, 2017/2018 academic year. In this study, a positive and significant relationship was found, which means that the higher the education level of the student's parents, the higher the student's mathematics learning outcomes. This study supports research that says the level of education of parents of fourth graders at SDN Gugus Erlangga has a positive and significant relationship to student learning outcomes (Suarlin et al., 2021). Parents with a high education level try to support their children’s learning needs to achieve maximum learning outcomes. It is in line with the opinion which states that parents not only meet the needs of their children materially, but parents must also meet the educational needs of their children from the age of compulsory education to become the next generation and have a higher education than the education possessed by Parental education is one of the important determinants of children's education (Pufall et al., 2016). Parents who received higher education certainly differ from parents who received low education in educating their children. It is in line with the opinion that the background of a high level of parental education has a major influence on overall student learning outcomes (Cholifah et al., 2016). This opinion is also in line with the opinion which states that the education that parents have previously taught has more or less an influence on the attitudes and perspectives of parents on something, for example, the perspective of parents regarding their children’s education (Ayuni, 2015). The higher the level of parents' education, the more experience they will get, so they can better guide children in learning.

Based on the results of the analysis and findings in other studies that are following this research, it can be concluded that there is a positive relationship between the educational level of parents and the mathematics learning outcomes of fourth-grade elementary school students in Gugus VI Kecamatan Tegalalang for the 2017/2018 school year. Based on the results of the multiple regression analysis that has been carried out, it can be seen that there is a positive relationship between parenting styles and the level of parental education in the mathematics learning outcomes of fourth-grade elementary school students in Gugus VI Kecamatan Tegalalang. The positive correlation coefficient \( \text{r}_{\text{count}} 0.745 \) and \( \text{r}_{\text{table}} 0.227 \) indicates a significant relationship between the two factors. This finding is consistent with previous studies which have shown that the higher the parental education level, the higher the mathematical learning outcomes of fourth-grade elementary school students. The level of parental education is a key factor in determining a child’s future success in mathematics learning.
students in Gugus VI, Kecamatan Tegalalang for the 2017/2018 academic year. In this study, a positive and significant relationship was found, which means that the higher the parenting style and education level of the student's parents, the higher the student's mathematics learning outcomes. This study's results align with research that states that the level of education and parenting of parents have a positive and significant relationship with student learning outcomes (Suarlin et al., 2021).

The high and low level of parental education affects the parenting applied by parents in achieving children’s learning outcomes. In line with this, parents with a high education level will provide direct support to their children, such as helping with homework, so that children can perform better than children whose parents have low levels of education (Eryanto & S, 2013). Parents with a high education level know more about raising children to achieve optimal learning outcomes. It is in line with the opinion that the knowledge possessed by highly educated parents is generally open and able to treat children positively, such as paying great attention to the development and education of children (Cholifah et al., 2016). In line with this opinion, the attitude of parents who are open and always provide time will help children understand themselves, which are constantly changing, and will also help children increase their enthusiasm for learning (Harianti & Amin, 2016). That's when parents play an important role in providing children with early experiences in developing knowledge and skills (Malta in Halim, 2017) so that children can achieve optimal learning outcomes if children are given good parenting styles such as paying attention, helping in learning, and always providing time for children.

4. CONCLUSION

There is a positive relationship between parenting styles and mathematics learning outcomes for fourth-grade elementary school students in Gugus VI, Kecamatan Tegalalang, 2017/2018 academic year. There is a positive relationship between the education level of parents and the mathematics learning outcomes of fourth-grade elementary school students in Gugus VI, Kecamatan Tegalalang, 2017/2018 academic year. There is a positive relationship between parenting and parental education level with the mathematics learning outcomes of fourth-grade elementary school students in Gugus VI, Kecamatan Tegalalang, 2017/2018 academic year. Parents of students with a high level of education are recommended to share information with parents of students who have a low level of education about how to raise children well, considering that parents who have a higher level of education have more educational experience, so they are more capable of parenting. This information-sharing activity is to obtain optimal student mathematics learning outcomes. For researchers interested in conducting further research on parenting styles, parental education levels, and learning outcomes of mathematics and other appropriate fields of science, pay attention to the constraints experienced in this study as consideration for improvement and refinement of research that will be carried out.

5. REFERENCES


