



The Role of Teachers' Teaching Styles in Improving Mathematics Learning Motivation in Elementary Schools

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ABSTRACT

Purpose of the study: The aim of the research is to determine the influence of teacher teaching style on students' motivation to learn mathematics.

Methodology: This research was conducted at 166 Turucinnae State Elementary School, Bone Regency, with 60% of the 100 students as samples, while data collection used a questionnaire technique, namely a closed questionnaire. In this study, descriptive analysis and inferential analysis were used.

Main Findings: The results of the data analysis show that the teacher's teaching style (X) has a significant influence on learning motivation (Y) which is indicated by the correlation coefficient value of obtained at a significance level of 5%. In this case, H1 is accepted and H0 is rejected. From these results, it is proven that there is an influence of the teacher's teaching style on the motivation to learn Mathematics of students at State Elementary School 166 Turucinnae, Bone Regency.

Novelty/Originality of this study: The results of this study offer an innovative approach for teachers to adapt a more effective teaching style in encouraging students' interest and enthusiasm for learning mathematics in the primary education sector.

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1. INTRODUCTION

Teachers are professional educators whose main task is to educate, teach, guide, direct, train, assess, and evaluate students [1]-[3]. This is in accordance with the mandate of the Minister of National Education Regulation Number 74 of 2008, which emphasizes the important role of teachers in building the next generation of the nation. In addition to formal duties, teachers also have social responsibilities outside the service as a form of community service [4], [5]. In carrying out their duties, teachers act as agents of change that support the progress of education [6], [7]. Therefore, teacher professionalism is an important element in creating an effective learning process.

The duties of a teacher include three main aspects: educating, teaching, and training [8]-[10]. Educating means instilling good life values in students so that they can become individuals with character [11]-[13]. Teaching refers to the process of effectively transferring knowledge and technology to students [14], [15]. Meanwhile, training aims to develop the skills needed by students to face future challenges. Thus, these three aspects complement each other to form students who are knowledgeable and have superior personalities.

A teacher also has a role as a second parent at school, who must be able to establish an emotional relationship with students [16], [17]. This good relationship is important to attract students' attention and make the teacher an idolized figure. Teachers who succeed in attracting the sympathy of their students will find it easier to convey learning materials [18], [19]. In addition, this role allows teachers to motivate students to continue learning with enthusiasm. The motivation given by teachers is an important element in creating a conducive and supportive learning environment [20], [21].

Mathematics is one of the subjects that is often considered difficult by students, so it requires the right approach from teachers [22]-[24]. Motivation to learn is the key to overcoming students' difficulties in understanding this lesson [25]-[27]. In psychology, motivation is an internal force that drives someone to achieve certain goals. Teachers have an important role in providing motivation to students through a positive approach [28]-[30]. With good motivation, students will feel more confident in learning and facing academic challenges.

However, monotonous and teacher-centered teaching styles often become obstacles in the learning process. Many teachers still use lecture methods that do not actively involve students, making students quickly bored [31]-[33]. The lack of variation in teaching methods can also cause students to lose interest in the lesson [34], [35]. This is exacerbated by an approach that only focuses on academic aspects without paying attention to students' emotional needs. As a result, students tend to feel stressed and less motivated to learn.

Research conducted at State Elementary School 166 Turucinnae, Bone Regency, showed that the low quality of teacher teaching style has a negative impact on student learning motivation. Students tend to be less enthusiastic, noisy, sleepy, and do not pay attention to the mathematics lessons delivered. This situation indicates a problem that needs to be addressed immediately so that the learning process becomes more effective. One solution that can be done is to improve the teacher's teaching style to be more interesting and varied. Thus, students will be more motivated to learn and achieve better results.

Research conducted by Mudzakkir and Darmawan [36] highlighted the influence of teacher teaching style and learning motivation on student learning achievement in general in an Islamic educational environment, while Huang and Zheng [37] examined the relationship between teaching style and learning effectiveness through learning motivation in students in the context of advanced mathematics lectures. Both studies place learning motivation as a mediating or determining variable in improving learning outcomes, but with different educational level and population contexts. The gap filled by this study lies in its more specific focus on elementary school level and direct emphasis on the relationship between teaching style and mathematics learning motivation without involving learning outcome variables as output. Thus, this study provides a new contribution in clarifying the role of teacher teaching style on students' mathematics learning motivation at the elementary level, which has not been widely explained empirically in previous literature.

This study has significant novelty and urgency because it specifically explores the influence of teacher teaching style on mathematics learning motivation in elementary school students, a level that is very crucial in forming students' cognitive and affective foundations. Different from previous studies that have focused more on secondary or higher education levels, this study highlights how variations in teaching style can directly affect students' enthusiasm and interest in learning from an early age. The urgency of this study is also reinforced by the fact that mathematics is often considered a difficult subject by students, so it requires the right pedagogical approach so that students not only understand the material but are also motivated to learn continuously. By placing teaching style as the main variable and learning motivation as the focus of the output, this study provides practical contributions for teachers and stakeholders in elementary education in designing more interesting, humanistic, and effective learning strategies.

This study aims to analyze the influence of teacher teaching style on students' mathematics learning motivation at State Elementary School 166 Turucinnae, Bone Regency. A quantitative approach is used to collect data objectively and systematically. The results of this study are expected to contribute to improving the quality of mathematics learning in schools. In addition, this study is also expected to help teachers develop more effective teaching methods. Thus, students' learning motivation can increase, so that the learning process becomes more optimal.

2. RESEARCH METHOD

2.1. Types and Research Designs

The type of research used is quantitative correlational research. Judging from its type, there is an independent variable in the form of teacher teaching style (X) with a dependent variable of Mathematics learning motivation (Y). Research is basically a systematic activity or process to solve problems carried out by applying scientific methods [38], [39].

2.2. Research Design

Research design is a plan and structure used to obtain empirical evidence and answer research statements. In this study, to obtain data on the influence of teacher teaching style on students' mathematics learning motivation,

a questionnaire will be used, namely a list of questions that will be filled in by respondents, in this case all students of 166 Turucinnae State Elementary School, Bone Regency. The research design can be described as follows:

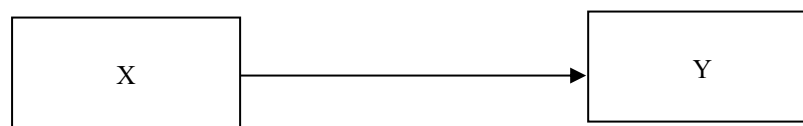


Figure 1. Research Design

Description: the independent variable (X) is the teacher's teaching style, the dependent variable (Y) is the motivation to learn mathematics, the relationship (\rightarrow) is the influence between variable X and variable Y.

2.3. Population and Sample

Population is a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then conclusions drawn [40]-[42]. The population in this study was 60% of the total number of students at State Elementary School 166 Turucinnae, Bone Regency. Based on data obtained from the potential board, the total number of students was 100 students.

The technique of determining the sample to be used as the subject of the study is carried out using the method (sampling technique). Sampling technique is a way to determine a sample whose number is in accordance with the sample size that will be used as the actual data source [43], by considering the characteristics and distribution of the population in order to obtain a representative sample. From a total population of 100 students, the total number of students used as samples was 60 students, with details of class I samples (10 students), class II (12 students), class III (7 students), class IV (10 students), class V (12 students), and class VI (9 students).

2.4. Research Procedures

A research can run well if the research procedure has been determined before being carried out in the field. The research procedure includes several systematic steps, namely conducting initial observations to understand the research context, determining the population and sample as research subjects, and compiling and determining the procedures to be used during the research process. Furthermore, researchers compile research instruments that are in accordance with the research objectives, conduct classroom teaching and learning observations, and distribute questionnaires to respondents to collect data. The final step is to analyze the data obtained to obtain relevant findings and support the research objectives.

2.5. Research Instruments and Data Collection Techniques

The instrument used in this study was a closed questionnaire, namely a questionnaire that has been equipped with alternative answers, so that respondents only need to choose one of the answers provided [44]. Each aspect in this study contains items in the form of positive or favorable questions, and items in the form of negative or unfavorable statements. The questions compiled as a research instrument use 4 alternative answers, namely strongly agree, agree, disagree, and disagree [45].

Items in the form of positive or favorable statements, the answer score will move from a value of 4 for the answer strongly agree (SS), a value of 3 for the answer agree (S), a value of 2 for the answer less agree (KS) and a value of 1 for the answer disagree (TS). Items in the form of negative or Unfavorable, the answer score moves from a value of 1 for the answer strongly agree (SS), a value of 2 for the answer agree (S), a value of 3 for the answer less agree (KS), and a value of 4 for the answer disagree (TS). In the implementation of the study, subjects were asked to choose one of the four possible answers available. The higher the score obtained by the subject, the higher the student's learning motivation, and the lower the score obtained, the lower the student's learning motivation.

2.6. Data Analysis Techniques

In quantitative research, data analysis is an activity after data from all respondents is collected. Activities in data analysis are: grouping data based on variables and types of respondents, compiling data based on variables from all respondents, presenting data for each variable studied, performing calculations to answer the problem formulation, and performing calculations to test the hypothesis that has been proposed. The data analysis technique in this study uses descriptive and inferential analysis. Descriptive analysis is used to describe the data [46]. This method is used to examine the variables in this study, namely the influence of teacher teaching on student learning motivation. Inferential analysis techniques are used and shown to test the research hypothesis that has been set [47]. Hypothesis testing is intended to answer the hypothesis that has been proposed.

3. RESULTS AND DISCUSSION

3.1. Descriptive Analysis

3.1.1. Descriptive Analysis of Teachers' Teaching Styles

Teaching style can be interpreted as the teacher's actions in the context of the teaching and learning process that aims to overcome student boredom, so that in the learning process students always show perseverance, enthusiasm, and play an active role. Based on the research that has been done, the teacher's teaching style is in the good category, as can be seen in the following table:

No.	Category	Frequency	Percentage (%)
1.	Very Good	17	28.33
2.	Good	36	60.00
3.	Quite Good	7	11.66
4.	Not Good	0	0.00
5.	Very Not Good	0	0.00
	Amount	60	100.00

As seen in the table above, 28.33% of students stated that the teacher's teaching style was very good, 60.00% of students said that the teacher's teaching style was good, 11.66% of students said that the teacher's teaching style was quite good and 0% of students said that the teacher's teaching style was low and very low. It is concluded that the teacher's teaching style is stated in the good category.

3.1.2. Descriptive Analysis of Learning Motivation

Motivation is a change in energy within a person that is marked by the emergence of "feeling" and preceded by a response to the existence of a goal. From the definition put forward by Mc. Donald, it contains three important elements. Based on the research that has been conducted, it was obtained that the student's learning motivation is in the high category, as can be seen in the following table:

No.	Category	Frequency	Percentage (%)
1.	Very High	31	51.66
2.	High	29	48.33
3.	Fair	0	0.00
4.	Low	0	0.00
5.	Very Low	0	0.00
	Jumlah	60	100.00

It can be seen in the table above that 51.66% of students have very high learning motivation, 48.33% of students have high learning motivation, and 0% of students have moderate, low and very low learning motivation. It was concluded that all students in grades I – VI had very high motivation to learn.

3.2. Inferential Analysis

In accordance with the research hypothesis, namely "There is an influence of teacher teaching style on the motivation to learn mathematics of students at State Elementary School 166 Turucinnae, Bone Regency", from the calculations that have been carried out, it turns out that the correlation figure between variable X and variable Y is positive, this is by considering the amount obtained, which is 0.67. This means that there is a positive correlation between the influence of teacher teaching style on the motivation to learn mathematics of students at State Elementary School 166 Turucinnae, Bone Regency. The technique used to test the hypothesis is the inferential analysis technique using the t-test of 7.711.

Based on the results of observations that have been made, researchers see the teaching style of mathematics teachers at State Elementary School 166 Turucinnae, Bone Regency, implementing teaching methods that are appropriate to the grade level of elementary school students. It is also seen that the teacher's teaching method uses technological teaching style techniques, meaning that the teacher pays attention to the readiness and interest of students in following the lesson and uses aids in the form of media, to help students understand better.

In the research implementation process section, the condition of the sample class to be studied will be discussed, namely class I - VI using a questionnaire based on teacher teaching style indicators totaling 22 questions or statements. The purpose of using a questionnaire based on teacher teaching style indicators is as one strategy to determine student learning motivation for Mathematics subjects. The implementation process of this research was carried out at State Elementary School 166 Turucinnae, Bone Regency for 2 months.

The researcher told the students that before giving the questionnaire results to the homeroom teacher as one of the supporting factors for student learning outcomes, the researcher first processed and calculated the average results of the questionnaire. Based on the results of the r_{xy} value data through the method: then the researcher gave an interpretation value through the method: Interpretation in a simple or rough way r_{xy} from the calculation above, it turns out that the correlation number between variables x and y is not marked negative, meaning that there is a positive correlation between the two variables (correlation that runs in the same direction). By paying attention to the magnitude of r_{xy} (which is $= 0.67$ which ranges from $0.5-0.75$) means that the positive correlation between variables X and Y is a high variable.

The results of this study provide a strong picture of the relationship between teacher teaching style and student learning motivation, especially in the context of mathematics learning in elementary schools. Based on the results of descriptive analysis, it is known that the majority of students rated their teacher's teaching style in the categories of "good" (60%) and "very good" (28.33%). This assessment shows that teachers are able to apply an interesting, interactive, and appropriate teaching approach to the developmental level of elementary school students. This approach seems to be able to not only maintain student attention but also encourage active participation in the teaching and learning process. This is in line with Rosalia opinion [48] which states that an effective teaching style plays an important role in increasing student engagement and creating a positive learning experience.

In addition, the data also shows that students' learning motivation is at a very high level, where 51.66% of students are in the "very high" category and 48.33% are in the "high" category, with no students in the "moderate", "low", or "very low" categories. This finding indicates that students are not only interested in mathematics but also have a strong internal drive to achieve. In the context of educational psychology, learning motivation is an important affective component that influences the achievement of learning outcomes, and can be significantly influenced by the learning environment, including the teacher's teaching style [49], [50].

Inferential analysis strengthens this finding by showing that there is a fairly high positive correlation ($r = 0.67$) between teacher teaching style and students' mathematics learning motivation. This value is in the high correlation range ($0.50-0.75$), which means that the better the teacher's teaching style, the higher the students' learning motivation. The t -test of 7.711 also shows the statistical significance of the relationship. This means that the teacher's teaching style is not just an additional factor, but a factor that directly impacts students' enthusiasm for learning mathematics. Teaching style not only has a direct impact on learning effectiveness, but also works through increasing learning motivation as a mediating variable [51].

The context of elementary education in this study is an important point that adds novelty and urgency to this study. At this level of education, students are still very dependent on teachers as central figures in the learning process. Therefore, a teaching style that is able to build emotional closeness, provide participatory space, and utilize relevant learning media is very influential in shaping students' motivation and attitudes towards subjects, including mathematics which is often considered difficult and challenging. A teaching style that is rigid, monotonous, and only oriented towards delivering material has been shown to actually reduce students' interest and enthusiasm for learning.

In this context, the teaching style applied by teachers at Public Elementary School 166 Turucinnæ has shown a positive response from students. Teachers use a technology-based approach and assistive media, and pay attention to students' readiness and interest in the material presented. This is in line with the results of observations showing that teachers adjust their teaching methods to the age characteristics of students, something that is very crucial at the elementary school level. This study also emphasizes that increasing learning motivation is not solely the result of internal student factors, but is greatly influenced by how teachers create a supportive, enjoyable, and relevant learning environment for students' daily lives.

However, it is important to note that although the correlations found are quite high, this study is correlational, so it cannot be concluded that there is a direct cause-and-effect relationship. Therefore, further research needs to develop experimental or quasi-experimental designs, and consider other variables such as student personality, parental involvement, or classroom climate as mediating or moderating factors. Nevertheless, the results of this study have shown the urgency to reflect on the teaching practices of teachers in elementary schools, especially in subjects such as mathematics that require an adaptive and motivating pedagogical approach.

Overall, this study provides a real contribution in strengthening the understanding that teacher teaching style is one of the main keys in building student learning motivation. Teachers not only function as conveyors of material, but also as facilitators who play a role in shaping students' attitudes, interests, and enthusiasm in learning. Therefore, improving teacher pedagogical competence, including in choosing and implementing appropriate teaching styles, should be the main focus in developing teacher professionalism at the elementary school level.

4. CONCLUSION

Based on the results of the research that has been conducted, it can be concluded that the teaching style of mathematics teachers at State Elementary School 166 Turucinnæ, Bone Regency has been in accordance with

the grade level of elementary school students. There is an influence between the teacher's teaching style and student learning motivation of 1%, which shows that the increase or decrease in student learning motivation is influenced by the teacher's ability to teach and manage the class during the learning process. The more interesting the teaching style or the teacher's ability to teach, the higher the student learning motivation achieved. The results of this study also show a significant influence between the teacher's teaching style and student learning motivation at State Elementary School 166 Turucinnae, Bone Regency. Further research is suggested to explore the role of mediating or moderating variables such as student engagement or classroom climate in the relationship between teaching style and learning motivation. In addition, the scope of the study could be expanded to different levels of education or comparisons could be made across regions to see contextual variations that may influence the results.

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