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The Impact of Learning Style and Learning Motivation on Students' Science Learning Outcomes

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ABSTRAK

Siswa sekolah dasar cenderung memiliki gaya belajar yang berbeda-beda, hanya saja guru masih belum dapat menyesuaikan proses pembelajaran dengan gaya belajar yang dimiliki siswa serta belum secara maksimal memberikan motivasi belajar yang baik, sehingga hal ini berdampak pada rendahnya hasil belajar IPA siswa. Adapun tujuan dari penelitian ini yakni untuk menganalisis hubungan yang signifikan antara gaya belajar dengan hasil belajar IPA. Penelitian ini tergolong kedalam jenis penelitian korelasi, dengan jumlah populasi penelitian yakni 196 siswa. Penarikan sampel dalam penelitian dilakukan dengan teknik sampel proporsional, dengan jumlah sampel akhir yakni 149 responden. Pengumpulan data dalam penelitian dilakukan menggunakan metode non tes, dengan instrument penelitian berupa lembar angket tingkat motivasi belajar dan gaya belajar. Pengujian validitas instrument penelitian dilakukan melalui uji pakar (judges). Analisis data menggunakan analisis statistik deskriptif dan analisis statistik inferensial. Metode analisis statistik deskriptif mengolah deskriptif, sedangkan statistik inferensial pengolahan data menerapkan rumus-rumus statistik inferensial. Hasil uji hipotesis I menunjukkan bahwa 0,609 > 0,159, sehingga hipotesis 1 diterima, yaitu terdapat korelasi gaya belajar terhadap hasil belajar IPA. Hasil hipotesis 2 yaitu 0,625 > 0,159, sehingga terdapat korelasi motivasi belajar terhadap hasil belajar IPA siswa. Hasil hipotesis 3 yaitu 0,625 > 0,159, sehingga terdapat korelasi gaya belajar dan motivasi belajar terhadap hasil belajar IPA. Berdasarkan hasil tersebut maka dapat disimpulkan bahwa gaya belajar dan motivasi siswa saat belajar memiliki pengaruh yang signifikan terhadap peningkatan hasil belajar siswa.

ABSTRACT

Elementary school students tend to have different learning styles. Teachers can still not adjust the learning process to the student's learning styles and have not maximally provided good learning motivation, which impacts students' low science learning outcomes. This study analyzes the significant relationship between learning styles and science learning outcomes. This research is classified into the type of correlation research, with the research population being 196 students. The study was conducted using a proportional sampling technique, with a final sample size of 149 respondents. Data collection in the study was conducted using a non-test method, with the research instrument in the form of a questionnaire on the level of learning motivation and learning style. The research instrument's validity was tested through expert tests (judges). Data analysis used descriptive statistical analysis and inferential statistical analysis. The descriptive statistical analysis method processes descriptive, while inferential statistics data processing applies inferential statistical formulas. The first hypothesis test results show 0.609 > 0.159, so hypothesis 1 is accepted. There is a correlation between learning styles and learning outcomes in science. The results of hypothesis 2 are 0.625 > 0.159, so there is a correlation between learning motivation to students' science learning outcomes. The results of hypothesis 3 are 0.625 > 0.159, so there is a correlation between learning styles and learning motivation on science learning outcomes. Based on these results, it can be concluded that learning styles and students' motivation while studying significantly influence student learning outcomes.

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1. INTRODUCTION

Science is one of the subjects that must be taught to students starting from the elementary school level to the high school level. It is because, through science education, students gain the ability to think critically and make the right decisions to improve their quality of life in a society with good knowledge and science (Andriana et al., 2017; Anif et al., 2020). The science learning process at the elementary school level has an important role because it can influence students' interest in learning for a higher level. Science learning activities in elementary schools play an important role because they affect students' interests or tendencies in learning science (Lestari et al., 2021; Shaleha et al., 2020; Suparmi, 2018). In addition, through learning science, students will be able to develop knowledge and understanding of science that are useful for students (Clarisa et al., 2020; Melda et al., 2021; Prasetyono & Trisnawati, 2018). The success or failure of the science learning process at the basic education level can be seen in student learning outcomes. Learning outcomes refer to student learning achievements within a certain period. Through learning outcomes, the teacher will be able to determine the level of student abilities and find out whether the learning objectives have been achieved or not (Irawati et al., 2021; Sitiman, 2021; Wijayama, 2020).

The reality shows that science learning is still not running optimally (Makhrus et al., 2018; Wijanarko et al., 2017). Science learning in the classroom tends to make students bored because of the lack of use of models and learning media (Anggraini & Perdana, 2019; Laksmi & Suniasih, 2021). Gugus V and Kecamatan Manggis's observations showed that the learning styles or students' motivation was still lacking in learning science. Some students only focus on listening to the teacher's explanation of the learning material. Some students take notes on the explanation given by the teacher. This confirms that learning styles and motivation have an important role in learning. Students' abilities will tend to be more easily achieved when learning follows their learning style (Istikomah & Usman, 2019; Priyaadharshini & Sundaram, 2018; Weng et al., 2019).

The learning process adapted to students' learning styles will make students process teaching materials faster because they have their hobbies or uniqueness from learning information processing activities (Laksana et al., 2019; Zulfiani et al., 2020). It causes each individual to have a different and unique learning style. Each learning style affects students' ability to process information (Margunayasa et al., 2019; Priantini & Widiastuti, 2021). Students' learning style also reflects how they learn to understand the material presented by the teacher or studied by themselves (Rasheed & Wahid, 2021; Shamsuddin & Kaur, 2020). The key to the success of learning activities that teachers must pay attention to is the unique learning styles of each student (Nurlia et al., 2017; Prayekti, 2018). Learning style can determine the quality of the learning. Learning styles are generally divided into three parts: visual, auditory, and kinesthetic (Wulandari & Agustika, 2020).

In addition to learning styles, things that have a big role in achieving learning objectives are learning motivation. The success of learning can be seen through student learning motivation (Mahendra, 2017; Yulianto et al., 2020; Zhu et al., 2020). Motivation is a state that causes students to act clearly in meeting predetermined goals (Aguirre et al., 2016; Trautner & Schwinger, 2020). This learning motivation can be known through the level of student activity when participating in learning. The higher the student's learning motivation, the higher the enthusiasm and student learning outcomes. It confirms that learning motivation is directly related to student learning outcomes (Amdany et al., 2018; Rachmavita, 2020; Tang et al., 2020). This learning style and learning motivation certainly affect student learning outcomes. Motivation and learning styles must also be balanced to realize appropriate learning outcomes. The important influence of learning styles and motivation on implementing learning activities is important. Students learning styles are adapted to learning conditions at school, or the use of media improves results (Kryshko et al., 2021; Rahmat & Akbar, 2019). Active students are based on high student motivation (Bećirović, 2017; Taştan et al., 2018). Motivation and learning styles significantly influence learning activities that can improve learning outcomes (Noervadila & Misriyati, 2020; Sucia, 2017).

Several studies that have been conducted previously revealed that motivation has a significant influence on the learning outcomes of elementary school students in science (Pratama et al., 2019). Other studies also reveal that in addition to influencing science learning outcomes, learning motivation also affects students' mathematics learning outcomes (Novianti et al., 2020). Other research reveals that learning styles improve student learning outcomes (Irawati et al., 2021). Based on some of the results of these studies, it can be said that motivation and learning styles affect student learning outcomes. In previous studies, no studies specifically discussed the contribution of learning styles and motivation to science learning outcomes. So this research is focused on this study to analyze the significant relationship between learning styles and science learning outcomes.

2. METHOD

This research belongs to the ex post facto research that examines the correlation between learning motivation and learning style in improving student learning outcomes. The research was carried out in Gugus V, Kecamatan Manggis, with a population of 196 elementary school students. The research was conducted using a proportional sampling technique, with a final sample size of 149 respondents. Data collection in the study was

conducted using a non-test method, with the research instrument in the form of a questionnaire on the level of learning motivation and learning style. The research instrument grid is presented in Tables 1, and Table 2.

Table 1. Learning Style Instrument

Sub Variable	Indicator
Visual	1. easy to remember 2. Focus on appearance. 3. Love to read.
Auditorial	1. Learn to listen 2. read aloud 3. Love to talk
Kinesthetic	1. Memorize by walking and seeing. 2. Learn with practice. 3. Using a finger as a pointer

Table 2. Learning Motivation Instrument

Variable	Indicator	Statement		Total
		Positive	Negative	
Learning Motivation	Desire Succeeds.	1,3	2,4	4
	There Is Encouragement	5,8	6,7	4
	Hope.	9,10	11, 12	4
	Appreciation	13,14	15, 16	4
	Interesting Activities	18	17	2
Total				**20**

The research instrument's validity was tested through expert tests (judges). Data analysis used descriptive statistical analysis and inferential statistical analysis. The descriptive statistical analysis method processes descriptive, while inferential statistics data processing applies inferential statistical formulas.

3. RESULT AND DISCUSSION

Result

Analysis of the data that has been obtained in the form of descriptive analysis to get the results of each variable such as X1 Learning Style, X2 Learning Motivation, and Y for Science Learning Outcomes. The first analysis relates to data on student learning styles with a minimum score of 45 and a maximum score of 100. The average score is 74.68. The standard deviation is 9.425, with a total variance of 88,839. The mean is 74.68, the median is 74.00, and the mode is 70. The classification results indicate that the average learning style is 74.68, which is classified into the good category. The graph of the analysis of student learning styles is presented in Figure 1.

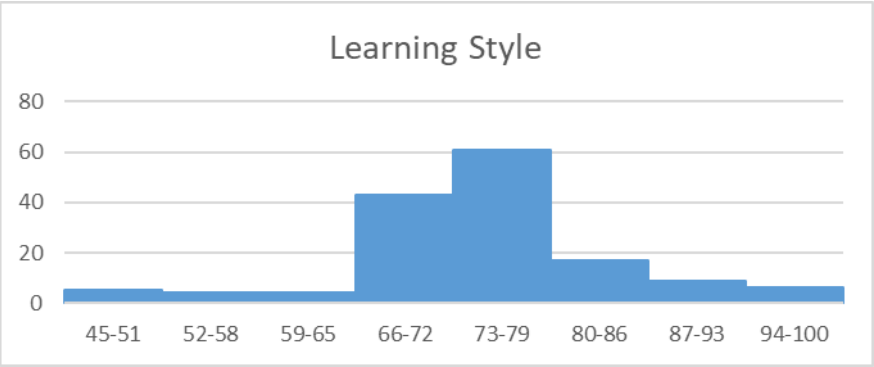

Figure 1. Learning Style Chart

The second analysis is of learning motivation, with a minimum score of 70 and a maximum score of 100. The average score is 86.28, the standard deviation is 6,828, and the total variance is 46 620. The mean is 86.28, the media is 86, and the mode is 84. The results of the classification data indicate that the average score of students' learning motivation is 86.28, which is very good. The graph of student learning motivation can be seen in Figure 2.

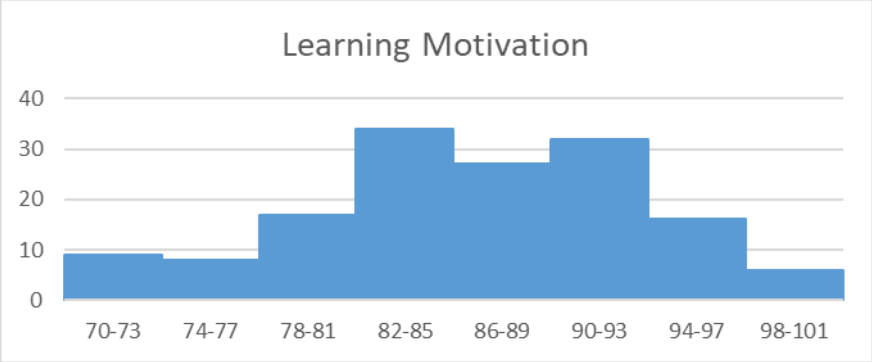

Figure 2. Learning Motivation Graph

The third analysis, namely the analysis of science learning outcomes data, has a minimum score of 75 and a maximum score of 90. The average score is 80.72. The standard deviation is 2.909, with a total variance of 8.461. The mean is 80.72, the media is 80, and the mode is 80. The results of the classification data indicate that the average science learning outcome is 80.72. Based on these data, it can be concluded that the data is classified as very good. The graph of science learning outcomes can be seen in Figure 3.

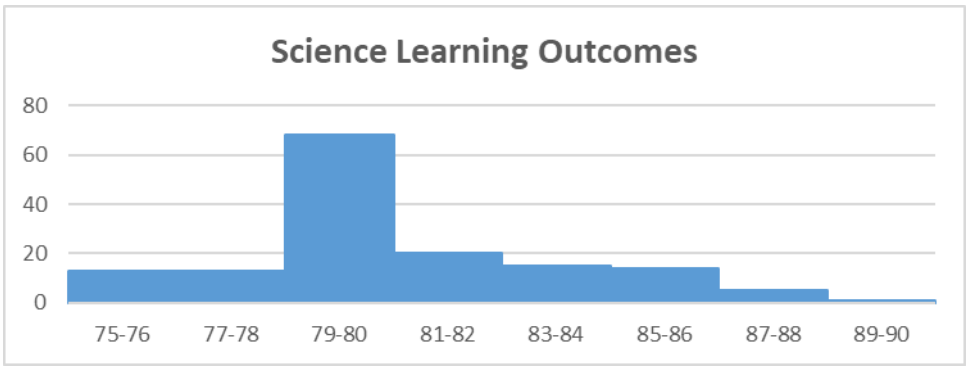

Figure 3. Graph of Science Learning Outcomes

The normality test results showed 0.152 > 0.05, normally distributed, while the linearity test results showed 0.553 > 0.05. The score of Sig Deviation from Linearity is 0.191 > 0.05, so it can be concluded that there is a linear relationship. The results of the multicollinearity test, namely 0.953 and 0.953, concluded that there were no symptoms of multicollinearity. In the results of the heteroscedasticity test, the learning style variable was 0.087, and the learning motivation was 0.055 > 0.05, so the data did not experience symptoms of heteroscedasticity. The results of hypothesis testing are as follows. The first hypothesis is rcount > rtable (0.609 > 0.159). So that the first hypothesis is accepted, there is a significant correlation between learning styles and learning outcomes in science. The second hypothesis (0.625 > 0.159). So that the second hypothesis is accepted, there is a significant correlation between learning motivation on science learning outcomes. The third hypothesis (0.625 > 0.159). there is a significant correlation between learning styles and motivation in science learning outcomes.

Discussion

Research on the correlation between learning styles and learning motivation on science learning outcomes shows three main findings. The first finding shows that learning styles are important in improving outcomes. Learning style is a method/technique students use during the learning process. This learning style provides a sense of comfort to students during the learning process, where each student tends to have a different learning style. The learning style possessed by students can reflect how they learn so that they can understand the material presented by the teacher or the material studied by themselves (Rasheed & Wahid, 2021; Shamsuddin & Kaur, 2020). The right learning style can improve students' understanding of learning (Margunayasa et al., 2019; Shamsuddin & Kaur, 2020). The key to the success of learning activities that teachers must pay attention to is the unique learning styles of each student (Nurlia et al., 2017; Prayekti, 2018). Each learning style affects students' ability to process information (Margunayasa et al., 2019; Priantini & Widiastuti, 2021).

The second finding shows that besides being influenced by learning styles, student learning outcomes are also influenced by their learning motivation. The existence of motivation is very vital to improving student

learning outcomes. High and low motivation will greatly affect student learning outcomes (Herawati, 2017; Prabawa & Restami, 2020). Learning motivation is an impulse in students to carry out an activity. This learning drive then affects the development of students in learning, so it can be said that support such as motivation can increase students' intelligence (Dukalang & Lestari, 2018; Yuliastini et al., 2020). External and internal factors can influence the high and low levels of student learning motivation. Internal factors can be in the form of students' health conditions. In contrast, internal factors can be in the form of encouragement from parents, how to teach teachers, and the situation and conditions of the learning environment. Increasing students' learning motivation can be done by encouraging students to be more enthusiastic about learning, using interesting learning models and media, and giving rewards to students when students have achieved good achievements.

The third finding shows a relationship between learning styles and learning motivation on student learning outcomes. An optimistic learning style and motivation are important. Students are more focused on learning and can provide good learning (Lwande et al., 2021; Rasheed & Wahid, 2021). The right and appropriate learning style can lead students to learn the best way (Cahyani, 2018; Ningrat & Sumantri, 2019). Adjustments between learning styles and motivating students will be able to improve student learning outcomes themselves (Cahyani, 2018; Dantas & Cunha, 2020; Ningrat & Sumantri, 2019). Through these adjustments, students will be able to understand the teaching and learning materials as well as possible (Laksana et al., 2019; Priyaadharshini & Sundaram, 2018). It will then be able to encourage students to improve their learning outcomes.

The results obtained in this study are in line with the results of previous studies, which also revealed that motivation significantly influences elementary school students' science learning outcomes (Pratama et al., 2019). Other studies also reveal that in addition to influencing science learning outcomes, learning motivation also affects students' mathematics learning outcomes (Novianti et al., 2020). Other research reveals that learning styles improve student learning outcomes (Irawati et al., 2021). Based on some of the results of these studies, it can be said that motivation and learning styles affect student learning outcomes. This research implies that students' motivation and learning styles when studying influence increasing results. In realizing appropriate results, motivation and learning styles must also be balanced.

4. CONCLUSION

Based on the data analysis and discussion results, it can be concluded that there is a significant relationship between learning styles and learning motivation in students' science learning outcomes. These results can be seen from the increase in learning outcomes after the teacher applies the right learning style and routinely provides learning motivation to students.

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