

THE INFLUENCE OF LEARNING STYLE AND LEARNING MOTIVATION ON STUDENT LEARNING OUTCOMES IN SCIENCE SUBJECTS NATURAL AND SOCIAL

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ABSTRACT: This research aims to describe; a) The influence of learning styles on student learning outcomes in Natural and Social Sciences subjects, b) The influence of learning motivation on student learning outcomes in Natural and Social Sciences subjects, c) The influence of learning styles and learning motivation on student learning outcomes in subjects Social Science and Natural Sciences lessons. This type of research is quantitative research. The population and sample in this study were all 72 students in grades IV, V, VI of the Negri 15 Linge Elementary School, Central Aceh Regency. Data collection techniques use observation, questionnaires and documentation. Data analysis techniques use multiple linear regression test analysis. The research results show that; a) there is a significant influence of learning style on student learning outcomes in Natural and Social Sciences subjects, where the Sig. for the (partial) influence of learning style on learning outcomes is $0.00 < 0.05$ and the calculated t value is $5.210 > 1.994$ so it can be concluded that H1 is accepted which means there is an influence of learning style (X1) on Learning Outcomes (Y). b) There is a significant influence between learning motivation on student learning outcomes in Natural and Social Sciences subjects, where the Sig. for the (partial) influence of learning motivation on learning outcomes is $0.00 < 0.05$ and the calculated t value is $3,199 > 1.99$ so it can be concluded that H2 is accepted, which means there is an influence of learning motivation (X2) on learning outcomes (Y), c) There is a significant influence of learning style and learning motivation on student learning outcomes in Social Sciences and Natural Sciences subjects where, the Sig. for the (simultaneous) influence of learning style and learning motivation on learning outcomes is $0.00 < 0.05$ and the calculated F value is $44.06 > 3.13$ so it can be concluded that H3 is accepted which means there is an influence of Learning Style (X1) and Learning Motivation (X2) simultaneously on Learning Outcomes (Y)

Keywords: Learning Style, Learning Motivation, Learning Results

1. INTRODUCTION

The learning process is a process of interaction between students, educators and learning resources. In the learning process, students are the subject and object of learning activities. The essence of the learning process is achieving learning goals that lead to positive changes. As stated [1], [2], [3] which states that an individual is said to learn if changes occur in the form of new abilities, skills, values and behavior systematically, relatively permanently, and overall as a result or outcome of his experience. themselves in interaction with their environment. The success of the learning process will of course be influenced by various factors, both from the school environment, family, educators or the

students themselves, as stated [4], [5], [6]. Students as individuals who are learning have their own uniqueness and character in the learning process. Their uniqueness causes students to have different responses in understanding a lesson. The uniqueness in question is the student's learning style. According to [7] learning style is a combination of how a person absorbs, organizes and processes information. It is important to realize that each student has a different learning style.

Even though students are at school or even sitting in the same class. Students' abilities to understand and absorb lessons are definitely at different levels. Some are fast, medium and some are very slow. Students need to use the easiest way to absorb information or it could be said that

students need a learning modality (type). Many experts categorize learning style modalities (types) based on cognitive preferences, intelligence profiles, and sensory preferences. However, in the discussion of this article, the modality (type) of learning style is based on sensory preferences or the brain's ability to absorb, manage and convey information which is divided into three learning categories, namely visual, auditory and kinesthetic learning styles [7], [8], [9]. Based on sensory preferences, visual learners learn through what they see, auditory learners learn by hearing, and kinesthetic learners learn by moving, working, and touching.

Students who are often forced to learn in ways that are less suitable and less pleasing to them will hinder their learning process, especially in terms of concentrating when absorbing the information provided. In the end, this will also influence students' learning achievements [10], [11]. Judging from the original word, learning achievement can be interpreted as the results achieved by students after interaction occurs. This understanding is in line with the understanding of learning achievement proposed by [12] that learning achievement is all the behavior that students have as a result of the learning process they undertake, including all the consequences of the learning process which are cognitive, affective and psychomotor, whether intentional or which is unintentional. In the learning process, learning achievement is important because it can be an indication of the extent of students' success in the learning activities that have been carried out.

Apart from learning style, learning achievement is also influenced by motivation. Motivation is a change in energy within a person which is characterized by the emergence of affective and reactions to achieve goals. Motivation has a strategic role in a person's learning activities. Learning motivation is needed to foster interest in lessons, so that students are encouraged to learn. High motivation to learn is reflected in perseverance that is not easily broken to achieve success even though faced with various difficulties. Students' motivation to learn arises from two factors, namely from within themselves which are called intrinsic, or factors from outside themselves which are called extrinsic factors.

Apart from learning motivation, learning style is also a factor that influences student learning outcomes. Learning styles are different ways that each individual has to process, explore and learn information easily. Many students have above average abilities, but they are lazy because the teacher's style or way of delivering subjects is monotonous and boring, making students lazy to learn. An educator cannot but force a child to learn in the desired atmosphere and way because each

child has their own type or learning style. Learning styles are different ways that each individual has to process, explore and learn information easily [13].

Based on the results of the pre-survey, researchers in the field found problems including; a) students' learning styles are monotonous focused on one method, b) the learning resources used in the learning process are still conventional learning resources in the form of textbooks, c) the relationship between teachers and students is less interactive where the communication process only occurs in one direction, namely learning only focus on the explanation given by the teacher without any response from students regarding the learning process, d) lack of recognition of learning styles before the learning process begins. Findings from initial observations indicate that there is boredom and lack of motivation for students to learn in receiving material due to the lack of variety of learning resources that can increase students' understanding of the material presented by the teacher. In the learning process, it was found that students lacked attention and lacked confidence in the learning process, this can be a benchmark that students are less motivated.

Learning styles are different ways that each individual has to process, explore and learn information easily (Sailatul. 2006). The role of learning styles receives less attention from teachers. The introduction of learning styles before the learning process begins is actually forgotten. For the reason that the nature of classical grouping of students treats students identically. The reality shows that the practice of teaching Natural and Social Sciences in schools is treated equally in all respects. Teachers have a tendency to teach monotonously in one way only involving certain modalities. Using only one particular learning style will cause problems in learning from the process to evaluation. If this continues, students with different learning style tendencies will be disadvantaged. Many children's achievement in learning Natural and Social Sciences subjects at school decreases because the circumstances that force students to study do not suit their learning style. On the other hand, children will easily master the subject matter by using their own learning methods [14].

A child's ability to grasp material and lessons depends on their learning style. Learning styles are different ways that each individual has to process, explore and learn information easily [13]. Differences in learning styles allow for differences in the media needed by students, including differences in the approaches used when learning. This is why it is important for teachers to know the learning styles of the students they teach. For effective learning of Natural and Social Sciences, teachers must know students' learning styles so

they can strive for learning that includes all three learning styles. In order to achieve good learning achievement in Natural and Social Sciences, teachers are at least able to instill these three differences in all the lessons taught so that students' needs are met by learning in harmony with their modalities. Teachers' knowledge of their students' learning styles can help teachers take advantage of the diversity of students by presenting interesting and challenging learning material. In principle, students will be quite interested if the lesson material is delivered by teachers with varied learning styles so that it is not boring. The goals of the learning process can be achieved well if they are supported by various factors, including learning style and learning motivation. Style is one of the factors that determines the success of teaching because it can help students and teachers in delivering lesson material to achieve learning goals [15]. Based on

the background above, the researchers studied the influence of learning style and learning motivation on student learning outcomes in Natural and Social Sciences subjects at Linge 15 State Elementary School, Central Aceh Regency.

2. METHODS

This type of research is quantitative research. The population and sample in this study were all 72 students in grades IV, V, VI of the Negri 15 Linge Elementary School, Central Aceh Regency. Data collection techniques use observation, questionnaires and documentation. Data analysis techniques use multiple linear regression test analysis.

3. RESULTS AND DISCUSSION

1. The influence of learning styles on learning outcomes in natural and social science subjects

Tabel 1. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	31.826	5.761		5.524	.000
Learning style	.245	.047	.516	5.210	.000
2 Motivation to learn	.141	.044	.317	3.199	.002

a. Dependent Variable: Motivation to learn

Based on the table above, it can be concluded that the Sig value. for the (partial) influence of learning style on learning outcomes is $0.00 < 0.05$ and the calculated t value is $5.210 > 1.994$ so it can be concluded that H1 is accepted which means there is an influence of learning style (X1) on learning outcomes (Y). This shows that there is an influence of learning style on students' mathematics learning outcomes. These two variables show a unidirectional influence, which means that the higher the level of learning style, the higher the student learning outcomes, and vice versa, the lower the learning style, the lower the student learning outcomes. Theoretically, learning styles have a role in encouraging every human being in general and students in particular to get good learning results. Each student has their own learning style so they can understand the material well, where the learning styles here are visual, audio and kinesthetic. This can be proven by paying attention to the type of learning style. Firstly, visual, this learning

style emphasizes that to know or understand something you have to see the object directly [16]. Second, audio, students who have an audio style, easily learn material presented in the form of audio (lectures), as well as explaining that they quickly grasp the learning material. Lessons are presented in the form of writing, touch, movements that he experiences difficulty [17]. The third kinesthetic is a style of learning by moving. Apart from that, kinesthetic learning style can also be said to be the absorption of information by doing it directly or practicing it. According to Iskandar, kinesthetic learning style is a method used by someone to communicate and solve problems [18].

In order for students to get good learning results, teachers need to pay attention to and know the learning styles of students. Students according to the teacher's teaching method will influence learning outcomes. This can be seen during the learning process, most students are very enthusiastic about participating in learning when the learning

model applied is in accordance with their learning style. For example, the learning model is changed to group form and several students are given the opportunity to actively solve math practice questions on the blackboard. Thus, teachers must play an active and creative role in guiding their students so that they learn according to their learning style. Learning styles will lead students to behave well, with such a model it will make students younger in understanding the lessons being taught, and teachers will also find it easier to teach students and be able to carry out teaching according to the students' learning styles. If there is self-awareness about the importance of learning then this will motivate a student to be diligent in understanding a lesson. So it can be concluded that students who know their learning style will find it easier to capture and understand a lesson and can lead students to get good learning results too, and vice versa if a student does not know their learning style it will be difficult to capture and understand the lesson and will not get learning results. which is satisfying.

2. The influence of learning motivation on learning outcomes

Testing the hypothesis of the influence of learning motivation on students' natural and social science learning outcomes with analysis using SPSS, the (partial) influence of learning motivation on learning outcomes is $0.002 < 0.05$ and the calculated t value is $3,199 > 1.99$ so it can be concluded that H2 is accepted, which means there is an influence of learning motivation (X2) on learning outcomes (Y). This shows that there is a positive influence between learning motivation on student learning outcomes. Motivation to learn is a basic impulse that moves a person to behave. Motivation can also be interpreted as providing a driving force so that something that is motivated can move. According to Atkinson, motivation is explained as a person's tendency to act increasingly in order

to produce one or more results. A.W. Bernard provides an understanding of motivation as a phenomenon involved in stimulating action towards certain goals where previously there was little or no movement at all towards certain goals [19].

Learning motivation on learning outcomes, so that students get good learning results, teachers must motivate students in the following way, teachers create a pleasant learning atmosphere, this has actually been known since ancient times, anything (experience) that is enjoyable will strengthen motivation. On the other hand, unpleasant experiences will hinder you. Teachers give gifts, teachers can give gifts to encourage students' learning activities before taking school exams. Prizes can include items such as learning supports (pencils, pens, school bags, books, etc.). Gifts can also be in the form of praise or flattery. Teachers need to prepare clear goals, if learning goals are clearly prepared, children will have a kind of encouragement or motivation directed only towards goals that have been clearly stated previously [19]. When linked to the theory previously explained, learning outcomes will increase if students have good learning motivation because this has a close relationship. Learning motivation is one of the factors that influences student success. Because students who always receive encouragement from parents, family and people around them will have the opportunity to become good and outstanding students. Students will be enthusiastic about learning if they are always given encouragement and motivation and students who lack attention and motivation will tend to be lazy and indifferent. This can be proven by paying attention to indicators of learning motivation, namely a pleasant learning atmosphere, praising students, competition and cooperation with students, actively involving students, using learning results as feedback.

3. Influence of Learning Style and Learning Motivation on Learning Outcomes

Tabel 2. ANOVA^a

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	304.520	2	152.260	44.056	.000 ^b
	Residual	238.466	69	3.456		
	Total	542.986	71			

a. Dependent Variable: Learning outcomes

b. Predictors: (Constant), Learning Motivation, Learning Style

The third hypothesis was carried out to determine the influence of learning style and learning motivation on learning outcomes in natural and social science subjects using ANOVA. The results of this test show that there is a positive influence between learning style and learning motivation on learning outcomes in natural and social sciences with a significance value for the (simultaneous) influence of learning style and learning motivation on learning outcomes of $0.00 < 0.05$ and the calculated F value $44.06 > 3.13$ so it can be concluded that H3 is accepted, which means there is a simultaneous influence of Learning Style (X1) and Learning Motivation (X2) on Learning Outcomes (Y). This means that H0 is rejected, meaning that there is a very significant influence between learning style and learning motivation on learning outcomes. This shows that learning style and learning motivation are part of the factors that influence student learning outcomes. These two factors are factors that exist within the students themselves so that they provide encouragement from within or as strength so that students can develop themselves to have good learning outcomes.

Learning Style is an approach that explains how individuals learn or the way each person uses to concentrate on the process, and master difficult and new information through different perceptions. Learning style is how information can be well received by students [20]. Motivation can be said to be the difference between being able to carry out and being willing to carry out. Motivation is closer to wanting to carry out tasks to achieve goals. Motivation is a force, both external and internal, that encourages a person to achieve certain predetermined goals [19]. In other words, motivation can be interpreted as a mental encouragement towards individuals or people as members of society. Learning styles and learning motivation really help students in carrying out the teaching and learning process and understanding the material when studying. Basically, learning style is an attitude towards gaining social sensitivity and how to socialize and respond to every incident. On the other hand, learning motivation also plays a big role in getting good learning results, because learning motivation will lead students to be more serious and focused in carrying out the teaching and learning process. Commitment is basically not only in thoughts but through actions and real practices.

A person's tendency to learn is very diverse and is influenced by several things. Learning style plays an important role in learning

activities. Using an appropriate learning style will help students in the learning process so that students can easily absorb and understand the information they receive. The learning process is an activity carried out by students, but in obtaining learning outcomes each student is different, this occurs due to several factors, both internal factors or factors from within the student, as well as external factors or factors originating from outside the student. In the learning process, the factors that influence more are the factors that exist within the student because they are closely related to the student, one of which is learning style. Students who can maximize their learning style in the process of absorbing information while studying will influence the learning outcomes obtained. Learning style is a special way that students apply to learning activities in order to achieve learning goals. If students are familiar with their own learning styles, then students can take important steps to help themselves learn more quickly and easily. There are three types of learning styles, namely visual, auditory and kinesthetic [21]. Visual learning style is a style of learning by seeing so that for students who have a visual learning style, they will rely on their sense of sight (eyes). The visual learning style is learning by seeing something, whether through pictures, diagrams, demonstrations, or videos. Providing information through pictures or diagrams is a stimulus in the visual learning style. The response to this visual learning style is the learning outcomes obtained by students who have this visual learning style. The visual learning style helps students to remember the material.

Learning is something that is highly recommended, seeking knowledge is something that is mandatory. In the teaching and learning process there is something to be achieved, namely good learning outcomes. To get good learning results, you need self-awareness to study hard and always try to socialize so that with this capital, when in the teaching and learning process students encounter difficulties, it will be easy to find concrete solutions and far from giving up. On this basis, good learning styles and learning motivation must be ingrained in every student without ignoring other factors which also contribute to improving student learning outcomes. The combination of learning style and good learning motivation will produce its own positive energy for each student in carrying out the teaching and learning process as well as carrying out duties and responsibilities as someone who is studying and continuing to

develop the potential that exists in oneself so as to obtain satisfactory results as stated. It is hoped that their loyalty will be forged in the world of education.

Students' activeness in learning is greatly influenced by their learning style. This means that each student has a learning style that he considers appropriate or appropriate for the process of learning something [22]. Students cannot be forced to use a uniform learning style. Suitability of your learning style will be able to help and facilitate the learning process and will even greatly influence students' learning achievements. This is also in accordance with research [23], [24], [25], [26], [27], [28],[29],[30], [31],[32] which states that learning styles has a positive effect on students' learning achievement. Several studies have even identified which learning style dominates most in relation to academic achievement. As research [33] states that visual and auditory learning styles are more dominant than kinesthetic learning styles. Meanwhile, research [34], [35], [36] states that the more dominant learning style is the visual learning style compared to the auditory learning style. Then [37] suggested that the more dominant learning style is the auditory learning style. Based on the research stated above, it is clear that learning style greatly influences students' academic achievement, therefore there are several strategies that are carried out to optimize learning styles so that students get maximum benefit from the learning process and have an influence on their academic achievement. These strategies include

educators having to better recognize and understand the characteristics of their students' learning styles so that they can be adapted to the educators' own learning styles, providing a learning environment that suits students' learning styles, and using balanced learning styles or flexibility in the learning process. This is also in accordance with research conducted [38], [37] which stated the importance of strategies in optimizing students' learning styles.

As is known, achieving academic achievement also requires motivation which is used as a support for learning styles. This motivation has a big influence in improving the learning process so that it is more effective and efficient which will also influence students' academic achievement. This is in accordance with research [39], [41], [42], [43] which suggests that motivation influences the achievement and improvement of students' academic achievement. Based on these studies, educators need to increase students' learning motivation so as to provide optimal results in the learning process. Several studies have also identified the influence of learning style and motivation on student learning achievement, including research [44], [45], [46], [47] [48]. This research shows the results that learning style and motivation have a significant influence on student achievement. So it is clear that both learning styles and motivation have a relationship and are related to the achievement and improvement of students' learning achievements.

4. CONCLUSION

1. There is a significant influence of learning style on student learning outcomes in Natural and Social Sciences subjects, where the Sig. for the (partial) influence of learning style on learning outcomes is $0.00 < 0.05$ and the calculated t value is $5.210 > 1.994$ so it can be concluded that H1 is accepted which means there is an influence of learning style (X1) on Learning Outcomes (Y).
2. There is a significant influence between learning motivation on student learning outcomes in Natural and Social Sciences subjects, where the Sig. for the (partial) influence of learning motivation on learning outcomes is $0.00 < 0.05$ and the calculated t value is $3,199 > 1.99$ so it can be concluded that H2 is accepted, which means there is an influence of learning motivation (X2) on learning outcomes (Y).

3. There is a significant influence of learning style and learning motivation on student learning outcomes in Social Sciences and Natural Sciences subjects where, the Sig. for the (simultaneous) influence of learning style and learning motivation on learning outcomes is $0.00 < 0.05$ and the calculated F value is $44.06 > 3.13$ so it can be concluded that H3 is accepted which means there is an influence of Learning Style (X1) and Learning Motivation (X2) simultaneously on Learning Outcomes (Y)

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