



## THE INFLUENCE OF EXPERIMENTAL METHODS ON SCIENCE LEARNING OUTCOMES OF CLASS IV STUDENTS ON MAGNETIC STYLE MATERIAL AT STATE PRIMARY SCHOOL 064968 MEDAN

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<p><b>Article History</b>                      Accept : 25 Januari 2024                      Revision : 05 Februari 2024                      Accept : 27 Februari 2024</p>	<p>Science learning is expected to be a vehicle for students to learn about themselves and the natural surroundings, as well as prospects for further development. It is hoped that the learning process will emphasize providing direct experience to develop competencies to explore and understand the natural surroundings scientifically. Then learning outcomes are the abilities students gain after carrying out these learning activities. This is where the presence of methods occupies an important position in conveying learning material. The experimental method is a teaching method in which the application of the material uses an experimental process related to something by observing the process. Based on the results of the research and discussion, it can be concluded that the use of experimental methods in science learning has an influence on the learning outcomes of class IV students at SDN 064968 Medan because learning uses the experimental method, the material is delivered more interestingly for students, namely inviting students to carry out experiments directly on the material being discussed. has been conveyed, namely the Magnetic Force.</p>
<p><b>Keyword</b></p>	<p>learning outcomes, magnetic force, science, influence, elementary school</p>

### 1. INTRODUCTION

Education is a conscious effort made by humans in order to develop their potential through the learning process (Munib, 2013: 139). Through education a country can create an intelligent and advanced generation. This requires educators to provide learning that is interesting, fun and more challenging so that it will increase learning motivation and ultimately student learning outcomes will also increase. The world of education is now experiencing rapid changes with the development of science and technology. Technological developments cannot be separated from

developments in the science field. The development of the science field would not be possible if it were not accompanied by an increase in the quality of science education, whereas up to now science lessons have been considered a difficult subject. Science is a science that deals with natural phenomena and material things in a systematic, structured manner regularly, generally applicable, in the form of a collection of observation and experimental results. Thus, science is not only a collection of objects or living things, but also about how to work, how to think, and how to solve problems (Kurniawan et al., 2022).

Student learning outcomes are the abilities that children gain after going through learning activities. Because learning itself is a process of someone trying to obtain a relatively permanent form of behavior change. In learning activities or instructional activities, teachers usually set learning objectives. Children who are successful in learning are those who succeed in achieving learning goals or instructional objectives. Based on the National Education System Law no. 20 of 2003 Chapter II Article 3 that national education aims to develop abilities and shape the character and civilization of a dignified nation in order to educate the nation's life, aims to develop the potential of students to become human beings who believe in and are devoted to God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent and a democratic and responsible citizen (Hasanah, 2018).

Science learning is expected to be a vehicle for students to study themselves and the natural surroundings, as well as prospects for further development. emphasizes providing direct experience to develop competencies to explore and understand the natural environment scientifically. To provide learning experiences to elementary school students, new strategies and the use of innovative and fun learning media are needed. One of the learning materials that still has low achievement results is magnetic force material. As an educator, teachers obtain information about students' success in achieving learning success from the results of evaluations or tests given to determine their students' development. There are several factors that cause failure in the learning process, including student factors,

## 2. RESEARCH METHOD

This research is quantitative research, so all observed symptoms are measured and converted into numbers. This research uses experimental research because this research aims to reveal the effect of using experimental methods on the science learning outcomes of class IV

including students being less interested in learning, students being less interested in the material presented, students playing more, students finding it difficult to accept the lesson material (Nur Hayati, 2021).

Teaching and learning activities are interactions that have educational value. In it, there is an educational interaction between the teacher and students, when the teacher delivers lesson material to students in class. The lesson material that the teacher conveys will provide less encouragement (motivation) to students if they convey it using inappropriate strategies. This is where the presence of methods occupies an important position in delivering learning material (Wulandari, 2023).

According to the author, learning is an activity or process of changing behavior which includes knowledge, attitudes and skills. Then learning outcomes are the abilities students gain after carrying out these learning activities. This teaching and learning activity is an activity carried out to achieve learning objectives regarding the three aspects of behavior change (Rizkiah, 2018).

The experimental method is a learning method where the teacher and students work together on something as a practical exercise of what they have learned. The experimental method is a way of delivering lessons, where students carry out experiments by experiencing and proving for themselves something they are learning. In teaching and learning activities using this experimental method, students are given the opportunity to do it themselves, follow the process, observe objects, analyze, prove and draw their own conclusions regarding an object, situation or process of something (Sari, 2019). students at SDN 064968 Medan. This type of research uses a pre-experimental design research with a one group pre test-post test design which is carried out on only one group which is randomly selected before being given treatment. It can be seen that the results of the treatment are more accurate compared to the situation before the treatment was given.

The data collection techniques used in this research are: Test questions. These test questions come from science material, namely material on the life cycle of living things. The test questions are in the form of multiple choice questions, totaling 12 questions, each question worth 8.3 points to see initial abilities. and students' final abilities after being given treatment.

The independent variable (X) is a variable that influences or causes changes in the dependent variable. In this research, the independent variable is the experimental learning model. The experimental method is a way of teaching, in which students carry out an experiment on something, observe the process and write down the results of the experiment, then the results of these observations are presented in class and evaluated by the teacher. The dependent variable (Y) is a variable that is influenced or is a result of the existence of an independent variable. In this research, the dependent variable is science learning outcomes. Science learning outcomes in this research are student learning outcomes in the form of scores or grades after taking multiple choice questions done by students.

### 3. RESULT AND DISCUSSION

Experimental methods are an inseparable part of Natural Science. Therefore, in Natural Science Education of course the position of experimentation is very important. Experiments range from simple activities to very complex activities. Simple experiments have important meaning, because ways of solving problems are more easily adapted to everyday situations.

Based on the results of initial observations carried out by researchers at SDN 064968 Medan, in the teaching and learning process in general for each subject teachers have not used methods because there are many things that become obstacles. For example, school conditions in terms of facilities and infrastructure do not support the use of methods effectively and efficiently, and teachers do not fully understand how to use the methods

themselves. Especially in Natural Sciences subjects, it was found that class IV teachers only used books to explain and did not use tools for experimental materials.

In accordance with current conditions, researchers have noticed that teachers only use the lecture method in natural science learning. In learning using the lecture method, the teacher plays a more important role than the students. Students only listen to the material presented by the teacher and usually continue by working on questions. Natural Sciences (Science) learning does not escape teacher-centered learning practices, which means making the material only mastered by the teacher without being able to involve students and provide meaningful learning experiences to students. This results in students tending to be passive in participating in learning activities. During the learning process, students seemed less enthusiastic when the teacher delivered the learning material because there were still many students chatting with their classmates, silent when the teacher asked questions, and busy playing alone. Apart from this, it makes student learning outcomes low as evidenced in the results of semester tests. Of the 18 students, only 5 were declared to have passed with a KKM of 70. For this reason, it is necessary to improve effective learning methods to increase students' knowledge and learning outcomes.

Ismail (2016:38) Learning activities are influenced by two factors, namely; a) Internal factors which include intellectual aspects such as intelligence, talent, interests, motivation, physical condition and condition. b) External factors, namely students' social conditions such as environmental factors, family economics, and school. In the science learning process, learning materials need to pay attention to the learning method, which must be appropriate and able to attract children's attention. In order for science learning objectives to be successful, teachers must create a learning atmosphere that is able to foster students' self-confidence, able to foster creative and innovative attitudes and

behavior in students. This learning atmosphere can be obtained through learning about the discovery of science concepts with learning resources, such as science equipment in carrying out the process of experimental activities or observations (Sari, 2019). The method used in science learning in this research is the experimental method.

So the appropriate method for learning science in elementary school is the "experimental method" which functions in the educational environment to help students learn through experiments with available tools or media, in order to achieve optimal educational goals. There is interaction or reciprocity between teachers and students. The experimental method is a teaching method in which the application of the material uses an experimental process related to something by observing the process. Learning through an experimental process that is experienced directly can be easy to remember. By involving students' physical, mental and emotional involvement in this method, it is hoped that students will be creative and innovative and develop self-confidence. According to Iru and Arihi (2012:32) "the experimental method is a teaching method that applies the material by experimenting and observing something in process. The experimental method will give students the opportunity to carry out the experimental process. Learning activities using the experimental method will give students the opportunity to be able to discover their own concepts through observation with reasoning power, thinking power and creativity. According to Suyanto and Djihad (2012:32) the experimental method is a method commonly used in science/science lessons and in Experimental method is an experiment carried out directly by students to investigate or discover specific science concepts and concepts for hypothesis testing. The benefits of applying the experimental method are that it can create active students and provide opportunities to practice aspects of the skills possessed by students. By applying this experimental method to science learning, it is hoped that

students will feel happy and comfortable during the learning process so that it can be conducive and able to improve learning outcomes.

Based on the results of research and discussion, it can be concluded that the use of experimental methods in science learning has an influence on the learning outcomes of class IV students at SDN 064968 Medan because learning uses the experimental method, the material is delivered more interestingly for students, namely inviting students to carry out experiments directly on the material that has been taught. delivered and working in groups, so that students become happier in receiving the material. This can stimulate students' thinking to enjoy learning science so that students' motivation to learn about science lessons will increase.

#### 4. CONCLUSION

After going through the data analysis process and based on the results of research in class 4 of SDN 064968 Medan regarding the Influence of Experimental Methods on Science Learning Outcomes on Magnetic Force Material, it can be concluded that there is an influence of the use of experimental methods on student learning motivation in the science subject on magnetic force. So the appropriate method for learning science in elementary school is the "experimental method" which functions in the educational environment to help students learn through experiments with available tools or media, in order to achieve optimal educational goals. There is interaction or reciprocity between teachers and students. The experimental method is a teaching method in which the application of the material uses an experimental process related to something by observing the process..

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