



Attitudes of Students: Adoption of Scientific Attitudes and Interest in Increasing Study

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Article Info

Article history:

Received Jan 11, 2023

Revised Feb 14, 2023

Accepted Mar 21, 2023

Keywords:

Attitude

Science Attitude

Science

ABSTRACT

Purpose of the study: The purpose of this research is to see an overview of the scientific attitude possessed by students at SMPN 17 Ksota Jambi based on indicators of adoption of scientific attitudes and indicators of interest in increasing science study time.

Methodology: This research is a quantitative study, namely researchers using survey methods with data collection techniques using questionnaires.

Main Findings: The results of the 2 attitude indicators discussed in this study are indicators of the adoption of a scientific attitude by 62.5% of students in the good category. While the interest in increasing the time to study science by 66.4% of students is in the sufficient category.

Novelty/Originality of this study: The novelty of this research is an indicator used to describe the attitudes of students at SMPN 17 Kota Jambi, namely indicators of the adoption of a scientific attitude and an interest in increasing the time to study science.

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1. INTRODUCTION

The quality of human resources is largely determined by the quality of education [1]. Education is also a very important factor in the development of the nation and state [2]. Education is a learning process for students to have an understanding of something [3]. Education is the spearhead in the development of human resources so that education must play an active role in improving the quality and quantity of students' mindsets [4]. Education is defined as a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by themselves, the nation community and the State [5].

Education in Indonesia has been well integrated and requires further development [6]. Education is an effort to provide certain knowledge, insight, skills and expertise to humans to develop their talents and personality [7]. Education is an activity to achieve a predetermined goal [8]. In education, there is a process of learning and learning. Teaching and learning activities between teachers and students are carried out in schools. As agents of change, educators are expected to be able to instill the characteristics, traits and character as well as an independent spirit, responsibility and competence in life to students [9]. The level of education needs to be taken because with the level, the learning process can run according to ability and is able to add experience, insight and others [10]. Each student has different abilities [11]. The success of the learning process is a goal to be achieved in implementing education in schools [12].

Schools were found to have a middle school level, one high school. At this level there are a number of subjects, such as science subjects [13]. Science is one of the subjects that must be studied in junior high school [14]. Science is part of the basis for the development of information technology, transportation and energy production [15]. Natural Sciences (IPA) have been introduced to students from an early age [16]. In essence, science is built on the basis of scientific products, scientific processes and student attitudes [17]. Science is a science that is born and develops through the steps of observation, formulation of problems, preparation of hypotheses, testing of hypotheses through experimentation, drawing conclusions and formulating theories from concepts [18].

Natural Science is knowledge gained through observation, data collection during experiments and deduction in order to produce explanations about phenomena that can be trusted [19]. Natural Science Physics is the study of natural phenomena and their interactions through observation, measurement, and analysis [20]. Natural science of physics which is a branch of science has its own uniqueness because it contains abstract concepts and requires idealization through mathematical modeling [21]. As a process, Natural Science is a process that is used to study objects of study, find and develop scientific products and as applications, theories [22]. At SMP (junior high school) generally students consider science as a subject that is quite boring and scary. Especially if it is added to the teacher's habit of feeding students with various formulas that are difficult to understand [23]. In essence, mastery of science must be instilled from elementary school (elementary school) so that students are able to apply science at the next level.

This fear will affect learning outcomes and the achievements and achievements of students in learning science. Not only does it affect learning outcomes, but this fear also makes it difficult for students to learn in the future. Fear and boredom also make students pessimistic, apathetic and even lazy to learn science. The attitude of students when learning is very important to know [24]. The attitude that exists in students is the attitude of students towards subjects [25]. To see students' attitudes towards science subjects, we can use several aspects of attitude indicators such as the adoption of a scientific attitude and an interest in increasing the time to study science. According to the adoption of scientific attitudes are attitudes that must be possessed by scientists such as curiosity, fear, honesty and accepting the truth through proving facts [26]. The adoption of a scientific attitude aims to measure the willingness and readiness of students for new information. Developing a scientific attitude can help students obtain better learning outcomes.

The interest in increasing the time to study science shows how interested and serious the students are in understanding and learning science [26]. If students increase their time in studying science, it will help these students understand science subjects. As for one of the efforts so that students want to increase their time to learn science is the existence of encouragement such as interest and pleasure in learning science. We can say that students who like science will have a great interest in learning science. And conversely, students who do not like science will not be interested in increasing their time in learning science so that this will have an impact on poor learning outcomes in science subjects. These poor learning outcomes will also affect students' interests and desires in learning science.

2. RESEARCH METHOD

This research was conducted at state junior high school 17 Jambi city. The time for conducting this research was August 2019. This study aims to obtain an overview of the adoption of a scientific attitude and an overview of interest in increasing the time to study science. This research is a quantitative research, namely researchers using survey methods with data collection techniques using questionnaires.

The subjects in this study were students at SMP Negeri 17 Jambi City class of 2019/2020, which totaled 128 respondents. Samples were taken based on the total sampling technique. This study uses a questionnaire instrument adopted from Astalini & Kurniawan (2019). a questionnaire is a list of questions used by researchers to obtain data directly from sources using a communication process by asking questions [27].

In this study, researchers used a closed questionnaire that was direct. The point is that the respondent answers about himself and is not given the opportunity to answer based on his own language. The attitude questionnaire adopted by researchers from Astalini & Kurniawan (2019) has 56 statements that describe students' positive and negative attitudes towards learning science. The 56 statements are divided into several indicators. The indicators studied by researchers are the adoption of a scientific attitude totaling 7 statements, namely statements numbered 3,10,16,23,28,35 and 48. As well as an interest in increasing the time to study science, there are 8 statements, there are numbers 5,12,18,25, 30,37,43 and 50. The scale used is the Likert scale. The Likert scale is a scale with various levels of agreement with statements [28]. In the attitude questionnaire adopted by the researcher, there are five scale options, namely STS (Strongly Disagree), TS (Disagree), N (Neutral), S (Agree) and SS (Strongly Agree).

To conduct this research, the first thing the researcher did was distribute questionnaires in the form of a questionnaire. So after distributing the questionnaires, we will get the data. Then we analyze the data using descriptive statistics. In general, descriptive statistics are used to describe the characteristics of the data in the

form of averages and data variances [29]. To describe these characteristics, the data was analyzed using SPSS 25. And what will be obtained later is the percentage and the maximum and minimum values.

3. RESULTS AND DISCUSSION

We can see the success of education from the development of achievements or changes in attitudes of students [29]. When the attitude of students is positive, then the concept of learning science will be easily accepted by students. To see the attitudes and achievements of students, the researchers reviewed through two indicators, namely the adoption of a scientific attitude and an interest in increasing the time to study science. Each individual or learner will definitely show a variety of responses to stimuli [30].

This study reviewed two indicators to describe students' attitudes in science lessons. To find out the description of the attitude of SMP 17 students in Jambi city based on indicators of adoption of a scientific attitude and based on an interest in increasing the time to study science, we can see in the table below:

Table 1. An overview based on indicators of the adoption of a scientific attitude

Interval	Frequency	(%)
7.0 - 12.6	0	0
12.7 - 18.2	0	0
18.3 - 23.8	21	16.4
23.9 - 29.4	80	62.5
29.5 - 35.0	27	21.1
Total	18	100

Table 1 show the results of the description based on indicators of the adoption of a scientific attitude. For the range 7.0 – 12.6 it is called a very bad category. In the results of the study, we see that 0% of students do not adopt a scientific attitude. For the range 12.7 – 18.2 it is called a bad category. In this category 0% of students have a bad attitude regarding the adoption of a scientific attitude. For the range 18.3 – 23.8 is a fairly good category, namely there are 16.4% of students. Furthermore, in the good category, that is, with a range of 23.9-29.4, there are 62.5% of students. And the range 29.5-35.0 is a very good category, namely there are 21.1% of students who already have an attitude of adopting a good scientific attitude. We can say that the majority of students are in the good and very good category on the adoption indicator of a scientific attitude, namely as much as 83.6%. while the remaining 16.4% is in the sufficient category. We can also say that students already have a scientific mindset in their lives.

Based on the research that has been done, students have instilled a scientific mindset in their lives. Most students like to read about things they don't know about science. It can also be seen that students are diligent and enthusiastic when learning science begins, such as during experiments. That most of the students want to do experiments until the results are as they expect. It is clear that the manifestation of the adoption of a scientific attitude possessed by students at SMPN 17 Jambi city. It is this attitude dimension that students at SMPN 17 Jambi city should have in science subjects. Because the adoption of a scientific attitude will have an impact on other attitudes.

Table 2. Description based on interest in increasing science study time

Interval	Frequency	(%)
8.0 – 14.4	0	0
14.5 – 20.8	4	3.1
20.9 – 27.2	85	66.4
27.3 – 33.6	36	28.1
33.7 – 40.0	3	2.3
Total	128	100

Table 2 show the results of an attitude of interest in increasing science learning time. The range 8.0-14.4 is the range for the bad category with a percentage of 0%. The range 14.5-20.8 is the range for the unfavorable category with a percentage of 3.1%. Furthermore, the range 20.9-27.2 is a fairly good category with a percentage of 66.4. The range 27.3-33.6 is the range for the good category with a percentage of 28.1%. and the range 33.7-40.0 is the range for the very good category with a percentage of 2.3%. We can say that students tend to be more neutral or sufficient when they increase their time studying science, namely 66.4%. This shows that students are still less interested in spending more time exploring the science field.

Increasing the time to study science can improve student learning outcomes in science subjects. Because students who are trained to work on science questions will be faster and proficient in deciding the concepts or

formulas to be used. It is clear from the research results that most students are neutral and kind. However, there are 3.1% of students who do not like learning science.

4. CONCLUSION

Based on the results of research that has been carried out regarding attitudes using indicators of adopting scientific attitudes and an interest in increasing science learning time at SMPN 17 Jambi City, it can be said that students already have an attitude of adopting a good scientific attitude, namely as much as 62.5%. Students already have a scientific mindset. Not only do they have an attitude of adopting a good scientific attitude, students also have a sufficient sense of interest to increase their time to study science, namely as much as 66.4%. But there are also 3.1% of students who don't really like science lessons.

ACKNOWLEDGEMENTS

I would like to thank God Almighty, SMPN 17 Jambi City School, SMPN 17 Jambi City students, and all parties who helped in the preparation of this article.

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