IDENTIFICATION OF THE STUDENTS' ATTITUDE TO PHYSICAL LESSON IN SMAN 8 JAMBI CITY

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Abstract:

The students' attitude that occurs during the learning process is essential in directing human behavior. It shows the individual likes or dislikes a particular item. Students' attitudes in science subjects can be seen from how students respond to science subjects. This study aimed to determine how the students' attitude of SMAN 8 Jambi City towards Physics subjects. This research used quantitative research with a survey research design. The data collection technique used was a questionnaire with 5 points on the Likert scale. This research involved 174 students of SMAN 8 Kota Jambi. Data analysis in this study used descriptive statistics. The indicator used in this study was the attitude towards investigations in Physics. The analysis results obtained on indicator towards physics investigation was good with 64.4%.

Abstrak:

Sikap siswa yang terjadi selama proses pembelajaran sangat penting dalam mengarahkan perilaku manusia. Ini menunjukkan individu suka atau tidak suka item tertentu. Sikap siswa pada mata pelajaran IPA dapat dilihat dari bagaimana siswa merespon mata pelajaran IPA. Penelitian ini bertujuan untuk mengetahui bagaimana sikap siswa SMAN 8 Kota Jambi terhadap mata pelajaran Fisika. Penelitian ini menggunakan penelitian kuantitatif dengan desain penelitian survei. Teknik pengumpulan data yang digunakan adalah angket dengan 5 butir skala likert. Penelitian ini melibatkan 174 siswa SMAN 8 Kota Jambi. Analisis data dalam penelitian ini menggunakan statistik deskriptif. Indikator yang digunakan dalam penelitian ini adalah sikap terhadap investigasi Fisika. Hasil analisis yang diperoleh indikator terhadap investigasi fisika adalah baik dengan 64,4%.

Keywords:
Attitude, Social Implications of Physics, Physics Investigation.

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INTRODUCTION

Education has a vital role in the intellectual life of the nation. Education is a process of improving the quality of life and acquiring skills, and instilling students' skills (Kurniawan, Astalini, & Anggraini, 2018). Education is an activity to civilize people/make people cultured. To improve human life requires a result of thought, will, and feeling, which is the work of humans individually or in groups (Neoloka, 2017). Education is a human need, while humans are still alive and essential for every human being. It can improve each individual's quality (Triyanto, Anitah, & Suryani, 2013). Without an education, it can cause retardation in human beings. Therefore, education is an essential

thing that must be possessed by every human being, which is useful for improving their quality. Law Number 30 of the Year 2003 concerning the national education system, Article 1 of Paragraph 1, states that education is a conscious and planned effort to create an atmosphere of the learning process so that students actively develop their potential to have spiritual strength, self-control, personality, intelligence, noble character, as well as the skills needed by him/herself, society, nation, and state. Based on this law, it is clear that education is the primary weapon in achieving our country's goal of educating the nation's life. Education functions to form knowledgeable and noble character and skills in the world of work. Besides producing someone who is an expert in a particular field, education also teaches how a person can bring oneself into a social, national, and state environment following the norms and rules that apply in everyday life (Suralman & Mukminan, 2017). However, education has not provided space for students to behave honestly. The learning process teaches good character and moral education to the extent of knowledge written in the text and is less prepared for students to respond and face conflicting lives (Setiawati, 2017).

Physics is considered a problematic field of science and attracts fewer students compared to other areas. Most students assume that physics is a difficult subject during high school and becomes more challenging when in college (Guido, 2013). That is all because, in mastering physics, students must also master mathematics well at logic. Physics is one of the subjects related to scientific concepts whose applications are mostly found in everyday life (Maison, Astalini, Kurniawan, & Yuniyarsih, 2018). The concepts of physics have been studied by students in science subjects in junior high schools and continued at the senior high school level. Physics has an essential role as science in explaining various phenomena in the universe (Kaya & Boyuk, 2011). Physics as a school subject is one branch of Natural Sciences (IPA) that can explain various natural phenomena in daily life. These natural phenomena can be explained through a concept, theory, and physical laws so that they can be accepted by the human mind (Kaniawati, 2017). In this case, physics is a lesson that emphasizes natural phenomena or events that are the forerunner of the entire contents of the material presented in all physics subjects. Studying physics is mastering physics products in the form of a collection of laws, theories, principles, rules, and formulas built by concepts according to the assessment process. In the learning process, especially in physics, the attitude of a student is very important. One of the internal factors influencing this is students' attitude towards objects related to science lessons (Osman, Iksan, & Halim, 2007). The attitude that occurs during the learning process is very important in directing human behavior (Kaya & Boyuk, 2011).

Attitude is a feeling and thoughts that encourage someone to behave when he likes or does not like something (Hardiyanti, Astalini, & Kurniawan, 2018). Attitude is a condition of mental and emotional readiness in taking a particular action when facing a specific condition (Riwahyudin, 2015). It refers to the situation to be ready to do something and is not a real condition. Each individual or someone has different attitudes toward one another. This condition is influenced by several factors that exist in each

individual, such as the differences in interests, talents, knowledge, experience, feelings, and also the surrounding environment. In science education, attitudes towards science are essential factors that influence student achievement and students' alternative conceptions or misconceptions (Kamal & Muideen, 2014). Attitude is a construct of hypotheses that shows the individual likes or dislikes a particular item. Students' attitudes in science subjects can be seen from how students respond to science subjects. Students' attitudes towards science subjects can generally be divided into positive and negative attitudes (Kurniawan, Astalini, & Anggraini, 2018). Intuitively, one can assume that positive attitudes and achievements must be interrelated. For example, a good achievement will lead to a good attitude, and vice versa, someone who has a bad achievement will lead to a bad attitude (Papanastasiou & Zambylas, 2012). It is important to develop students' positive attitudes toward science lessons (Cheeung, 2009). If students have a negative attitude towards science or physics, they will not like physics or their physics teacher (Guido, 2013). Students' positive or negative attitudes can influence learning in physics and science (Erdemir, 2009). Students' negative attitudes towards certain subjects and physics and science can cause them to experience learning difficulties. Therefore, students must develop a positive attitude towards physics and be considered an essential step in science education. To assess changes in students' attitudes toward science and physics and issues related to science and physics, can be measured using Fraser (1981) dimension of TOSRA, including attitudes towards inquiry in physics. According to Junaedi, Sunarno, & Cari (2014), inquiry can be said as a method that refers to a way to question, seek knowledge or information, or study a symptom because science is a way of thinking or working which is equivalent to the ability of knowledge. Inquiry learning is one of the constructivist learning models that involve students' activities maximally throughout their ability to search and investigate. It is a model that can be applied to form students to have skills (Suyono, Suparmi, & Sarwanto, 2015).

This research aimed to determine how students' attitudes towards physics, especially the attitude towards physics inquiry. In this study, the question arose: what was students' attitude towards inquiry in physics?

RESEARCH METHOD

This research is survey research with a quantitative design. The researchers chose several respondents as a sample in the survey research and gave them a standardized questionnaire. In survey research, the researchers explained or recorded the conditions or attitudes to explain current (Morissan, 2017). At the same time, Muijs (2004) stated that quantitative research explains phenomena by collecting data in the form of numbers processed mathematically (statistically).

This research was conducted at the 8th High School (SMA) Negeri Jambi City. Population in a study means a generalization area consisting of objects/subjects with certain quantities and characteristics determined by researchers to study and draw conclusions (Siyoto & Sodik, M, 2015). This study's population was all the students of

class X, XI, XII IPA SMAN 8 Jambi City. The sample is a small part taken to represent a population. There were 174 students of this study taken as a sample.

Data collection techniques in this study used a questionnaire. The instrument used to collect data in this study was a questionnaire. The researchers used a questionnaire instrument adopted from Rio Darmawangsa, which had Cronbach Alpha 0.9 with a valid number of 54 statements (Darmawangsa, 2018). In this study, researchers used two indicators: Social implications of physics and attitudes towards investigations in physics that use a Likert scale of 5 (five) for positive statements. Very Disagree has a score of 1, Disagree has a score of 2, Neutral has a score of 3, Agree has a score of 4, and Strongly Agree has a score of 5. Conversely, for negative statements, Strongly Agree has a score of 5, Disagree has a score of 4, Neutral has a score of 3, Agree has a score of 2, and Strongly Agrees has a score of 1.

The procedure of this study began by following the procedure in stages. In the preparation stage, a proposal is made, formulating the problem and its variables. A literature review is then conducted, looking for supporting theories and deepening the discussion of the problem under study to obtain an overview of the research to be carried out and the instruments needed. The questionnaire was given to 174 students in SMAN 8 Kota Jambi as the questionnaire data collection stage. Data analysis was then carried out from the data, namely coding data, filtering out the appropriate data, and analyzing it.

Data analysis in this study uses quantitative research using the SPSS program to look for descriptive statistics. Descriptive statistics are used to analyze data by describing data collected without generally accepted conclusions or generalizations (Sholikhah, 2016). Data were obtained from the research questionnaires, which were distributed to students of SMAN 8 Kota Jambi. It was then analyzed to find the total number of students who chose each attitude scale and produced mean, mode, median, standard deviation, minimum (min), and maximum (max).

RESULTS AND DISCUSSION

Attitude is essential during the learning process. Because if a student has a negative attitude towards physics, that student will also have a negative attitude towards the physics subject teacher. Therefore, a teacher must know how the students' attitudes during the learning process. With the teacher knowing the students' attitudes, the teacher can improve the class's learning design adjusted to students' abilities. Scientific attitude has a high influence on the learning process which involves the attitude of the learners. Students who have a high scientific attitude can help the process of learning physics and science become better. It is because scientific attitudes shape students to be able to think creatively and critically.

The attitude towards inquiry in physics includes how students' attitudes towards experimentation and scientific inquiry solve physical problems. The form of physics investigation carried out by students is by practicing a theory previously known to students, making it easier to understand things more thoroughly and pleasantly. It can also be seen from how students' steps solve a problem, namely by observing a picture of

an event, classifying and collecting data, interpreting and analyzing the correct formula to solve a problem.

Research relevant to this research is a study of attitudes conducted by Astalini, Kurniawan, Perdana, & Pathoni (2019) entitled Identification of Student Attitudes Towards Physics Subjects at State High School 5, Jambi City. The formulation of the problem in this study was how students' attitudes toward the social implications of physics, scientific normality, physics investigations, and the obstacles faced improving students' attitudes in learning physics and the solutions to improve students' attitudes in learning physics. The research subject was the students of SMAN 5 Jambi City, while the object of the research was the students' attitude towards Physics. This research involved 126 students of SMAN 5 Kota Jambi. Data collection techniques used in this study were questionnaires and interviews. Analysis of the data used is descriptive statistics presented with a percentage. This research concluded the attitude of students at SMAN 5 Kota Jambi on the indicator of scientific normality, and the attitude towards physics research is quite good.

The difference in this study was the indicator used to describe attitudes in SMAN 8 Jambi City. There were three indicators used to describe students' attitudes in previous studies, namely the Social Implications of Physics, Scientific Normality, and Attitudes in Investigating Physics. Whereas in the research conducted this time to describe students' attitudes at SMAN 8 Kota Jambi, the author only used an indicator, namely attitude in Investigation toward Physics adopted from Darmawangsa's research (2018).

The following are the results of descriptive data analysis using SPSS from attitude questionnaire data for Attitude indicators in physics investigation, with the results as in table 1.

Table 1. Attitudes in Investigation towards Physics

Klasifikasi				Std.					
Range	Attitude	Freq	%	deviation	Mean	Modus	Median	Min	Max
5,00 – 13,00	Very not good	0	0						
13,10 – 21,00	Not good	1	6						
21,10 – 29,00	Enough	52	29,9	3,783	31,442	31,00	31,00	21,0	43,0
29,10 – 37,00	Good	112	64,4						
37,10 – 45,00	Very good	9	5,2						
TOTAL		174							

Based on table 2, students at SMAN 8 Kota Jambi predominantly answered good. They agreed to the questionnaire data acquisition of 64.4% (112 of 174) students, with a maximum score of 43 and a minimum score of 21. Students categorized overall good data analysis based on the acquisition of 69.6% (121 of 174) students. It showed that, in general, students had behaved well towards investigations in physics that were

commonly done. Students preferred to conduct experiments compared to asking the teacher when they wanted to know a physics material, because physics would be much easier to understand when practiced directly. This finding related to Istiqamah, Doyan, & Taufik (2016) that in inquiry learning, the problem and the solution to the problem are not yet known by the teacher, so students are required to exert their minds to determine problems and find solutions to the problems they have determined through experiments. The study results also found that 6% (1 of 174) students at SMAN 8 Kota Jambi had not good attitude towards scientific inquiry. It could occur because students did not like experimental activities because they were lazy and considered troublesome. This is one of the weaknesses of the experimental method.

According to Oviana & Maulidar (2013), namely the lack of teaching aids, which results in students not having the opportunity to conduct experiments, students must have accuracy, patience, and tenacity or never give up in conducting experiments. The results of data analysis showed that students have a good attitude towards investigations in physics. This attitude towards investigation in physics (scientific attitude) is an important attitude that students must possess when studying physics because physics is a closely related science and cannot be separated from experimental activities. In carrying out scientific activities, always use scientific principles, where scientific principles are the hallmark of science that contains scientific attitude elements. Suppose a student has a good attitude towards scientific inquiry, and likes scientific inquiry activities while studying. In that case, the student will directly apply the scientific process and the scientific attitudes students should have. Also, Suyono, Sunarno, & Aminah (2016) stated that students who have critical thinking ability have good self-concept so that they can analyze problems and draw conclusion well. Experimentation in its implementation requires thinking critically to develop the results of practicum and assignments into new information that can be linked to everyday life for conclusions.

CONCLUSION

Based on the research discussion, it can be concluded that students' attitudes at SMAN 8 Kota Jambi, especially for class X, XI, and XII Science, can be seen from the attitude towards investigation in Physics. The analysis result found that students' attitude in SMAN 8 Kota Jambi toward Investigations in Physics was good (64.4%).

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