**IDENTIFICATION OF STUDENT ATTITUDES TO PHYSICAL LESSONS**

**IN STATE 8 SMA JAMBI CITY**

Tari Okta Puspitasari1, Nur Ika Sandi Pratiwi2

1,2 Program Studi Pendidikan Fisika, Universitas Jambi

1,2 Jalan Raya Jambi-Ma. Bulian, KM 15, Mendalo Indah, Jambi

Email: tarioktapuspitasari@gmail.com1,  nurikapratiwi026@gmail.com 2

**Abstract**:

The purpose of this study was to find out how the attitude of students of SMAN 8 Jambi City towards Physics subjects. This type of research is a quantitative study with a survey research design. Data collection techniques used a questionnaire or questionnaire and used a 5-point Likert scale. This research involved 174 students of SMAN 8 Kota Jambi. Data analysis in this study used descriptive statistics. Indicators used in this study are the Social Implications of Physics, and Attitudes Towards Investigations in Physics. The analysis results obtained on indicators of the social implications of physics are good with 54.6% presentation. The attitude indicator towards physics investigation is good with 64.4% presentation.

**Key Words:**

Attitude, Social implications of Physics, Physics Investigation.

**INTRODUCTION**

Education has a very important role in the intellectual life of the nation. Education is a process of improving the quality of life, as well as the process of acquiring skills and instilling the skills performed by students (Kurniawan, et al, 2018). Education is an activity to civilize people / make people cultured. Where to improve human life requires a result of thought, will and feeling which is the work of humans individually or in groups (A. Neolaka & G. A. A. Neoloka, 2017). Education is a human need while humans are still alive and is also the most important thing for every human being. With education can improve the quality of self from each individual (Triyanto, Anitah & Suryani, 2013). Without an education can cause humans to develop less, resulting in human retardation. Therefore, education is a very important thing that must be possessed by every human being, which is useful for improving the quality of self. In Law No. 30 of 2003 concerning the national education system article 1 paragraph 1 states that Education is a conscious and planned effort to create an atmosphere of learning and learning process so that students actively develop their potential to have spiritual spiritual strength, self-control, personality, intelligence, noble character, as well as the skills needed by himself, society, nation and state. Based on this law, it is clear that education is the main weapon in achieving our country's goal of educating the nation's life. The function of education itself is to form individuals who are not only knowledgeable but also have good character or noble character and have skills in the world of work, in accordance with Law No. 30 of 2003 concerning national education system article 3 namely national education functions to develop capabilities and shape the character and civilization of a dignified nation in order to educate the life of the nation, aiming at developing the potential of learners to become human beings who believe in and fear God Almighty, noble , healthy, knowledgeable, capable, creative, independent, and be a democratic and responsible citizen. Besides being able to give birth to someone who is an expert in a particular field, education can also teach how a person is able to bring oneself in a social, national and state environment in accordance with the norms and rules that apply in everyday life (Surahman and Mikminan, 2017). However, education has not provided space for students to behave honestly because the learning process tends to teach moral 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 as a problematic field in the field of science, and attracts fewer students compared to other fields. Most students assume that physics is a difficult subject during high school and becomes more problematic when in college (Guido, 2013). That's all because in physics in addition to mastering physics students must also master mathematics must also be good at logic. Physics is one of the subjects related to scientific concepts whose applications are mostly found in everyday life (Maison, et al, 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 important role as science in explaining various phenomena that occur in the universe (Rich & Boyuk, 2011). Physics as a subject in school 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 the subject of physics as a lesson that emphasizes natural phenomena or events which are the forerunner of the entire contents of the material presented in all physics subjects. Studying physics is basically mastering physics products in the form of a collection of laws, theories, principles, rules, and formulas that are built by concepts according to the assessment process. In the learning process, especially in the subject of physics, the attitude of a student is very important. The success of students' scientific learning achievement is influenced by many factors. One of the internal factors that influence this is the attitude of students towards objects related to science lessons (Iksan, Halim & Osman, 2006). The attitude that occurs during the learning process is very important in directing human behavior (Rich & Boyuk, 2011).

 Attitude (attitude) is a feeling and thoughts that encourage someone to behave when he likes or does not like Sesutu (Hardiyanti, Astalini & Kurniawan, 2018). Attitude is a condition of mental and emotional readiness in taking a particular action when facing a certain condition (Riwahyudin, 2015). Attitude refers to the condition so that someone is ready to do something and is not a real condition. Each individual or someone has different attitudes between one another, this 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 important factors that influence student achievement as well as students' alternative conceptions or misconceptions (Kamal & Muideen, 2014). Attitude is a construct of hypotheses that shows the individual likes or dislikes a certain item. The attitudes that students have in science subjects can be seen from how students respond to science subjects, students' attitudes towards science subjects can generally be divided into positive attitudes 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 as well, and vice versa someone who has a bad achievement will lead to a bad attitude too (Papanastasiou & Zembylas, 2012). It is important to develop students' positive attitudes towards science lessons (Cheeung, 2009). If students have a negative attitude towards science or physics, they also will not like physics or their physics teacher (Guido, 2013). Positive or negative attitudes possessed by students can influence learning in physics and science (Erdemir, 2009). Negative attitudes that students have towards certain subjects as well as towards physics and science can cause students to experience difficulties in learning. Therefore, students must be assisted in developing a positive attitude towards physics as well as being considered an important step in science education. To assess changes in student attitudes towards science and physics as well as issues related to science and physics can be measured using Fraser's (1981) dimension of TOSRA including: Social Science Implications and attitudes towards inquiry in physics. The social implications of physics or the scale of science shows the social benefits and how the impact or influence of physics is related to scientific progress and research (Welch, 2010). The social implications of physics are useful for every student, because it will lead to collaboration and independence in the learning process. During the learning process in school we can meet the social implications of physics both in the classroom and when in the laboratory, namely the cooperation and independence of students in their study groups (Astalini, et al, 2019). Group work is able to give students a picture of how other people value themselves and gain a better understanding of themselves so that they are able to evaluate students' behavior interpersonal. For example in doing group work or when doing certain material practicum, students are required to cooperate, and must know each other and arrange how the tasks and responsibilities of the division of work of each individual according to the expertise and abilities of each individual. The form of independence of students can also be seen from how the task or homework done by each student and how the steps taken by students in adding insight through enrichment and other sources that support. Thus the social implications of physics can provide benefits or positive impacts for students, because students are able to be independent and have high scientific thinking.

 The purpose of this research is to find out how students' attitudes towards physics, especially in high schools in the city of Jambi. Attitude indicators include: the social implications of physics and also the attitude towards inquiry in physics. In this study the questions that arise are as follows:

1. What is the attitude of students towards the social implications of physics?

2. What is the attitude of students towards inquiry in physics?

**RESEARCH METHODS**

*Types of research*

This research is a survey research, with quantitative design. In the survey research the researchers chose a number of respondents as a sample and gave them a standardized questionnaire. In survey research attempts to explain or record the conditions or attitudes to explain what is currently (Morissan, 2017). While quantitative research is research that explains phenomena by collecting data in the form of numbers which are then processed mathematically (statistically) (Muijs, 2004).

*Research Samples*

This research was conducted at the 8th High School (SMA) Negeri Jambi City. Population in a study means a generalization area that consists of objects / subjects that have certain quantities and characteristics determined by researchers to study and draw conclusions (Siyoto & Sidik, 2015). The population in this study were all students of class X, XI, XII IPA SMAN 8 Jambi City. While the sample is a small part taken to represent the population of 174 people.

*Data Collection Technique*

Data collection techniques in this study used a questionnaire or questionnaire. The instrument used to collect data in this study was a questionnaire or questionnaire, here the researchers used a questionnaire instrument that was adopted from Rio Darmawangsa which had Cronbach Alpha 0.9 with a valid number of 54 statements, Darmawangsa (2018). In this study, researchers used 2 indicators, namely: 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.

*Research Procedure*

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. Then a literature review is conducted, looking for supporting theories and deepening the discussion of the problem under study in order to obtain an overview of the research to be carried out as well as the instruments needed. At the stage of questionnaire data collection or questionnaire given to 54 students in SMAN 8 Kota Jambi. From the data, data analysis is then carried out, namely coding data, filtering out the appropriate data and analyzing the data.

*Research Procedure*

The procedure of this research was carried out starting from distributing questionnaires or questionnaires, then analyzing attitude questionnaire data and then proceeding to transcribe all the results data that had been obtained during the study.

*Data Analysis*

Data analysis in this study uses quantitative research using the SPSS program to look for descriptive statistics. Descriptive statistics are statistics that are used to analyze data by describing or describing data that has been collected without intending to make generally accepted conclusions or generalizations (Sholikah, 2016). The results of this data were obtained from the distribution of research questionnaires Student attitudes distributed to students of SMAN 8 Kota Jambi based on 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 very important 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 because with the teacher knowing the attitudes of the students, the teacher can improve the design of learning in class adjusted to the abilities possessed by students. 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, this is because scientific attitudes shape students to be able to think creatively and critically. The social implications of physics show how students 'attitudes towards social benefits as well as how students' attitudes in dealing with problems accompanying discoveries and discoveries in physics. The social implications of physics are beneficial for every student, because they give rise to collaboration and independence in the learning process. We can find the social implications of physics during the learning process at school both when in the classroom and when in the laboratory, namely cooperation and independence of students in the study group. Group work is able to give students a picture of how other people value themselves and gain a better understanding of themselves so that they are able to evaluate students' behavior interpersonal.

The attitude towards inquiry in physics includes how students' attitudes towards experimentation and scientific inquiry as a method of solving 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 also can be seen from how the steps taken by students in solving a problem, namely by observing a picture of an event, classifying and collecting data, interpreting and analyzing the use of the correct formula to solve a problem in the problem.

Research that is relevant to this research is a study of attitudes conducted by Astalini, Kurniawan, Perdana, and 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 are how students 'attitudes toward the social implications of physics, how students' attitudes toward scientific normality, how students 'attitudes toward investigations in physics, what are the obstacles faced to improve students' attitudes in learning physics, and how solutions to improve students' attitudes in learning physics. The subject of the research 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. The conclusion of this study is 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 renewal in this study is an indicator used to describe attitudes in SMAN 8 Jambi City. In previous studies there were 3 indicators used to describe students' attitudes, namely indicators of the Social Implications of Physics, Scientific Normality, and Attitudes in Investigating Physics. Whereas in the research conducted this time to describe the attitudes of students at SMAN 8 Kota Jambi, the author only used 2 indicators namely the Social Implications of Physics and Attitudes in Investigation against Physics adopted from the Darmawan research (2018). Here there are similarity indicators used, namely the social implications of physics and attitudes in the investigation of physics.

Social Implications of Physics

Following are the results of descriptive data analysis using SPSS from attitude questionnaire data for indicators of the social implications of physics, with the results as in table 1.

Table 1. Social Implications of Physics

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Klasifikasi** | **%** | **standar****deviasi** | **Mean** | **Modus** | **Median** | **Min** | **Max** |
| **Rentang** | **Sikap** | **Frek** |
| 5,00 - 9,00 | Very not good | 1 | 0,6 | 2,73883 | 17,8851  | 17,00 | 18,00 | 9,00 | 25 |
| 9,01 - 13,00 | Not good | 7 | 4,0 |
| 13,10 - 17,00 | Enough | 71 | 40,8 |
| 17,10 - 21,00 | Good | 76 | 43,7 |
| 21,00 - 25, 00 | Very good | 19 | 10,9 |  |  |  |  |  |  |
| **TOTAL** | 174 |  |  |  |  |  |  |  |

Based on table 1, it was noted that as many as 54.6% (95 out of 174) students were categorized as good with a maximum score of all statements in indicator 1 being 25. This shows that students most recognized about the implications of physics for their social life, and students realize that learning physics at school is very important even though sometimes students find it very difficult to understand the formulas in physics. Because physics is a science that is directly related to human life and studying physics can have a good impact on the continuity of human life. Then there are as many as 40.8% s (71 out of 174) students are categorized enough which means students are still confused about the role of physics in technological progress, and still do not really understand how the role of physics in human social life. Whereas 4.6% (8 out of 174) students are categorized as not good, this shows students consider learning physics is not too important, and students do not know what benefits will be gained when students learn physics, other than just getting good grades. Students do not know how the role of physics can solve existing problems in everyday life, and students do not know how the role of physics in making life better. So based on the results of data analysis, the results show that students of SMAN 8 Kota Jambi have a good attitude towards physics. This is because students also have a good understanding of the use of physics in social life. If students have an awareness of the benefits of physics, students will feel that physics is an important science to learn. Physics will turn into fun subjects for students, and students will associate events around them with physics, so that students can then solve problems in their lives or around them by using physics.

Attitudes in Investigation Against Physics

Following are the results of descriptive data analysis using SPSS from attitude questionnaire data for Attitude indicators in the investigation of physics, with the results as in table 2.

Table 2. Attitudes in Investigation Against Physics

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Klasifikasi** | **%** | **standar****deviasi** | **Mean** | **Modus** | **Median** | **Min** | **Max** |
| **Rentang** | **Sikap** | **Frek** |
| 5,00 – 13,00 | Very not good  | 0 | 0 | 3,78385 | 31,4425 | 31,00 | 31,00 | 21,00 | 43,00 |
| 13,10 – 21,00 | Not good | 1 | 6 |
| 21,10 – 29,00 | Enough | 52 | 29,9 |
| 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 well and agreed to the questionnaire with data acquisition of 64.4% (112 of 174) students, with a maximum score of 43 and a minimum score of 21. And for students categorized overall good data analysis based on the acquisition of 69.6% (121 of 174) students. This shows that in general students have behaved well towards investigations in physics that are commonly done. Basically students prefer to conduct experiments or experiments compared to asking the teacher when they want to know a physics material, because physics will be much easier to understand when practiced directly. The results of the study also found that 6% (1 of 174) students at SMAN 8 Kota Jambi had a bad attitude towards scientific inquiry. This can occur because students do not like to do experimental activities because they are 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 or experiments, in addition to conducting experiments students are also required to have accuracy, patience and also tenacity or never give up in conducting experiments. So based on the results of data analysis the results show that students have a good attitude towards investigations in physics. This attitude towards investigation in physics (scientific attitude) is an important attitude that must be possessed by students when studying physics, because physics is a science that is closely related 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 elements of scientific attitude. If a student has a good attitude towards scientific inquiry, and likes scientific inquiry activities while studying, then the student will directly apply the scientific process and also the scientific attitudes that students should have.

**CONCLUSION**

Based on the results of research and discussion, it can be concluded that the attitude of students at SMAN 8 Kota Jambi especially for class X, XI, and XII Science can be seen from several attitude indicators such as: Social Implications of Physics, and Attitudes Towards Investigation in Physics. From the results of the analysis that has been done, it is found that the attitude of students in SMAN 8 Kota Jambi on Social Implications Indicators of categorized physics is good with presentations (54.6%), and Attitudes Toward Investigations in Physics are also good with presentations (64.4%).

**REFERENCES**

Neoloka & G. A. A. Neoloka. (2017*). Landasan Pendidikan Dasar Pengenalan Diri Sendiri Menuju Perubahan Hidup.* Jakarta: Kencana.

Astalini, dkk. (2019). Identifikasi Sikap Peserta Didik terhadap Mata Pelajaran Fisika di Sekolah Menengah Atas Negeri 5 Kota Jambi. *Unnes Physics Education Journal,* 8 (1), 34-43.

Cheeung, D. (2009). Students’ Attitudes Toward Chemistry Lessons: The Interaction Effect between Grade Level and Gender. *Res Sci Educ*, 39:75–91

Darmawangsa, R. (2018). Pengembnagan Instrument Sikap Siswa Sekolah Menengah Atas Terhadap Mata Pelajaran Fisika. *JPF: Jurnal Pendidikan Fisika,* 6 (1), 107-114.

Erdemir, N. (2009). Determining students’ attitude towards physics through problem-solving strategy. *Asia-Pacific Forum on Science Learning and Teaching,* 10(2). 1-9.

Fraser, B. J. (1981). *TOSRA: Test of science-related attitudes handbook*. Hawthorn, Victoria: Australian Council for Educational Research.

Guido, R. M., (2013). Attitude and Motivation towards Learning Physics. *International Journal of Engineering Research & Technology (IJERT).* 2(11), ISSN: 2278-0181

Hardiyanti, K., Astalini., & Kurniawan, A. D. (2018). Sikap Siswa Terhadap Mata Pelajaran Fisika di SMA Negeri 5 Muaro Jambi. *Jurnal Pendidikan Fisikia,* 3(2), 1-12.

Iksan, Z. H., Halim, L., & Osman, K. (2006). Sikap Terhadap Sains dalam Kalangan Pelajar Sains di Peringkat Menengah dan Matrikulasi. *Pertanika J. Soc. Sci. & Hum,* 14(2), 133-147.

Kamal, A & Muideen, G. (2014). Relationship Between Teacher’s Attitude And Student’s Academic Achievemnt In Senior Secondary School Chemistry. A Case Study Of Ijebu-Ode And Odogbolu Local Government Area Of Ogun State. *Wudpecker Journal of Educational Researc,* 3(3), 35-43.

Kaniawati, Ida. (2017). Pengaruh Simulasi Komputer Terhadap Peningkatan Penguasaan Konsep Impuls-Momentum Siswa SMA. *Jurnal Pembelajaran Sains*, 1(1), 24-26.

Kaya & Boyuk. (2011). Attitude Towards Physics Lessons And Physical Experiments Of The High School Students. *European J of Physics Educatio,* 2(1), 38-49.

Kurniawan, D.A., Astalini & Anggraini, L. (2018). Evaluasi Sikap Siswa SMP terhadap IPA di Kabupaten Muaro Jambi. *Jurnal Ilmiah Didaktika*, 19 (1), 124-139.

Maison, dkk. (2018). Deskripsi sikap siswa sma negeri pada mata pelajaran fisika. *Edusains*, 10 (1), 161-167.

Morissan. (2017). *Metode Penelitian Survei*. Jakarta: Kencana.

Muijs, D. (2004). *Doing Quantitative Research in Education With SPSS.* London, Thousand Oaks, New Delhi: Sage Publications.

Oktaviana, W, & Maulidar. (2013). Penggunaan Metode Eksperimen Pada Pembelajaran Materi Sifat Bahan Dan Kegunaannya Terhadap Hasil Dan Respon Belajar Siswa Kelas IV Mintungkob Aceh Besar. *Jurnal Ilmiah Didaktika*, 13 (2), 336-350.

Papanastasiou, E. C & Zambylas, M. (2012). Differential effects of science attitudes and science achievement in Australia, Cyprus, and the USA. *International Journal of Science Education,* 26(3), 259–280.

Riwahyudin, A. (2015). Sikap Siswa dan Minat Belajar Siswa Terhadap Hasil Belajar IPA Siswa Kelas V Sekolah Dasar di Kabupaten Lamandau. Jurnal Pendidikan Dasar, 6 (1), 11-23.

Setiawati, N, A, (2017). Pendidikan Karakter Sebagai Pilar Pembentukan Karakter Bangsa. *Prosiding Seminar Nasional Tahunan Fakultas Ilmu Sosial Universitas Negeri Medan,* 1(1), 348-352.

Sholikhah, A. (2016). Statistik Deskriptif Dalam Penelitian Kualitatif. *Jurnal Komunika,* 10(2), 342-362.

Siyoto, S & Sodik, M, A. (2015). *Dasar Metodologi Penelitian*. Yogyakarta: Literasi Media Publishing.

Surahman, E., Mukminan. (2017). Peran Guru Ips Sebagai Pendidik Dan Pengajar Dalam Meningkatkan Sikap Sosial Dan Tanggung Jawab Sosial Siswa SMP. *Harmoni Sosial: Jurnal Pendidikan IPS*, 4(1), 1-13.

Triyanto, E. Anitah, S & Surayni, N. (2013). Peran Kepemimpinan Kepala Sekolah Dalam Pemanfaatan Media Pembelajaran Sebagai Upaya Peningkatan Kualitas Proses Pembelajaran. *Jurnal Teknologi Pendidikan*, 1(2), 226-238.

Welch, A. G. (2010). Using the TOSRA to Assess High School Students’ Attitudes Toward Science After Competing In The FIRST Robotics Competition: An Exploratory Study. *Eurasia Journal of Mathematics, Science & Technology Education*, 6 (3), 187-197.