Vol. 11, No. 2, pp. 290-309, 2021 DOI: 10.23960/jpp.v11.i2.202112

Jurnal Pendidikan Progresif

e-ISSN: 2550-1313 | p-ISSN: 2087-9849

http://jurnal.fkip.unila.ac.id/index.php/jpp/

A Comparative Analysis of Students' Attitudes and Interests in Science Subjects

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Received: 28 July 2021 *Accepted: 27 August 2021* *Published: 27 August 2021*

Abstract: A Comparative Analysis of Students' Attitudes and Interests in Science Subjects. **Objective:** This research was conducted with the aim of knowing the comparison of attitudes and interests and the relationship between students' attitudes and interests towards science subjects with fermented material. **Methods:** This research uses quantitative methods with associative and comparative research types. **Findings:** the results of the T test with a value of sig. (2-tailed) < 0.05 and the results of the correlation test between attitudes and students' interests in science subjects with fermented material obtained the results of the correlation test with the value of sig. (2-tailed) < 0.05. **Conclusion:** Based on the t-test there are differences in students' attitudes and interests towards science subjects with fermentation material at SMPN 8 Batanghari and MTsN Batanghari 6. and MTsN 6 Batanghari

Keywords: attitude, interest, fermentation, Biology, Science.

Abstrak: Analisis Perbandingan Sikap dan Minat Siswa pada Mata Pelajaran IPA. ***Tujuan:*** *Penelitian ini dilakukan dengan tujuan untuk mengetahui perbandingan sikap dan minat serta hubungan antara sikap dan minat siswa terhadap mata pelajaran IPA dengan materi fermentasi.* ***Metode:*** *Penelitian ini menggunakan metode kuantitatif dengan jenis penelitian asosiatif dan komparatif.* ***Temuan****: didapatkan hasil uji T dengan nilai sig. (2-tailed) < 0,05 dan didapatkan hasil uji korelasi antara sikap dan minat siswa pada mata pelajaran IPA dengan materi fermentasi diperoleh hasil uji korelasi dengan nilai sig.(2-tailed) < 0,05.* ***Kesimpulan****: Berdasarkan uji-t terdapat perbedaan sikap dan minat siswa terhadap mata pelajaran IPA dengan materi fermentasi di SMPN 8 Batanghari dan MTsN Batanghari 6. Berdasarkan hasil uji korelasi terdapat hubungan antara sikap dan minat siswa pada mata pelajaran IPA dengan materi fermentasi di SMPN 8 Batangha ri dan MTsN 6 Batanghari.*

Kata kunci: *sikap, minat, fermentasi, Biologi, IPA.*

To cite this article:

Zurweni, Kurniawan, D. A., & Azzahra, M. Z. (2021). A Comparative Analysis of Students' Attitudes and Interests in Science Subjects. *Jurnal Pendidikan Progresif*, *11*(2), 290-308. doi: 10.23960/ jpp.v11.i2.202112.

INTRODUCTION

Education is a process of changing one's attitudes and behavior through teaching and training. Education is a matter of human life that is useful for improving the nation's standard of living and growing in students good morals to invest in human character (Alan & Afriansyah, 2017; Rahmawati, 2018; Syukri et al., 2019). Education is an important thing and cannot be separated from human life (Duygu et al., 2018; Parker, 2019; Prajapati et al., 2017). The implementation of the 2013 curriculum is the government's effort to produce a superior generation (Susilowati, 2017; Nenotaek et al., 2019; Novalinda et al., 2020). The 2013 curriculum is the next step in developing a competency-based curriculum in the form of integrated attitudes, knowledge and skills.

The 2013 curriculum is a curriculum that prioritizes understanding, skills and character education. The 2013 curriculum is a curriculum that requires students to play an active role in the learning process (Richardo & Richardo, 2016; Hidayati et al., 2020; Kurniawan, 2021). The 2013 curriculum is important to be implemented in Indonesia because the younger generation of Indonesia needs to be prepared in the competence of attitudes, skills, and knowledge (Reswari, 2018; Kustijono & Wiwin HM, 2014; Wulandari, 2020). The 2013 curriculum is a learning system that can provide meaningful and broad experiences to students (Fellner, 2018; Loudon, 2019; Sofyan, 2019). The existence of educational standards aims to advance education in various fields, such as in the field of natural sciences.

Natural science is a term used to refer to a family of sciences where the objects are natural objects with definite and general laws. Natural Science is a basic science that plays an important role in the development of science and technology (Giorgi, 2019; Kelleher & Tierney, 2018; Yuliati & Lestari, 2019). What is studied in science is cause and effect, the causal relationship of events that occur in nature (Maison et al., 2020; Tri Pudji Astuti, 2019; Utaminingsih et al., 2018). Science subjects at the SMP/MTs level in the national curriculum include: Physics, biology, chemistry, and earth and space sciences (Cooper & Berry, 2020; Imaduddin & Khafidin, 2018; Wulandari, 2020). Biology is a part of natural science.

Biology is the study of living things, namely humans, animals and plants. Biology is one of the sciences that plays an important role regarding life with the environment regarding the scope of biology and the branches of biological sciences in it which are arranged methodically and systematically related to each other. (Imaduddin & Khafidin, 2018). Biology is the science that studies the diversity of living things (Da Silva et al., 2015; Furqaani et al., 2017; Ilmu, 2019). Biology, part of Natural Sciences (IPA) puts forward the aspects of minds on, hands on, and hearts on (Maknun et al., 2020; Susanti & Djukri, 2018). One of the materials that will be studied in biology subjects is fermentation. Fermentation is an important innovation by mankind and this process is used to convert organic substrates into useful products (Kumar et al., 2019).

Student attitudes are one of the factors that influence the learning process that comes from within students (Dewi et al., 2017; Maison et al., 2018; Rahayu & Romadona, 2020). Indicators of student attitudes towards science include indicators of social implications for science, adoption of scientific attitudes, enjoyment of learning science and interest in increasing time to learn science (Astalini et al., 2018; Putra et al., 2019; Tanti et al., 2020). The pleasure in learning science is the students' love for learning science which is upheld by high curiosity. Basically, there

are still uncertainties about attitudes and teaching approaches, taken from the many scientific attitudes that must be applied in studying science (Sabrina, 2017; Astalini et al., 2018; Tamjid, 2018). The first thing that can be seen from students liking or disliking physics is how students behave during the lesson. Student attitudes in learning in the form of positive attitudes and negative attitudes.

Interest is a feeling that can give enthusiasm in doing something. Interest is as attention or inclination and desire or liking to be interested in something without being asked (Astuti, 2017; Kawet, 2017; Meganingtyas et al., 2019). Learning is related to interest that interest is one aspect of psychology that can encourage someone to achieve certain goals such as encouraging students to easily obtain material presented by the teacher so that they can increase knowledge and experience.(Fauziyah & Triyono, 2020; R. H. Nasution et al., 2020; Wibowo, 2017). To improve conceptual understanding, interest in learning is needed and the right way of learning, low interest in learning is the cause of the non-optimal learning achievement achieved by students where interest in learning is the tendency of individuals to get pleasure without pressure (Nur Laila & Eriyanto, 2020; Permatasari et al., 2019). Having an interest in a particular subject makes students have a positive attitude towards that lesson.

This research is in line with research (Riwahyudin, 2015; Nursa'adah, 2014), in this study the results obtained that attitudes and interests affect student learning outcomes. Due to the lack of students' understanding of science subjects with fermented material, this research needs to be carried out to find out how students' attitudes and interests are towards science subjects with fermented material. Based on the explanation above, this research aims to solve threefold:

1. How is the comparison between the attitudes of students in grades VII A and VII B at SMPN 8 Muaro Jambi and MTsN 6 Batanghari towards science subjects with fermentation material?
2. How is the comparison between the interests of students in grades VII A and VII B at SMPN 8 Muaro Jambi and MTsN 6 Batanghari towards science subjects with fermentation material?
3. How is the relationship between students' attitudes and interest in science subjects with fermentation material?

METHODS

Research design and procedures

This research uses quantitative methods with associative and comparative research types. by filling out a questionnaire. Quantitative research is one type of research whose specifications are systematic, well-planned, and clearly structured from the beginning to the making of the research design. (Nugroho, 2018). This type of associative research is research that is asking for the relationship between two or more variables (Sulfemi & Luthfianti, 2019).

In data collection, the first activity that must be done is to select students based on the categories given by the researcher, then provide a questionnaire on student attitudes in science subjects, and interest questionnaires in science subjects. Then the questionnaire data was processed using the SPSS application. The use of the SPSS application functions to view descriptive statistics, in the form of mean, min, max, percentage, and category of students ((Pramesti, 2018; Santoso, 2019; Wahyuni, 2020)) . The data needed in research can be collected or obtained from various data sources. The procedures for collecting data in this study are in accordance with the following diagram:

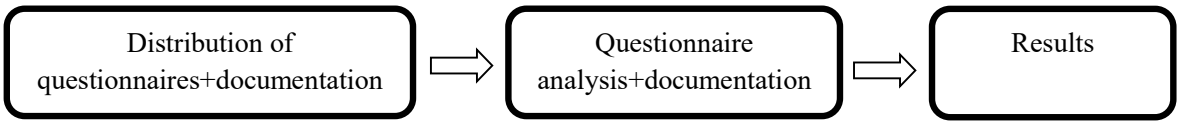

Figure 1. Research procedure

Population and sample

The sample in this study was 148 students from SMPN 8 Batanghari and MTsN 6 Batanghari in Batanghari district. The sampling technique is purposive sampling. Purposive sampling is a sampling technique with certain considerations or special selection (Jannah et al., 2021). The subjects taken were class VII A and VII B consisting of 80 women and 68 men.

The description of the sample in this study, namely students of class VII A and VII B at SMPN 8 Batanghari and MTsN 6 Batanghari are as follows:

Research Instruments

The instrument in this study used an attitude questionnaire and an interest questionnaire, for the attitude questionnaire there were 18 statement items, which were divided into positive statements totaling 9 items and negative statements totaling 9 items while for the interest questionnaire there were 6 statement items, divided into positive statements totaling 3 items and negative statements totaling 3 items. The focus of this research is on 2 dimensions of attitude and 2 dimensions of interest with attitude indicators, the social implications of science there are nine statements and there are nine statements of interest in a career in science. Then the indicators used to measure student interest are attention in learning there are theree statements and the feeling of happiness there are theree statements on this instrument using a Likert scale. The scale consists of 5 points with a value of strongly agree is 5, agree is 4, neutral is 3, disagree is 2, and strongly disagree is 1 which was adapted from research (Kurniawan et al., 2018). The questionnaire grid can be seen in table 2 and table 4.

Table 1. Research sample

No	School name	Total students	Attitude				Interest			
			VIII A		VIII B		VIII A		VIII B	
			L	P	L	P	L	P	L	P
1.	SMP Negeri 8 Batanghari	74	17	20	17	20	17	20	17	20
2.	MTsN 6 Batanghari	74	17	20	17	20	17	20	17	20

Table 2. Grid of students' attitude questionnaires in science subjects with fermentation material

NO.	Statements	Indicator
1.	Using money for science lessons is a good thing	
2.	Public money spent on science in recent years has been used wisely	
3.	The government should facilitate more for science research	

4.	Science makes life better	social implications of science
5.	Science is man's worst enemy.	
6.	The discovery of science does more harm than good	
7.	Too many laboratories have been built at the expense of education	
8.	This country spends too much money on science	
9.	Money spent on science research is wasted	
10.	When I graduate from school, I want to work with people who are making discoveries in science	interest in a career in science
11.	I don't like working in a science lab after I graduate school	
12.	Working in a science lab is an interesting way to make a living	
13.	I want to teach science when I graduate from school	
14.	Work as a scientist will be interesting	
15.	I don't want to be a scientist after I finish school	
16.	Working in the science field will be boring and always boring	
17.	Work as a scientist will be boring	
18.	I don't like being a scientist because it requires too much education.	

Due to the student attitude questionnaire on science subjects with fermentation material using a Likert scale consisting of 5 categories, there are intervals in each category, and the intervals in each category can be seen in table 3. The description of the category of student attitudes in science subjects with fermentation material is as follows:

Table 3. Categories of student attitudes in science subjects with fermentation material

Category	**Indicator Interval**	
	Social implications of science	***Interested in a career in science***
Very Not Good	7 – 12.6	7 – 12.6
Not good	12.7- 18.2	12.7- 18.2
Enough	18.3 – 23.8	18.3 – 23.8
Good	23.9 – 29.4	23.9 – 29.4
Very good	29.5 - 35	29.5 - 35

The description of the student interest instrument grid for science subjects with fermentation material is shown in Table 4. Due to the attitude questionnaire of students in science subjects with fermentation material using a Likert scale consisting of 5 categories, there are intervals in each category, and the intervals in each category can be seen in table 5.

Table 4. Student interest questionnaire instruments in science subjects with fermentation material

NO.	Statements	Indikator
1.	I listen well when the teacher is explaining the physics subject	attention in learning
2.	I understand all of the teacher's explanations from start to finish in the ongoing physics learning process	
3.	I don't pay attention when physics class is in progress	
4.	I feel interested in the physics subject matter being taught	feeling of happiness
5.	I like the physics subject that is taught	
6.	I am not enthusiastic in following the physics lessons taught	

The description of the category of student interest in science subjects with fermentation material is shown in Table 5.

Data Analysis Technique

In this study using quantitative data analysis with SPSS 25, to look for descriptive statistics and inferential statistics. According to (Muchson, 2017; Rasyad, 2003) Descriptive statistics is a science which is a collection of rules regarding the collection, estimation, and drawing conclusions from statistical data to describe a problem, the information that can be obtained by descriptive statistics includes

Table 5. Categories of student attitudes in science subjects with fermentation material

Category	Indicator Interval	
	Attention in learning	***Feeling happy***
Very Not Good	4 – 7.2	5 – 9
Not good	7.3 – 10.4	10 – 13
Enough	10.5 – 13.6	14 – 17
Good	13.7 – 16.8	18 – 21
Very good	16.9 - 20	22 - 25

data concentration (mean, median, mode), data distribution (range, mean deviation, variance and standard deviation), the tendency of a data set, the size of the location (quartiles, deciles and percentiles). In this study, the researcher used the mean, median, and mode to find out information based on descriptive statistics. Inferential statistics are statistics relating to how to draw conclusions based on data obtained from samples to describe the characteristics or characteristics of a population (Astri et al., 2013). In this study, before testing the hypothesis, a prerequisite test is first carried out. The prerequisite test is a test that must be taken in order to choose the right testing technique for proving the research hypothesis (Setiawan & Aden, 2020). Prerequisite tests carried out in this study were linearity test, homogeneity test and normality test. The data is said to be linear if the value of Sig < 0.05, the data is said to be homogeneous if the value of sig > 0.05 while the data is said to be normal if the value of sig. > 0.05. Furthermore, after the prerequisite

test is carried out, the T test and correlation test can be carried out. T test is used to determine the comparison between variables with a value of sig < 0.05 while the correlation test is used to determine the relationship between variables with a value of sig < 0.05.

■ RESULTS AND DISCUSSION

Descriptive analysis of attitude and interest

Descriptive statistics is the statistics section regarding data collection, presentation, determination of statistical values, making diagrams or pictures about something, here the data is presented in a form that is easier to understand or read. (Nasution, 2017). Descriptive statistical analysis was carried out by describing all data from all variables in the form of a frequency distribution (Soleh & Zainiyati, 2020).

The following describes the results of descriptive statistics on student attitudes and student interest variables in science subjects with fermented material, which results will be obtained from the distribution of questionnaires in grades VII A and VII B at SMPN 8 Batanghari and MTsN 6 Batanghari. The description of the results for the variables of students' attitudes towards science subjects with fermentation material for grades VII A and VII B at SMPN 8 Batanghari and MTsN 6 Batanghari on indicators of social implications of science is shown in the table below: The description of the results for the variables of students' attitudes towards science subjects with fermentation material for grades VII A and VII B at SMPN 8 Batanghari and MTsN 6 Batanghari on the indicators of interest in a career in science is shown in the table below:

In the results of the descriptive statistical test of the attitude variable, there are two indicators. In the first indicator, namely social implications of science, it was found that at

Table 6. Descriptions of students' attitudes towards science subjects with fermentation material on indicators of social implications of science

Student response		Interval	F	%	Category	Mean	Med	Min	Max
SMPN 8 Batanghari	VII A	7.0– 12.6	1	2.7%	Very Not Good	3.3784	3	1	5
		12.7- 18.2	4	10.8%	Not good				
		18.3 – 23.8	14	37.8%	Enough				
		23.9 – 29.4	16	43.2%	Good				
		29.5 – 35.0	2	5.4%	Very good				
	VII B	7.0– 12.6	0	0%	Very Not Good	3.4865	3	2	5
		12.7- 18.2	3	8.1%	Not good				
		18.3 – 23.8	18	48.6%	Enough				
		23.9 – 29.4	11	29.7%	Good				
		29.5 – 35.0	5	13.5%	Very good				
MTsN 6 Batanghari	VII A	7.0– 12.6	0	0%	Very Not Good	3.6757	4	2	5
		12.7- 18.2	4	10.8%	Not good				
		18.3 – 23.8	12	32.4%	Enough				
		23.9 – 29.4	13	35.1%	Good				
		29.5 – 35.0	8	21.6%	Very good				
	VII B	7.0– 12.6	0	0%	Very Not Good	3.6757	4	2	5
		12.7- 18.2	1	2.7%	Not good				
		18.3 – 23.8	13	35.1%	Enough				
		23.9 – 29.4	20	54.1%	Good				
		29.5 – 35.0	3	8.1%	Very good				

SMPN 8 Batanghari class VII A which was the most dominant with a good category of 43.2% as many as 16 people at an interval of 23.9 - 29.4 while class VII B was the most dominant with a good category of 35.1% as many as 13 people at an interval of 23.9 – 29.4. At MTsN 6 Batanghari class VII A was the most dominant with a good category of 35.1% as many as 13 people at an interval of 23.9 – 29.4 while class VII B in a good category was 54.1% as many as 20 people at an interval of 23.9 – 29.4. In the indicator of interest in a career in science at SMPN 8 Batanghari, class VII A is the most dominant with a sufficient category of 48.6% as many as 18 people with an interval of 18.3 - 23.8 while class VII B is 62.2% with a sufficient category of 23 people in the interval 18.3 – 23.8. At MTsN 5 Batanghari, the most dominant class VII A was 56.8% as many as 21 people at intervals of 23.9 – 29.4 while class VII B was 48.6% as many as 18 people at intervals of 23.9 – 29.4.

Table 7. Descriptions of student attitudes towards science subjects with fermentation material on indicators of interest in a career in science

Student Response		Interval	F	%	Category	Mean	Med	Min	Max
SMPN 8 Batanghari	VII A	7.0– 12.6	0	0%	Very Not Good	3.2432	3	2	4
		12.7- 18.2	5	13.5%	Not good				
		18.3 – 23.8	18	48.6%	Enough				
		23.9 – 29.4	14	37.8%	Good				
		29.5 – 35.0	0	0%	Very good				
	VII B	7.0– 12.6	2	5.4%	Very Not Good	3.2162	3	1	4
		12.7- 18.2	0	0%	Not good				
		18.3 – 23.8	23	62.2%	Enough				
		23.9 – 29.4	12	32.4%	Good				
		29.5 – 35.0	0	0%	Very good				
MTsN 6 Batanghari	VII A	7.0– 12.6	0	0%	Very Not Good	3.5946	4	2	5
		12.7- 18.2	1	2.7%	Not good				
		18.3 – 23.8	14	37.8%	Enough				
		23.9 – 29.4	21	56.8%	Good				
		29.5 – 35.0	1	2.7%	Very good				
	VII B	7.0– 12.6	0	0%	Very Not Good	3.4865	4	2	5
		12.7- 18.2	4	10.8%	Not good				
		18.3 – 23.8	13	35.1%	Enough				
		23.9 – 29.4	18	48.6%	Good				
		29.5 – 35.0	2	5.4%	Very good				

This study is in line with research conducted by (Astalini et al., 2019) which tested descriptive tests, but in this study only use indicators Enjoyment of science lesson Analysis, Leisure interest in science and Carrer interest in science. while in this study, descriptive results were tested on the attitude variable using two indicators. The description of the results for the variable of student interest for grades VII A and VII B at SMPN 8 Batanghari and MTsN 6 Batanghari on indicators of attention in learning is shown in Table 8.

Table 8. Descriptions of student interest in science subjects with fermentation material on indicators of attention in learning

Student Response		Interval	F	%	Category	Mean	Med	Min	Max
SMPN 8 Batanghari	VII A	4.0 – 7.2	0	0%	Very Not Good	3,7838	4	2	5
		7.3 – 10.4	2	5.4%	Not good				
		10.5 – 13.6	13	35.1%	Enough				
		13.7 – 16.8	13	35.1%	Good				
		16.9 - 20	9	24.3%	Very good				
	VII B	4.0 – 7.2	0	0%	Very Not Good	3.8	4	2	5
		7.3 – 10.4	1	2.9%	Not good				
		10.5 – 13.6	14	20%	Enough				
		13.7 – 16.8	11	31.4%	Good				
		16.9 - 20	9	25.7%	Very good				
MTsN 6 Batanghari	VII A	4.0 – 7.2	0	0%	Very Not Good	3.6944	3.5	2	5
		7.3 – 10.4	3	5.6%	Not good				
		10.5 – 13.6	16	44.4%	Enough				
		13.7 – 16.8	9	25%	Good				
		16.9 - 20	9	25%	Very good				
	VII B	4.0 – 7.2	0	0%	Very Not Good	3.7222	4	2	5
		7.3 – 10.4	3	5.6%	Not good				
		10.5 – 13.6	14	38.9%	Enough				
		13.7 – 16.8	12	33.3%	Good				
		16.9 - 20	8	22.2%	Very good				

The description of the results for the variable of student interest in science subjects with fermentation material for grades VII A and VII B at SMPN 8 Batanghari and MTsN 6 Batanghari on the indicator of feeling happy is shown in Table 9.

In the results of the descriptive statistical test of the interest variable, there are two indicators. In the first indicator, namely attention in learning it was found that SMPN 8 Batanghari class VII A the most dominant is 35.1% with good and sufficient categories as

Table. 9 Descriptions of student interest in science subjects with fermentation material on indicators of feeling happy

Student Response		Interval	F	%	Category	Mean	Med	Min	Max
SMPN 8 Batanghari	VII A	5 – 9	0	0%	Very Not Good	3.5833	3.5	2	5
		10 – 13	3	5.6%	Not good				
		14 – 17	16	44.4%	Enough				
		18 – 21	13	36.1%	Good				
		22 - 25	5	13.9%	Very good				
	VII B	5 – 9	0	0%	Very Not Good	3.5404	3	2	5
		10 – 13	3	5.4%	Not good				
		14 – 17	18	48.6%	Enough				
		18 – 21	12	32.4%	Good				
		22 - 25	5	13.5%	Very good				

MTsN 6 Batanghari	VII A	5 – 9	0	0%	Very Not Good	3.5556	3	3	5
		10 – 13	0	0%	Not good				
		14 – 17	20	55.6%	Enough				
		18 – 21	12	33.3%	Good				
		22 - 25	5	11.1%	Very good				
	VII B	5 – 9	0	0%	Very Not Good	3.5946	3	3	5
		10 – 13	0	0%	Not good				
		14 – 17	19	51.4%	Enough				
		18 – 21	14	37.85	Good				
		22 - 25	4	10.8%	Very good				

many as 13 people at intervals of 13.7 – 16.8 while class VII B was 31.4% with a good category as many as 11 people at intervals of 13.7 – 16.8. At MTsN 6 Batanghari class VII A was 44.4% with a sufficient category of 16 people at intervals of 10.5 – 13.6 while class VII B was 38.9% with a sufficient category of 1 person at intervals of 10.5 – 13, 6. In the indicator of feeling happy at SMPN 8 Batanghari, the most dominant class VII A is 44.4% with a sufficient category of 16 people at intervals of 14-17 while class VII B is 48.6% as many as 18 people at the same interval. At MTsN 6 Batanghari, the most dominant class VII A was 55.6% with a sufficient category of 20 people with an interval of 14-17 while class VII B was 51.4% with a sufficient category of 19 people at the same interval. This study is in line with research conducted by (Karina et al., 2017) which tested descriptive tests, but in this study only discuss interest in general without using any indicators. while in this study, descriptive results were tested on the interest variable using two indicators.

Comparative analysis.

In this assumption test, there are two tests that will be carried out, namely the normality test which serves to see whether the data is normally distributed or not, and also the linearity test which functions to see the linear relationship between the two variables to be tested. The assumption test on this data was carried out with the help of IBM SPSS Statistic 25. The Shapiro-Francia (SF) normality test is an important test in statistical modeling (Mbah & Paothong, 2015).

Normality test is used to test whether the data is normally distributed or not (Saerang et al., 2014). The data requirements are said to be normally distributed if the value of sig. > 0.05. Homogeneity test is a test used to determine whether the variance of the data distribution is the same (homogeneous) or not the same (non-homogeneous). The data requirements are said to be homogeneous if the value of sig.> 0.05. Linearity test is a test used to determine the form of the relationship between the independent variable or the dependent variable. The data conditions are said to be related if the value of sig. < 0.05.

The description of the results for the normality test of students' attitudes and interests towards science subjects with fermentation material for grades VII A and VII B at SMPN 8 Batanghari and MTsN 6 Batanghari is shown in Table 10. The description of the results for the homogeneity test of students' attitudes and interests towards science subjects with fermentation material for grades VII A and VII B at SMPN 8 Batanghari and MTsN 6 Batanghari is shown in Table 10.

The description of the results for the

Table 10. Descriptions of the normality test

Variable	School	class	Sig.	Distribute
Attitude	SMPN 8 Batanghari	VII A	0.200	Normal
		VII B	0.200	Normal
	MTsN 6 Batanghari	VII A	0.200	Normal
		VII B	0.096	Normal
Interest	SMPN 8 Batanghari	VII A	0.200	Normal
		VII B	0.089	Normal
	MTsN 6 Batanghari	VII A	0.200	Normal
		VII B	0.200	Normal

Table 11. Descriptions of the homogeneity test

Variable	*School*	*class*	*Sig.*	*Distribute*
attitude	SMPN 8 Batanghari	VII A VII B	0.373	Homogen
	MTsN 6 Batanghari	VII A VII B	0.834	Homogen
interest	SMPN 8 Batanghari	VII A VII B	0.363	Homogen
	MTsN 6 Batanghari	VII A VII B	0.277	Homogen

Table 12. Description of the results of the linearity test of students' attitudes and interests in science subjects

Variabel	*School*	*Sig.*	*distribute*
attitude*Interest	SMPN 8 Batanghari	0.012	Linear
	MTsN 6 Batanghari	0.013	Linear

linearity test of students' attitudes and interests in science subjects with fermentation material at SMPN 8 Batanghari and MTsN 6 Batanghari is shown in Table 11.

In this hypothesis test, the tests carried out are T test and correlation test. The t test aims to determine whether the independent variable has an effect on the dependent variable while the correlation test aims to determine the relationship between process skills and the jigsaw model on velocity and discharge material. The description of the results for the T-test of students' attitudes and interests towards science subjects with fermentation material at SMPN 8 Batanghari and MTsN 6 Batanghari is shown in Table 13. The description of the results for the correlation test between students' attitudes and interests in science subjects with fermentation material at SMPN 8 Batanghari and MTsN 6 Batanghari is shown in Table 14.

Based on table 10, the normality test of students' attitudes towards science subjects with fermentation material for grades

Table 13. T-test description of students' attitudes and interests towards science subjects

Variabel	*School*	*Class*	*Sig.(2-tailed)*
Attitude	SMPN 8 Batanghari	VII A	0.037
		VII B	
Interest		VII A	0.050
		VII B	
Attitude	MTsN 6 Batanghari	VII A	0.034
		VII B	
Interest		VII A	0.031
		VII B	

Table 14. Description of the correlation test of students' attitudes and interests towards science

School	*Variable*	*Pearson Correlation*	*Sig.(2-tailed)*	*N*
SMPN 8 Batanghari	Attitude Interest	0.618	0.015	74
MTsN 6 Batanghari	Attitude Interest	0.603	0.038	74

VII A and VII B at SMPN 8 Batanghari obtained results based on the Kolmogorov-Smirnov test, a significance value of 0.200> from 0.05 and MTsN 6 Batanghari obtained results based on the Kolmogorov-Smirnov test value the significance of 0.200> from 0.05, it can be concluded that the data is normally distributed. While the normality test of student interest in science subjects with fermentation material for grades VII A and VII B at SMPN 8 Batanghari, the results were obtained based on the Kolmogorov-Smirnov test, the significance value was 0.200> from 0.05 and MTsN 6 Batanghari obtained the results based on the Kolmogorov-Smirnov test, the significance value was 0.200> of 0.05, it can be concluded that the data is normally distributed. Based on table 11, the homogeneity test of students' attitudes towards science subjects with fermentation material for grades VII A and VII B at SMPN 8 Batanghari was obtained, a significance value of 0.373 > 0.05 while at MTsN 6 Batanghari obtained a significance value of 0.834 > 0.05, it can be concluded that the data is homogeneous, and the homogeneity test of students' interest in science subjects with fermentation material for grades VII A and VII B at SMPN 8 Batanghari was obtained, a significance value of 0.363 > 0.05 while at MTsN 6 Batanghari obtained a significance value of 0.277 > 0.05, it can be concluded that the data is homogeneous. Based on table 12. linearity test of students' attitudes and interests in science subjects with fermented material at SMPN 8 Batanghari and MTsN 6 Batanghari obtained a significance value of 0.012 < 0.05 and 0.013 > 0.05, so it can be concluded that there is a linear relationship between students' attitudes and interests in subjects Science with fermentation material at SMPN 8 Batanghari and MTsN 6 Batanghari.

The data analysis of the hypothesis testing used in this study were: T test and correlation test with the help of IBM SPSS Statistics 25. T-test was used to determine the relationship between two variables. To determine the correlation between scales, correlation

analysis is used (Can & Öztürk, 2019). The correlation test was carried out to determine the relationship between two variables, so that there were no dependent variables and independent variables in it (Tanti et al., 2021). Based on table 13 the T test of students' attitudes and interests towards science subjects with fermented material at SMPN 8 Batanghari and MTsN 6 Batanghari, the results of the T test for student attitudes at SMPN 8 Batanghari are sig. (2-tailed) 0.037 < 0.05 while for Student interest in SMPN 8 Batanghari is sig. (2-tailed) 0.047, so it can be concluded that there are differences in students' attitudes and interests towards science subjects and fermented materials at SMPN 8 Batanghari. for student attitudes at MTsN 6 Batanghari, namely the value of sig. (2-tailed) 0.034 < 0.05 while for student interest at MTsN 6 Batanghari the value of sig. (2-tailed) 0.031, it can be concluded that there are differences in students' attitudes and interests towards subjects IPA with fermented material at MTsN 6 Batanghari. Based on the table. 14 correlation tests of students' attitudes and interests towards science subjects with fermented material at SMPN 8 Batanghari and MTsN 6 Batanghari were obtained, the results of the correlation test were sig. (2-tailed) < 0.05, it can be concluded that there is a relationship between attitudes and students' interest in science subjects with fermented material at SMPN 8 Batanghari and MTsN 6 Batanghari with a Pearson correlation of 0.618 and 0.603 which means that at SMPN 8 Batanghari 61.8% the relationship between students' attitudes and interests can be categorized as good while the rest are related to other variables while at MTsN 6 Batanghari 60.3% the relationship between students' attitudes and interests can be categorized as good while the rest are related to other variables.

Previously, research on student attitudes towards science subjects had been conducted by (Astalini et al., 2018) The focus of this research is on 3 dimensions of attitude, namely the social implications of science, attitudes towards investigation and interest in a career in science. In this study, only 1 variable was used, namely student attitudes. Previously, research on the influence of interest on student learning outcomes has been carried out by (Nesi, 2018). In this study, it was found that interest in learning had an effect on student learning outcomes, and this study only used the variable of interest.

This research was conducted with the aim of knowing the comparison of students' attitudes towards science subjects, knowing the comparison of students' interest in science subjects with fermented material, and knowing the relationship between students' attitudes and interests in science subjects with fermented material. Students' attitudes and interests towards science subjects are important to study because students' attitudes and interests have no small influence on success, increase student learning outcomes, and affect student performance. Attitudes and interests are very important because the teacher can know that each student responds to science learning with an indication that students reject or accept science learning in students.

This study has many weaknesses due to the limitations of the author. These weaknesses include that the samples used in this study were only conducted at SMPN 8 Batanghari and MTsN 6 Batanghari grades VII A and VII B, so the results obtained might make a difference if they were carried out in other schools or classes. The data collection method used in this study only used questionnaire data, and the variables studied in this study were only variables of attitude and interest in science subjects.

CONCLUSIONS

Based on the results of hypothesis testing, research testing and data analysis, the conclusions of this study were 74 students' attitudes towards science lessons from 2 classes, namely class VII A as many as 20 girls and 17 boys and VII B as many as 20 girls and 17 boys. male. Then the interest sample was 74 from 2 classes, namely VII A as many as 20 female students and 17 male students and VII B as many as 20 female students and 17 male students. This research was conducted at SMPN 8 Batanghari and MTsN 6 Batanghari. Based on the T-test of students' attitudes and interests towards science subjects with fermented material, the results of the T-test were obtained, namely the value of sig. (2-tailed <0.05, it can be concluded that there are differences in students' attitudes and interests towards science subjects with fermented material at SMPN 8 Batanghari and MTsN Batanghari 6. Based on the results of the correlation test between students' attitudes and interest in science subjects with fermented material obtained, the results of the correlation test are sig.(2-tailed) <0.05 then, it can be concluded that there is a relationship between attitudes and students' interest in science subjects with fermented material at SMPN 8 Batanghari and MTsN Batanghari 6. The limitation of this study is that the sample used in this study was only conducted at SMPN 8 Batanghari and MTsN 6 Batanghari class VII A and VII B, so the results obtained may make a difference if it is carried out in other schools or classes Data collection methods used in the study This n only uses questionnaire data, and the variables studied in this study are only variables of attitudes and interests in science subjects. With the research on students' attitudes and interests towards science subjects with fermented material, the researchers hope that in the future there will be research on variables other than students' attitudes and interests as well as on other materials.

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