



A Scientific Learning Model for Interest and Science Process Skills

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Abstract

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This research was conducted with the aim of knowing the differences in science process skills and student interest in science subjects regarding environmental pollution with problem-based learning and problem-solving models for students in grades 7A and 7 B at SMPN 8 Muaro Jambi. This research was survey research, this study used quantitative data analysis with the help of SPSS statistics 25, to find descriptive statistics, test assumptions and test hypotheses. The results obtained from this study with a sample of 70 students from SMPN 8 Batanghari in Batanghari district. The subjects were grades 7A and 7 B consisted of 40 female students and 30 male students. Based on the T-test of science process skills and students' interest in the Science subject matter of environmental pollution with the problem-based learning model and problem solving for students in grades 7A and 7B. It was concluded that there were differences in science process skills and students' interest in science subjects with the model problem-based learning and problem solving for students in grades 7A and 7 B.

Keywords: Science process skills, Interests, environmental pollution materials

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INTRODUCTION

Education is very important for every individual. Education is basically an effort to develop the potential of quality human resources by guiding and facilitating learning activities (Astalini, Kurniawan, & Sumaryanti, 2018; Sukendar et al., 2019; Hendri et al., 2020). Education is a learning process to acquire knowledge, skills, attitudes, and thinking skills carried out by a person (Hidayat, 2017; Abbas et al., 2018; Rosidin et al., 2019). The success of education in a country automatically also shows the progress of a country. Ideally, education is significant in developing attitudes and skills (Campbell et al., 2017; Astalini et al., 2018; Maison, 2020). Education is a process of changing attitudes and behavior, forming attitudes, intellectual development, and developing students' skills.

Natural Science phenomena are very often encountered in everyday life. Science is a learning that is closely related to the environment and the regularity of the universe (Susilawati et al., 2017; Nurmayani et al., 2018; Fitriyah et al., 2019; Puspitasari et al., 2019). Science plays a role in developing students' mindsets using scientific concepts (Astalini, Kurniawan, & Putri, 2018; Bellová et al., 2018; Maison et al., 2018; Nielsen et al., 2018). Science is a subject that cannot be separated from the activities of daily life. This lesson is an integrated material between biology, physics, and chemistry (Abbas &

Yusuf Hidayat, 2018; Sudirman et al., 2020; Winarti, 2021). Science learning processes and outcomes are largely determined by the learning model used.

In learning, there are several models. The use of learning models greatly influences learning processes and outcomes (Brinus et al., 2019; Cahyaningrum et al., 2019; Hanifah et al., 2019). The learning model used can shape students' critical thinking (Trisdiono et al., 2019; Ulandari et al., 2019; Zulkarnain et al., 2019). To reach the learning objectives properly, it is necessary to select the right learning methods and strategies (Dian & Sri, 2017; Anugraheni, 2018; Mansur & Rafiudin, 2020). The method used by researchers in this study is problem-based learning and Problem Solving.

Problem-based learning models develop an understanding of important concepts and principles. The problem-based learning model is process-centered learning, focusing on problems, by integrating concepts (Kristanti et al., 2016; Mahasneh & Alwan, 2018; Trishchenko, 2018). Problem-based learning problems can also be interpreted as instructions that connect technology with problems of everyday life (Trianto, 2013; Rati et al., 2017; Maryati, 2018). The problem-solving learning model is a learning model that focuses on learning and problem solving skills (Irwanto et al., 2018; Mahayani et al., 2018; Puspita et al., 2018). The learning model that we choose greatly influences students' interest and science process skills.

Science process skills can be learned by students in a simpler form, science process skills are science skills that can be used in scientific activities to find problems and find solutions or identify solutions to problems. (Oktafiani et al., 2017; Darmadji et al., 2019; Gasila et al., 2019; Nurfillah et al., 2019) By activating science process skills, the quality of learning will be more interesting and create a positive impression for students (Dewi et al., 2019; Gusdiantini et al., 2019; Martiningsih et al., 2019) Science process skills are a set of processes designed in such a way that students understand facts, concepts, and relate them to the theory of science process skills and attitudes of students themselves that was obtained through observation during the learning process (Iswatun et al., 2017; Sakdiah et al., 2018; Gunawan et al., 2019). Everyone has a different level of science process skills, even from individual gender differences.

Interest is an impulse or desire in a person towards a particular object, a person's interest in learning is very important in supporting student learning success. Specifically in this study, the higher the student's interest in learning, the higher the ability of the student's learning outcomes (Prihatini, 2017; Zhai et al., 2019; Vargianniti & Karpouzis, 2019). Interest is a sense of liking and feeling more interested in a thing or activity, without anyone asking, for example having an interest in studying science (Astuti, 2017; Bicer & Lee, 2019; Hisbiyati & Khusnah, 2017; Muslim, 2018). People who are interested in the activity consider the activity in accordance with the sense of pleasure; students are not enthusiastic and do not take science lessons seriously. This shows that students do not yet have an interest in learning (Awe & Benge, 2017; Roller et al., 2020; Redan Werang, 2018). With a genuine interest in students, it brings a good impact on students, one of which is science process skills.

The similar research conducted by the previous research by several studies (Yati Lestari et al., 2018; Zani et al., 2019; Satnawati, 2020) whose conclusion states that students' process skills are highly dependent and affected learning interest. They possess and develop intellectual, social, and physical skills. The students' learning outcomes are not only limited to the knowledge aspect but also how the process of achieving the expected learning objectives can be met. Therefore, it can be concluded, based on student responses, that science process skills are highly dependent on interest.

Considering the the background and focus of the research, the researcher took the problem in this study to find out how the interests and science process skills of students 7A and 7B responded to the science subject matter of environmental pollution at SMPN 8

Batanghari using problem-based learning and the problem solving learning model to find out how the science ability of grade 7A students compared to grade 7B science students at SMPN 8 Batang used problem based learning and problem solving models. The purpose of this study was to find out how the interest of class 7A and 7B students towards environmental pollution at SMPN 8 Batang with learning models Problem Based Learning and Problem Solving.

METHODS

Research type

This research used a quantitative approach. Quantitative research is research that is structured and quantifies data to be generalized (Suwendra, 2018; Anshori, 2019; Budiarti, 2022). While the type of research in the study is the study of quasi experimental design. Research is to gain an understanding about a phenomenon of logic base, usually include the perspective of population studies (Albi & Johan, 2018; Rahmaningrum et al., 2020). In addition, it also aims to seek common ground on the population by way of notice in comparison to a standard that has been determined. Thus, this study measured how the interest and skills of the science process in the topic science of environmental pollution at SMP N 8 Batanghari with problem-based learning and problem-solving models

Population and Sample

Sample in research was the 70 students at the school SMPN 8 Batang. The population is people who become the subject of research (Banks et al., 2018; Novianti et al., 2019; Kamid et al, 2021). This research applied samples using sampling purposive with attention to the characteristics specified. Retrieval of data was using a questionnaire. Researchers use a quasi-experimental design for the present. There is a variable-variables from outside who are not able to be controlled by the researcher. Samples were students grade 7 A and 7 B which consists of 40 female students and 30 male students.

Research Instrument

Instruments was a sheet questionnaire distributed in two classes at the school in the interest and science process skills for science materials with the topic of environmental pollution using learning model problem-based learning and Problem Solving. The assessment of instrument is one of the most important assessment instruments in research (Purwanti et al., 2020). There were 47 items questions are valid on the instrument is using a scale Likert. According to Bertram (2013), a scale Likert a scale psychometric which is commonly used in the questionnaire, assessment of respondents is determined on the level of approval of the respondents to the question. Scale consists of 5 points of the value (highly agree for 5, agrees for 4, neutral for 3, not agree for 2, and very not agree for 1). Then, having applied Likert scale of 5, the scale consists of 5 points to the model of learning by 1 (very not good), 2 (not good), 3 (fairly good), 4 (good), 5 (very good). Each statement is representative of each indicator. The grid for the questionnaire for this research can be seen in the following Table 1.

Table 1. Grid of Questionnaire Instruments for Students' Science Process Skills in Science Subjects on environmental pollution with problem-based learning and Problem-Solving learning models

Variable	Indicator	No. Statement Items
Science process skills Students In Science Subject matter pollution of the environment	Observation	1,2,3
	Communication	4,5,6,7
	Classification	8,9,10,11,12
	Measure	13,14,15
	Conclusion	16,17,18,19
	Prediction	20,21,22,23,24
	Arrange tables	25,26,27
	Obtain and process data	28,29,30,31
	Trial analysis	32,33,34,35,36
	Creating a hypothesis	36,37,38,39
Designing experiments	39,40,41,42,43	
Doing an experiment	44,45,46,47	
Number of Statements		47

Category of science process skills students on environmental pollution science subjects with problem-based learning and problem-solving learning models can be seen in the following Table 2.

Table 2. Categories of Students' Science Process Skills in Science Subjects on environmental pollution with problem-based learning and Problem-Solving learning models

Category	Indicator Interval		
	Observation	Communication	Classification
Very Not Good	3 – 5.3	4 - 7	5 – 8.8
Not good	5.4 – 7.6	8 - 11	8.9 – 12.7
Good	7.7 - 10	12 - 15	12.8 – 16.5
Very good	10.1 – 12.4	16 - 19	16.6 – 20.3

Grid of student interest questionnaire instruments in science subjects with environmental pollution materials using problem-based learning and problem solving models can be seen in the table 3.

Table 3. Grid of student interest questionnaire instruments in science subjects with environmental pollution materials using problem-based learning and problem solving models

Variable	Indicator	No. Statement Items
Interest of students in the eyes of subjects of mathematics to materials wake space side flat with learning model problem-based learning and Problem Solving	Attention in learning	1,2,3,4
	Student engagement	5,6,7,8,9
	Happy feeling	10,11,12,13,14
	Feeling wants to know	15,16,17,18,19
	Learning materials and teacher attitudes	20,21,22,23,24,25
	Benefits of subjects	26,27,28,29,30
	Number of statements	30

Category of student interest in science subjects on environmental pollution with problem-based learning and problem solving learning models can be seen in the table 4.

Table 4. Category of Student Interest in Science Subjects on environmental pollution with problem-based learning and Problem Solving learning models

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

Data Analysis Technique

This study employed quantitative data analysis with the help of the SPSS application to find descriptive statistics. Descriptive statistics discusses ways of collecting, summarizing, presenting data so that information is obtained that is easier to understand with descriptive statistics, including data concentration, data distribution, the tendency of a data cluster, location size (Muchson, 2017). After the descriptive test was carried out, the prerequisite test was carried out (normality test and homogeneity test) to find out whether the data we used were normal and homogeneous for the next test, namely hypothesis testing. T-test was used to test the hypothesis to see the significance of the differences between variables and indicators. There is also the procedure for collecting data in this study according to the figure 1.

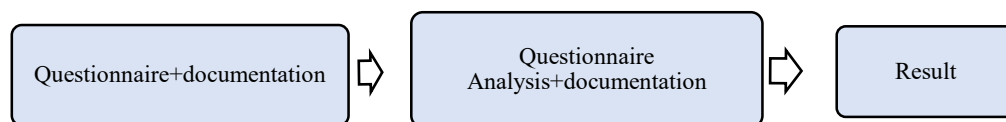


Figure 1. Data Analysis

RESULTS & DISCUSSION

Results

Descriptive Data

The results of the description of Students' Science Process Skills in Science Subjects on Environmental Pollution Materials Problem Based Learning and Problem-Solving Learning Models on Observation Indicators are shown in the table 5.

Table 5. Description science process skills students towards Subjects IPA material contamination of the environment with the model learning problem-based learning and Problem Solving on indicators Observations

Student Response	interval	F	Percentage	Category	mean	median	Min	Max
7 A	3 – 5.3	0	0 %	Very Not Good	2.7714	3	2	4
	5, 4 - 7.6	12	34.3 %	Not good				
	7.7 – 10	19	54.3 %	Good				
	10.1 – 12.4	4	11.4 %	Very good				
SMPN 8 Batanghari	3 – 5.3	6	17.1	Very Not Good	2.2571	2	1	3
	5, 4 - 7.6	14	40.0	Not good				
	7.7 – 10	15	42.9	Good				
	10.1 – 12.4	0	0 %	Very good				

Based on the results table can be seen that the presentation science process of science students to On Subjects IPA material environmental pollution learning model problem-based learning and Problem Solving in 7A class is better than the class 7B in science subjects at SMPN 8 Batanghari. The description of the results for the variable science process skills students to On Subjects IPA material environmental pollution learning model problem-based learning and Problem Solving in class 7 A and 7B on indicators Communication indicated in the table at the bottom of this:

Table 6. description of science process skills students towards Subjects IPA material contamination of the environment with the model learning problem-based learning and Problem Solving on indicators Communication

Student Response	interval	F	Percentage	Category	mean	median	Min	Max
7 A	4 - 7	1	2.9 %	Very Not Good	2.6000	3	1	3
	8 - 11	12	34.3 %	Not good				
	12 - 15	22	62.9 %	Good				
SMPN 8 Batanghari	16 - 19	0	0%	Very good	2.5714	2	1	4
	4 - 7	1	2.9 %	Very Not Good				
7 B	8 - 11	15	42.9 %	Not good				
	12 - 15	17	48.6 %	Good				
	16 - 19	2	5.7 %	Very good				

Based on the results table can be seen that the presentation science process of skills students to On Subjects IPA material environmental pollution learning model problem-based learning and Problem Solving in 7A class is better than the class 7B in science subjects at SMPN 8 Batanghari. The description of the results for variable process skills of science students to On Subjects IPA material environmental pollution learning model problem-based learning and Problem-Solving class 7 A and 7B on indicators of classification are shown in the table at the bottom of this:

Table 7. description of the science process skills students towards Subjects IPA material contamination of the environment with the learning model problem-based learning and Problem Solving b on the indicator classification

Student Response	interval	F	Percentage	Category	mean	median	Min	Max
7 A	4 - 7	0	0%	Very Not Good	2.9714	3	2	4
	8 - 11	5	14.3 %	Not good				
	12 - 15	26	74.3 %	Good				
	16 - 19	4	11.4 %	Very good				
SMPN 8 Batanghari	4 - 7	10	28.6 %	Very Not Good	2.2857	3	1	4
	8 - 11	6	17.1 %	Not good				
	12 - 15	18	51.4 %	Good				
	16 - 19	1	2.9 %	Very good				

Based on the results table, it can be seen that presentation process of science students to On Subjects IPA material environmental pollution learning model problem-based learning and Problem Solving in 7A class is better than the class 7B in science subjects at SMPN 8 Batanghari. The description of the results for the variable interest of students towards by Subject IPA material environmental pollution learning model problem-based learning and problem-solving class 7A and 7B on indicators of attention in the study are shown in the table at the bottom of this:

Table. 8 descriptions of students' interest in science subjects with environmental pollution materials using problem-based learning and problem-solving learning models on the Attention indicator in learning

Student Response	Interval	F	Percentage	Category	mean	median	Min	Max
7 A	4 – 7.2	0	0%	Very Not Good	3.7429	4	2	5
	7.3 – 10.4	2	5.7 %	Not good				
	10.5 – 13.6	13	37.1 %	Enough				
	13.7 -16.8	12	34.3 %	Good				
SMPN 8 Batanghari	16.9 – 20	8	22.9 %	Very good	3.8000	4	2	5
	4 – 7.2	0	0%	Very Not Good				
	7.3 – 10.4	1	2.9 %	Not good				
	10.5 – 13.6	14	40.0 %	Enough				
7 B	13.7 -16.8	11	31.4 %	Good				
	16.9 – 20	9	25.7 %	Very good				

Based on the results of the table, it can be seen that the presentation of students' interest in science subjects on environmental pollution with problem-based learning and problem-solving learning models in class 7B is better than class 7A in science subjects at SMPN 8 Batanghari. The description of the results for the variable interest of students towards By Subject IPA material environmental pollution learning model problem-based learning and problem solving class 7 A and 7B on indicators of involvement of students shown in the table at the bottom of this:

Table. 9 descriptions of students' interest in science subjects on environmental pollution with problem-based learning and problem-solving models on the indicators of student involvement

Student Response	Interval	F	Percentage	Category	mean	median	Min	Max
7 A	5 – 9	0	0%	Very Not Good	3.7429	4	2	5
	10 – 13	2	5.7 %	Not good				
	14 – 17	13	37.1 %	Enough				
	18 – 21	12	34.3 %	Good				
SMPN 8 Batanghari	22 – 25	8	22.9 %	Very good	3.6571	4	2	5
	5 – 9	0	0%	Very Not Good				
	10 – 13	1	2.9 %	Not good				
	14 – 17	14	40.0 %	Enough				
	18 – 21	16	45.7 %	Good				
22 – 25	4	11.4 %	Very good					

Based on the results of the table, it can be seen that the presentation of students' interest in science subjects on environmental pollution with problem-based learning and problem-solving learning models in class 7B is better than class 7A in science subjects at SMPN 8 Batanghari. The description of the results for the variable interest of students towards By Subject IPA material environmental pollution learning model problem-based learning and problem solving class 7 A and 7B on feeling happy the students are shown in the table at the bottom of this:

Table. 10 descriptions of students' interest in science subjects on environmental pollution with problem-based learning and problem-solving learning models on indicators of feeling happy

Student Response	Interval	F	Percentage	Category	mean	Median	Min	Max
7 A	5 – 9	0	0%	Very Not Good	3.6000	4	2	5
	10 – 13	2	5.7 %	Not good				
SMPN 8 Batanghari	14 – 17	15	42.9 %	Enough	3.5429	3	2	5
	18 – 21	13	37.1 %	Good				
	22 – 25	5	14.3 %	Very good				
	5 – 9	0	0%	Very Not Good				
7 B	10 – 13	2	5.7 %	Not good	3.5429	3	2	5
	14 – 17	17	48.6 %	Enough				
	18 – 21	11	31.4 %	Good				
	22 – 25	5	14.3 %	Very good				
	5 – 9	0	0%	Very Not Good				

Based on the results of the table, it can be seen that the presentation of student interest in science subjects on environmental pollution with problem-based learning and problem solving learning models in class 7A is better than class 7B in science subjects at SMPN 8 Batanghari.

Assumption Test

The results of the normality test for the science process skills of grade 7A and 7B students can be seen at table 11.

Table 11. Test Normality process skills of science students' grade 8A and 8B

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
7 A	.079	35	.200 [*]	.975	35	.584
7 B	.119	35	.200 [*]	.971	35	.470

Based on the table, the Kolmogorov-Smirnov test obtained a significance value > 0.05 , so it can be concluded that the research data class 7A and 7B in science subjects at SMPN 8 Batanghari is normally distributed so that it can be tested for further tests and can be used as a research source. The results of the normality test of interests of students in grades 7A and 7B are as follows:

Table 12. Normality Test of Interest of Grade 8A and 8B students

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistics	Df	Sig.	Statistics	df	Sig.
7A	.104	35	.200 [*]	.970	35	.450
7B	.126	35	.178	.973	35	.517

Based on the table, the Kolmogorov-Smirnov test obtained a significance value > 0.05 , so it can be concluded that the research data class 7A and 7B in science subjects at SMPN 8 Batanghari is normally distributed so that it can be tested for further tests and can be used as a research source. The results of the homogeneity test of the science process skills of the 7A and 7B students in this study are as follows:

Table 13. Homogeneous Test Science process skills of grade 7A and 7B students are as follows:

Test of Homogeneity of Variances						
		Levene Statistics	df1	df2	Sig.	
RESULT	Based on Mean	.108	1	68	.743	
	Based on Median	.046	1	68	.832	
	Based on Median and with adjusted df	.046	1	62,427	.832	
	Based on trimmed mean	.100	1	68	.753	

Based on the table, it can be seen that the data on the science process skills of students in grades 7A and 7B in science subjects at SMPN 8 Batanghari are homogeneous as evidenced by the value of sig > 0.05 . normal so that it can be tested for further testing and can be used as a research source because the data is homogeneous. The results of the Homogeneity Test of Interests of Class 7A and 7B students in this study are as follows:

Table 14. Homogeneous Test of Interest of Class 7A and 7B students

Test of Homogeneity of Variances						
		Levene Statistics	df1	df2	Sig.	
RESULT	Based on Mean	.109	1	68	.743	
	Based on Median	.040	1	68	.843	
	Based on Median and with adjusted df	.040	1	60,021	.843	
	Based on trimmed mean	.109	1	68	.743	

Based on the table, it can be seen that the data on the science process skills of students in grades 7A and 7B in science subjects at SMPN 8 Batanghari are homogeneous as evidenced by the value of sig > 0.05. normal so that it can be tested for further testing and can be used as a research source because the data is homogeneous.

Hypothesis Test

The results of the T-Test of students' science process skills with problem-based learning and Problem-Solving classes 7A and 7B in this study are as follows:

Table 15 . T-Test Science process skills of grade 7A and 7B students

Class	N	mean	Sig.	Sig. (2-tailed)
CLASS A	35	118.6857	0 743	0 038
CLASS B	35	117.6286		

Based on the table obtained a significance value >0.05, it can be concluded that there is a significant difference between students' science process skills with problem based learning and problem solving models in grades 7A and 7B in science subjects at SMPN 8 Batanghari. The results of the T-Test of students' interests with the problem-based learning model and Problem Solving in grades 7A and 7B in this study are as follows

Table 17. T-test of interest of grade 7A and 7B students

Class	N	mean	Sig.	Sig. (2-tailed)
CLASS A	35	110.3143	0 344	0 041
CLASS B	35	107.2571		

Based on the table obtained a significance value > 0.05, it can be concluded that there is a significant difference between the Interests learning model and the Problem Based Learning and Problem-Solving learning model for students in grades 7A and 7B. This significant difference made researchers conduct research to compare the two models, namely Problem Based Learning and Problem Solving in two different classes to find out how big the comparison is in science subjects at SMPN 8 Batanghari.

Discussion

In this study, researchers used a test statistics descriptive, Statistics Descriptive are methods that relate to the collection and presentation of a Data that provide information that is useful and easy to understand (Muchson, 2017). The results of the description for students' Science Process Skills on Science Subjects on environmental pollution with problem based learning and Problem Solving learning models on the Observation indicator found that the student's response in class 7A was better than class 7B, for students' Science process skills towards Eyes Science lessons on environmental pollution with problem based learning and Problem Solving learning models on skill indicators found that students' responses in class 7A were better than class 7B, for students' Science process skills on Science Subjects on environmental pollution with problem based learning models. and problem solving on the classification indicator, it was found that the student response in class 7A was better than class 7B.

Relevant research that is in line with this research which is related to descriptive is research conducted by Aryani et al., (2019) who conducted research by testing statistics so that it can be seen what percentage of students in different classes have more advantages. So, this study also tested descriptively to find out which class was superior in

testing indicators and variables used in the Problem Based Learning and Problem-Solving models in science subjects at SMPN 8 Batanghari.

Result for variable interest of students towards By Subject IPA material environmental pollution learning model problem based learning and Problem Solving indicator of the attention in the study found the result that the response graders 7B is better than the class 7A, Result for variable interest of students towards On Currency lesson IPA material environmental pollution learning model problem based learning and Problem Solving indicator of the involvement of students found the result that the response graders 7B is better than the class 7A, Result for variable interest of students towards the Subject IPA material environmental pollution learning model problem based learning and Problem Solving indicators of feeling happy, the results showed that the responses of class 7B students were better than those of class 7A.

In this study, to test the composite of hypothesis, researchers used the normality test and the homogeneity test. The Shapiro-Francia (SF) normality test is an important test in statistical modeling (Mbah & Paothong, 2015). The Normality Test Results grade students' science process skills 7A and 7B in the obtained test for normality with Kolmogorov-Smirnov test the value of significance $>$ of 0:05, then it can be concluded the data distribution is normal. The Normality Test Results grade student interest 7A and 7B in the obtained test for normality with Kolmogorov-Smirnov test the value of significance $>$ of 0:05, then it can be concluded the data distribution is normal. The results of the homogeneity test of students' interest in grades 7A and 7B can be seen that the data on science process skills of students in grades 7A and 7B are homogeneous, as evidenced by the value of sig $>$ 0.05. The results of the homogeneity test of students' interests in grades 7A and 7B can be seen that the interest data of students in grades 7A and 7B are homogeneous, as evidenced by the value of sig $>$ 0.05.

Relevant research that is in line with this research is related to descriptive research conducted by Ernawati et al., (2021) who conducted research by testing assumption tests so that it could be seen whether the data tested were normal and homogeneous. If there are normal and homogeneous data, the research conducted can be said to be reliable and accurate. Therefore, this study was also tested by testing the assumptions and data used in the problem-based learning and problem-solving models in science subjects at SMPN 8 Batanghari are normal and homogeneous so that this research is reliable and accurate.

In the hypothesis test, the researcher uses the T-test, the results of the T test for the science process skills of students with problem-based learning and Problem-Solving classes 7A and 7B in this study are obtained a significance value $>$ 0.05, it can be concluded that there is a significant difference between process skills students' science with problem-based learning and problem-solving learning models in grades 7A and 7B. The results of the T-test of students' interest with problem-based learning and Problem-Solving classes 7A and 7B in this study obtained a significance value $>$ 0.05, it can be concluded that there is a significant difference between students' science process skills and problem-based learning and problem-solving models. Solving in class 7A and 7B.

Relevant research that is in line with this research is that conducted by Satnawati (2020) whose conclusion states that students' process skills are highly dependent and influential on learning interest. they possess, develop intellectual, social, and physical skills. The learning outcomes obtained by students are not only limited to the knowledge aspect but also how the process of achieving the expected learning objectives can be met. This study also conducted research related to students' science process skills in two classes using two models, namely Problem Based Learning and Problem Solving in science subjects at SMPN 8 Batanghari. Therefore, it can be concluded based on students' responses that science process skills are highly dependent on interest.

The novelty of this research is that it uses two variables, namely students' science process skills and students' interests by using two learning models, namely problem-based learning and problem solving where there is no research that has tested two variables with two learning models at the same time at the high school level. Research is carried out with the purpose to know the comparison of science process skills students in the class 7A da 7B at SMPN 8 Muara Jambi to On Subjects IPA material environmental pollution learning model problem-based learning and Problem Solving. In addition, it also aims to determine the comparison of the interests of class 7A and 7 B at SMPN 8 Muaro Jambi to the Science Subjects on environmental pollution with problem-based learning and problem-solving learning models.

This research has a lot of weakness due to the limitations on the author. The weakness are samples were used in the study is only done in SMPN 8 Batang class 7 A and 7 B so that the results are obtained may be causing the difference if done at school or grade other. The data collection method used in this study only used questionnaire data. The researchers only explored variable skills of process and interest of students in Subjects IPA material environmental pollution learning model problem-based learning and Problem Solving. Thus, it is hoped that this research can be the basis and reference for further research.

Researchers are well aware that there were many flaws in this study; therefore, the results are obtained may be causing the difference if done at other schools or grades. The technique of data collection used in this study used questionnaire data. The researcher only conducted research on the variables of process skills and student responses with student interest in the science subject matter of environmental pollution with problem-based learning and problem-solving learning models. It is hoped that further research can be carried out with different variables, indicators, learning models and classes.

CONCLUSION

Based on the results of testing of hypothesis testing research and analysis of data, then the conclusion of the study is the sample of 70 students of SMPN 8 Batang. Subjects were taken is class 7 A and 7 B which consists of 40 female students and 30 male students. Based on the T test of students' science process skills with problem-based learning and problem-solving classes 7A and 7B in this study, the results obtained and then concluded that there was a significant difference between students' science process skills with problem-based learning and problem-solving models in class 7A and 7B. The results of the T-test of students' interests with problem-based learning and problem-solving classes 7A and 7B in this study were obtained and concluded that there was a significant difference between students' science process skills with problem-based learning and problem-solving models in class 7A and 7B.

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