The Effect of Course Review Horay Type Cooperative Learning Model on Mathematics Problem Solving Ability of Class X Students of SMK NEGERI 3 GUNUNGSITOLI

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Abstrak

Matematika merupakan mata pelajaran yang penting dikuasai oleh siswa di sekolah. Namun kenyataannya siswa SMK Negeri 3 Gunungsitoli masih mengalami hambatan dalam pemecahan masalah matematis karena proses pembelajaran menggunakan model pembelajaran konvensional. Sehingga siswa tidak mampu menjawab pertanyaan yang diberikan oleh guru. Tujuan dari penelitian ini adalah untuk mengetahui apakah ada pengaruh model pembelajaran *Course Review Horay* terhadap kemampuan pemecahan masalah matematis siswa di SMK Negeri 3 Gunungsitoli. Jenis penelitian ini adalah eksperimental semu dengan paradigma kuantitatif. Model pembelajaran yang digunakan adalah model *Course Review Horay.* Langkah pertama yaitu menyampaikan materi yang akan disajikan, langkah kedua yaitu menjelaskan materi, langkah ketiga yaitu siswa berdiskusi tentang materi yang sudah dijelaskan. Selanjutnya, hasil penelitian ini diperoleh berdasarkan pengujian hipotesis, yaitu $t_{hitung} = 4{,}12$ dan $t_{tabel} = 1{,}67$ Karena $t_{hitung} = 4{,}12 > t_{tabel} = 1{,}67$, maka tolak H_o dan terima H_1, yang berarti: "Ada pengaruh model pembelajaran *Course Review Horay* terhadap kemampuan Pemecahan Masalah matematis siswa". Sehingga dapat disimpulkan bahwa model pembelajaran *Course Review Horay* memiliki pengaruh terhadap kemampuan pemecahan masalah matematis siswa.

Kata Kunci: Model Pembelajaran Course Review Horay, Kemampuan Pemecahan Masalah Matematis.

Abstract

Mathematics is an important subject for students to master at school. However, in reality, students at SMK Negeri 3 Gunungsitoli still experience obstacles in solving mathematical problems because the learning process uses conventional learning models. So students are unable to answer the questions given by the teacher. The aim of this research is to find out whether there is an influence of the Course Review Horay learning model on students' mathematical problem solving abilities at SMK Negeri 3 Gunungsitoli. This type of research is quasi-experimental with a quantitative paradigm. The learning model used is the Course Review Horay model. The first step is to convey the material that will be presented, the second step is to explain the material, the third step is for students to discuss the material that has been explained. Furthermore, the results of this research were obtained based on hypothesis testing, namely tcount = 4.12 and ttable = 1.67 Because tcount = 4.12 > ttable = 1.67, then reject Ho and accept H1, which means: "There is an influence of the learning model Course Review Hooray on students' mathematical problem solving abilities. So it can be concluded that the Course Review Horay learning model has an influence on students' mathematical problem solving abilities.

Keywords: Course Review Horay Learning Model, Mathematical Problem Solving Ability.

Introduction

Education plays an important role in improving human resources. Quality education will produce smart, qualified humans and can develop one's skills. According to Naharir et al (2018), the task of education is to form good citizens, develop skills and character, personality and civilization in a dignified human life. In accordance with the objectives of education mentioned in Law number 20 of 2003 article 3 states that:

> National education functions to develop knowledge and shape the character and civilization of a dignified nation in order to educate the nation's life, and aims to develop the potential of students to become human beings who are faithful and devoted to God Almighty, reasonable, healthy, knowledgeable, skilled, creative, independent, and become democratic and responsible citizens.

In the world of education, it cannot be separated from learning in schools which involves interaction between students and teachers. Teachers in the learning process should be more creative in developing learning methods and techniques so that the learning process can be of interest to students. One of the subjects in the world of education is learning mathematics. Mathematics learning is a universal learning that has been based on elementary, junior high, high school / vocational school and even college.

Mathematics is one of the subjects that must be learned and mastered by students in every educational institution. The importance of mathematics in students' daily lives is very directly related, especially simple calculations. Mathematics is a subject that can encourage students to observe, reflect, and consider logically a problem in providing ideas (Winata and Friantini, 2019; Uchechi, 2013).

According to Hendriana et al (2018), many problems are observed in learning mathematics in schools, both by students, the teachers themselves, and factors originating from schools, therefore it is necessary to improve this learning (Calor et al., 2019). According to Permendikbud number 22 of 2016, the objectives of learning mathematics are understanding mathematical concepts, reasoning polar mathematical properties, solving mathematical problems, communicating arguments or ideas with diagrams, having an attitude of appreciating the usefulness of mathematics in life.

According to Purnamasari & Setiawan (2019) that problem solving ability is a skill in students to be able to mathematically solve problems related to mathematics or in other sciences and problems that students often encounter in real life.

But in reality, mathematical problem solving is not in line with the real problem solving ability. Judging from the results of the implementation of PISA (Programme for International Student Assement) in 2018, it shows that Indonesia's mathematics achievement is ranked 75 out of 81 participating countries, with a score of 379 from an average score of 487. From these facts, it shows that the ability to learn mathematics in Indonesia is still relatively low.

Based on preliminary studies conducted at SMK Negeri 3 Gunungsitoli, there are still many students who still have difficulty in working on mathematical problems and have low ability to solve mathematical problems, students simply learn formulas that are memorised, but students do not convey their mathematical ideas in solving mathematical problems. Whereas in mathematical problem solving activities, students are expected to be able to apply their concepts and abilities to solve problems. According to Croft, Kouvela & Paul Hernandez-Martinez (2018) stated that "a problem is halfway between an exercise whose solution is immediately known and a puzzle that has no clear solution strategy and can only be understood by skilled students". According to Prediger (2019) problem solving is:

The use of mathematics both for mathematics itself and the application of mathematics in everyday life creatively, to solve problems for which there is no obvious solution. Problem solving can also be interpreted as finding steps to overcome existing gaps. Meanwhile, problem solving itself is a human activity in applying previously acquired concepts and rules (Olsson, 2019).

From some of the definitions above, it can be concluded that problem solving is a process of student effort using all their knowledge, skills, and understanding to find solutions to the problems they face. Based on information that has been obtained by direct interviews with Mathematics Teachers at SMK Negeri 3 Gunungsitoli, the low understanding of students in solving mathematical problems faced is due to the learning model used which is still conventional which causes students to tend to be passive or just receive information from the teacher and lack active participation in learning.

This can be seen from the picture of students' answers in working on problem solving problems.
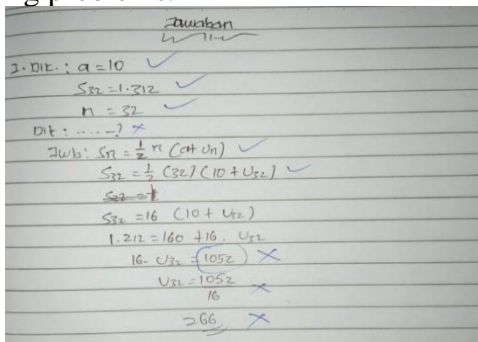

Figure. Student's answer.

From the picture, it can be seen that students cannot plan and implement problem solving correctly. From these problems, an appropriate learning model is needed to overcome these problems by applying the Cooperative learning model so that students become more active, cooperate, excited and able to understand mathematical concepts in order to support the smooth learning process and achieve learning objectives. One of the cooperative learning models used to develop problem solving skills is the Course Review Horay type cooperative learning model. This model trains students' thinking power in solving problems, the first student to get the correct mark shouts hooray or other yells. The Course Review Horay learning model also has advantages including creating a fun learning atmosphere because it is interspersed with entertainment and training cooperation in answering questions given by the teacher in groups. Nureva, et all (2019) Course Review Horay is "one type of learning model that can encourage students to participate actively in learning and support students in the learning process".

Based on the explanation of the problems above, researchers are interested in conducting research with the title "The Effect of Course Review Horay Type Cooperative Learning Model on Mathematical Problem-Solving Ability of Class X Students of SMK Negeri 3 Gunungsitoli"

Method

This research is a type of quantitative research using the Quasi Experimental research method. There are several quasi-experimental research designs, but the one used in this research is Nonequivalent Control Group Design which means that the pretest-post-test design uses a control group without random assignment. In this study, the experimental class will get the treatment of learning mathematics by using the course review horay learning model. This class will be given a pretest and posttest, the subjects in this study were class X students of SMK Negeri Gunungsitoli consisting of two classes. The instrument used in this research is a 5 item description test, which is used to measure the test results of students' mathematical problem solving ability.

Result and Discussion

This research is a pseudo-experimental research. This research data consists of initial and final tests on the material that has been given by applying the course review horay learning model. Before collecting data, researchers conducted logical validation analysis to experts. This is to strengthen the feasibility of the test instrument to be used. After the logical validation results are valid, the test instrument will be tested at SMK Negeri 1 Gunungsitoli Barat with 22 students. Tests are carried out to determine validity, reliability, level of difficulty and distinguishing power.

a. Instrument Trial Results

1. Test Validity Test
Based on the validity test data of the mathematical problem solving ability test, the validity test results of each product

Tabel. Deskripsi Uji Validitas T

Correlations

		soal_1	soal_2	soal_3	soal_4	soal_5	Skor_Total
soal_1	Pearson Correlation	1	.907"	.962"	.950"	.763"	.978"
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	22	22	22	22	22	22
soal_2	Pearson Correlation	.907"	1	.926"	.954"	.690"	.958"
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	22	22	22	22	22	22
soal_3	Pearson Correlation	.962"	.926"	1	.960"	.695"	.972"
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	22	22	22	22	22	22
soal_4	Pearson Correlation	.950"	.954"	.960"	1	.667"	.969"
	Sig. (2-tailed)	.000	.000	.000		.001	.000
	N	22	22	22	22	22	22
soal_5	Pearson Correlation	.763"	.690"	.695"	.667"	1	.808"
	Sig. (2-tailed)	.000	.000	.000	.001		.000
	N	22	22	22	22	22	22
Skor_Total	Pearson Correlation	.978"	.958"	.972"	.969"	.808"	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	22	22	22	22	22	22

**. Correlation is significant at the 0.01 level (2-tailed).

4. Differentiating Power Calculation
Differentiating power is the technical ability of learning outcomes to distinguish high and low ability students. The upper student group is a group of students who are classified as intelligent or have high overall learning outcomes, and

number are shown in the following table. From the results of the validity calculation, subject numbers 1-5 are declared valid which is indicated by the value of rcount ≥ rtable, where rtable = 0.423 so that it can be used as a research instrument.

2. Test Reliability
A tool is said to have a high reliability value if the test it makes has consistent results in measuring what it is intended to measure. Based on the calculation of the hardware reliability test, rcount = 0.965 for all items, and rtable = 0.423. Because rcount> rtable in the r table, the test is declared reliable.

3. Test Level of Difficulty
Based on the results of calculating the difficulty level of each test question, all test questions at points 1-5 have their respective difficulty levels. The results of the calculation of the level of difficulty achieved according to the following table:

Table. Category Description of Level of Difficulty

No. Soal	Tingkat Kesukaran	Kriteria
1	0,73	Mudah
2	0,70	Mudah
3	0,58	Sedang
4	0,54	Sedang
5	0,25	Sukar

the lower student group is a group of students who get low overall scores.
Based on the calculation of the difference between the top student group and the bottom student group, the results are obtained as in the following table: lower students, then obtained as in the following table:

Table. Description of the Interpretation of Distinguishing Power

No. Soal	D_p	Interprets
1	0,43	Good
2	0,36	Enough
3	0,42	Good
4	0,37	Enough
5	0,32	Enough

b. Processing of Problem Solving Ability Test
a.Initial Test
1.Preliminary Test of Problem Solving Ability

In this study, before applying the Course Review Horay approach learning model, it is necessary to conduct a preliminary test, where the number of students who take the preliminary test is 34 people in the experimental class and 34 people in the control class, totalling 68 students. students as a whole. The preliminary test was made with question descriptions that contained indicators of students' ability to solve mathematical problems. It has 5 questions and is suitable for testing students. The processing done by the researcher was the same as in the original test supplement. Thus, the average obtained for each category can be seen in the following table:

Table Description of the Mean Value of Mathematical Problem Solving Ability of Experimental Class and Control Class

Class	N			$\bar{X}$
Experiment	34			42
Control	34			32

However, if we compare the students' scores on each indicator of both the experimental and control classes, it can be seen that the experimental class indicators are higher than the control class, as shown in the following.
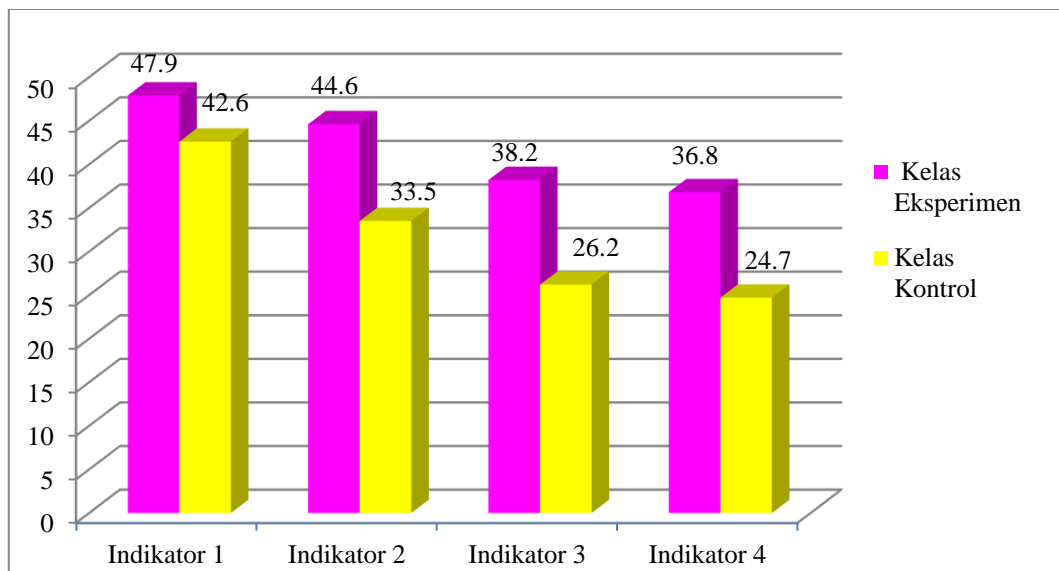

Figure 4.1 Diagram of Average Score of Initial Test of Mathematical Problem Solving Ability of Experimental and Control Class Students

Based on Figure 4.1, it can be seen that in the first indicator 1, namely. understanding the problem of known elements, questionability and adequacy of the required elements in the experimental class obtained a score of 50.5 in the appropriate category, while in the com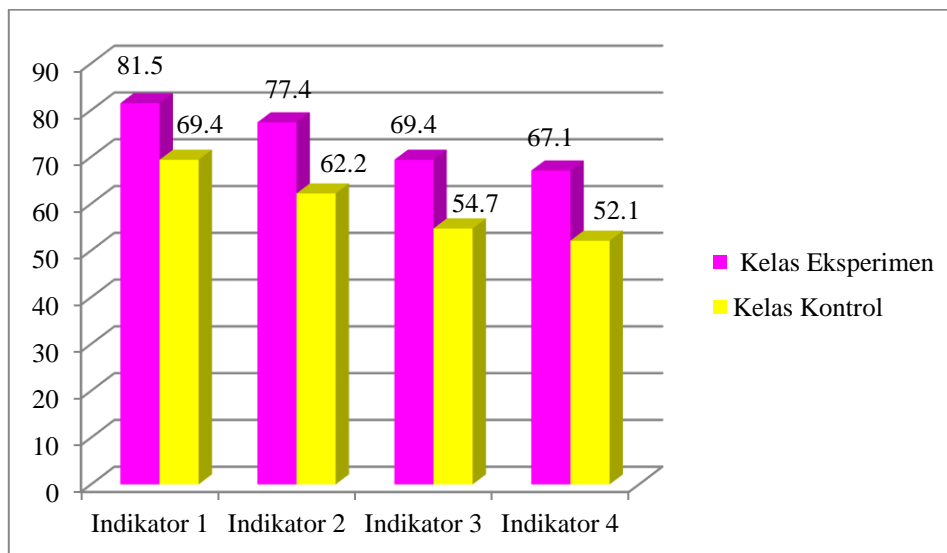parison class obtained a score of 40.5 in the poor category. The score of indicator 2, namely planning the test class, was 35.2 and 23.3 in the control class, in the poor class, the score of indicator 3, namely. the performance of the test class was 41.9 and in the control class. in the class obtained a score of 36.7 in the poor category, and finally in the retest indicator 4, namely. in

the experimental class obtained a score of 26.5 and in the control class of 17.9 in the poor category. Thus it can be concluded that in the initial test the average achievement of students' mathematical problem solving skills was still in the poor category because they did not receive treatment.

2. Final Test of Problem Solving Ability

The results of the calculation of the final results of students' mathematical problem solving ability based on problem solving points are presented in the table as follows.

Table 4.10 Description of the Average Value of Mathematical Problem

Solving Ability of Experimental Classes and Control Classes

Class	N	$\bar{X}$
Experiment	34	75
Control	34	60

However, if we compare the results of student scores on each indicator in both the experimental and control classes, it can be seen that the experimental class indicators are higher than the control class, as shown in the following figure.

Thus, the final test results show that the value of students' mathematical problem solving ability in the experimental class treated with the Course Review Horay learning model is better than the average value of students in the control class treated with the conventional learning model.

3. Normality Test

Normality test is used to determine whether the data of students' mathematical problem solving ability test scores are normally distributed. The results of the normality calculation, which is calculated by the Liliefors test in the appendix of the final test data, show that the final test data is normally distributed. The normality test results are shown in the following table:

Table 4.11 Description of Normality Test

Class	Test	l_{hitung}	l_{tabel}
Experiment	Akhir	0,1440	**0,1519**
Control	Akhir	0,1485	

Based on table 4.11 obtained in the experimental class the lhitung test value in the final test is 0.1440 and the lhitung in the control class is 0.1485 with ltabel is 0.1519. Because lhitung in both the experimental and control classes is smaller than ltabel, the data is normally distributed.

4. Homogeneity Test

a. Homogeneity Test of Initial Test
The homogeneity test carried out on the initial test of this study aims to determine whether the two classes as research samples are homogeneous. In connection with the calculation of the homogeneity test using the fisher test, Fcount < Ftable or 1.62 < 1.8, so it can be declared homogeneous.

b. Homogeneity Test of Final Test
The homogeneity test carried out on the final test of this study aims to determine the type of research hypothesis testing statistics. Based on the calculation of the homogeneity test carried out using the fisher test, Fcount < Ftable or 1.1 < 1.8, so it can be declared homogeneous.

5. Hypothesis Test
In this study, to prove the research hypothesis, hypothesis testing was carried out using parametric statistical tests (independent t test).
Statistical hypothesis formulation, namely:
  Ho: $\mu_{(1)} = \mu_{(2)}$ (Main hypothesis)
  H1: $\mu_{(1)} \neq \mu_{(2)}$ (Alternative hypothesis)
With the Research Hypothesis:
Ho = there is no effect of Course Review Horay Type Cooperative Learning model on mathematical problem solving ability of Class X Students of SMK Negeri 3 Gunungsitoli.

H1 = there is an effect of Course Review Horay Type Cooperative Learning model on mathematical problem solving ability of Class X Students of SMK Negeri 3 Gunungsitoli.

The results of hypothesis testing show that the tcount value = 4.12 and the ttable value = 1.67. Because tcount is greater than ttable or 4.12 is greater than 1.67, Ho is rejected and H1 is accepted. So it can be concluded that students' mathematical problem solving ability is influenced by the Horay Class Review type cooperative learning model.

6. Coefficient of Determination
Based on the calculation of the coefficient of determination, the coefficient of determination is 0.758 with a correlation value of 0.871.

Table 4.8 Percentage of the influence of the course review horay Cooperative Learning Model for Mathematical Problem Solving Ability

6. Coefficient of Determination
Based on the calculation of the coefficient of determination, the coefficient of determination is 0.758 with a correlation value of 0.871.

Table 4.8 Percentage of the effect of the course review horay Co-operative Learning Model for Mathematical Problem Solving Ability

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.871ᵃ	.758	.751	7.323

a. Predictors: (Constant), Tes_Akhir_Eksperimen

Conclusion
In terms of the formulation of the problem and research objectives, the following conclusions can be given:
1.The results of hypothesis testing show that the tcount value = 4.12 and the ttable value = 1.67. Because the value of tcount = 4.12 is greater than the value of ttable = 1.67, Ho is rejected and H1 is accepted, which indicates that "There is an effect of the course review horay type cooperative learning model on students' mathematical problem solving skills".

2.And the effect of course review horay learning model on mathematical problem-solving ability is 75.8%.

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