Application of Team Teaching Learning Methods on Mathematics Learning Results in Vocational High School Country Abdi Binjai

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Abstract

Team teaching di Indonesia telah diterapkan dan membawa dampak terhadap proses belajar siswa serta keberhasilan dalam belajar. Team Teaching membawa dampak bagi Pendidikan di Indonesia karena dengan menerapkan metode ini di sekolah-sekolah dapat membantu keberhasilan proses mengajar. Penelitian ini bertujuan untuk mengetahui penerapan metode pembelajaran team teaching terhadap hasil belajar mata pelajaran matematika. Metode yang akan digunakan adalah dengan eksperimen. Penelitian dilakukan pada siswa Kelas X. Penelitian ini menggunakan dua kelas untuk penelitian sebanyak 75 siswa, kelas A sebagai kelas kontrol dengan metode ceramah dan kelas B sebagai kelas eksperimen dengan metode team teaching, dari kedua metode yang digunakan, peneliti akan melihat dan membandingkan hasil belajar siswa. Berdasarkan penelitian diperoleh sebagai berikut: (1) kedua data normal dan homogen, (2) terdapat perbedaan antara siswa yang pembelajaraanya menggunakan metode team teaching dengan metode ceramah. Hasil penelitian menunjukan bahwa, siswa yang kegiatan pembelajarannya menggunakan metode team teaching dapat meningkatkan hasil belajar pada mata pelajaran matematika.

Keywords: Team Teaching, Hasil Belajar, Matematika

Abstract

Team teaching in Indonesia has been implemented and has an impact on student learning processes and success in learning. Team Teaching has an impact on education in Indonesia because applying this method in schools can help the success of the teaching process. This study aims to determine the application of the team teaching learning method to the learning outcomes of mathematics subjects. The method to be used is by experiment. The study was conducted on students of Class X. This study used two classes for the study of 75 students, class A as a control class with the lecture method and class B as an experimental class with the team teaching method, from the two methods used, researchers will see and compare the learning outcomes of students. Based on the research obtained as follows: (1) both data are normal and homogeneous, (2) there are differences between students whose learning uses the team teaching method and the lecture method. The results showed that students whose learning activities used the team teaching method could improve learning outcomes in mathematics.

Introduction

Mathematics is a universal science that underlies the development of modern technology. That is, mathematics has a very important role in various disciplines and advances the power of human thought. This can be seen from the very rapid development of technology lately, where the development of technology is based on the development and application of mathematics in various fields. So to master and creating technology in the future requires a strong mastery of mathematics. Starting from these perceptions or opinions, mathematics subjects are given to all students from elementary school to high school/vocational level equivalent (Ramdani 2018; Sulastri 2022).

(Mesiono 2022; Zaini 2017) Today, along with the increasingly modern education system and growing demands, it is not uncommon for schools to still use conventional learning methods in carrying out the learning process. In learning with this conventional method, the learning process is carried out solitary, meaning that the learning process starting from planning, and implementing, to evaluating student learning is carried out by one teacher. Nowadays the education curriculum in Indonesia is growing. There have been many demands that have been made on teachers. Currently, teachers are required to be more innovative and creative in choosing and determining the learning methods used, which of course must be adapted to the subject matter that will be delivered to students. (Marsudi 2013; Zahrawati and Ramadani 2021).

The use of appropriate learning methods will determine the success of students' learning in the classroom. The learning method is a method used by teachers so that learning activities can be achieved optimally so that students can learn well, thus learning takes place effectively and efficiently. The importance of a learning method depends on the application of teacher creativity in teaching and this is very much needed in schools (Gultom 2020).

(Lindawati and Rahman 2020) mentions that the learning model is a plan or pattern that is used as a guide in planning classroom learning or tutorial learning (Fikri et al. 2021; Nilawati 2020) argues that the more precise the method used by the teacher in teaching, it is hoped that the more effective the achievement of learning objectives will be. In addition, if the right learning method is used, it will improve student learning outcomes. Learning outcomes can be known during the activity or the learning process, which can be seen when the teacher teaches whether the student can understand what has been conveyed and desired by the teacher, and follows what has been set in the curriculum. The learning outcomes achieved by students are very diverse, there are high, medium, and low.

Learning is said to be successful if students can master the competencies expected in teaching material, and students are actively involved, both physically, mentally and socially in the learning process, namely by showing high enthusiasm for learning, great enthusiasm for learning, and self-confidence. alone. One of the factors that cause students to be less active when learning, especially in mathematics is the selection of methods in learning. If the learning method used by the teacher is monotonous, then students will feel bored and even less interested in the material being taught, so this can cause students not to show a sense of enthusiasm for the material and they will assume that mathematics is difficult to understand.(Muhammad Yunan Harahap 2018).

For this reason, in learning mathematics, teachers must be able to activate students during the learning process and reduce the tendency of teachers to dominate the learning process. The emergence of team teaching or team learning can be used as a solution to reduce teacher domination over students. Where is the characteristic of team learning, a teacher should not be selfish by thinking he is always right when dealing with students. So that team learning can reduce or even eliminate learning that tends to be solitary. In addition, teachers in the current era are also required to get to know each student better. Seeing the ratio between the number of teachers and students who are not balanced, of course, a teacher may not be able to handle a large number of students.

Starting from the description above, the formulation of the problem in this study is whether the Application Of Team Teaching Learning Methods On Mathematics Learning Results In Vocational High School Country Abdi Binjai.

Method

The research method used is experimental, where in this study the researcher does not control all relevant variables(Arikunto, Suhardjono, and Supardi 2015). This experimental research was conducted in two classes, namely the control class and the experimental class. The experimental class uses the team teaching learning method (teaching in teams), while the control class uses conventional learning. The design of this research is a Posttest-Only Control Design in the form of a quasi-experimental(Sugiyono 2012) is as follows:

Table 1. Posttest-Only Control Group Design

Group	Treatment	*Posttest*
Experiment	X	O
Control	-	O

The results of the treatment given can be seen from the difference between the posttest results of the experimental class using the team teching learning method and the control group using the conventional learning method. The data collection technique used is in the form of a test given to students in the form of an essay test. The test is carried out to see students' ability to use the knowledge they have built-in solving mathematical problems.

In this study, data analysis was carried out using descriptive and inferential statistics. Descriptive statistics were carried out to obtain a description of the characteristics of the distribution of scores for each variable studied in the form of average, standard deviation, frequency distribution, variance, mode, and median as well as making histograms. While the inferential statistics were carried out by using the T-formula test (t-count) on the t-test. The mean difference test technique in this study used an unpaired t test. All measurements were carried out at a significance level of = 0.05.

The steps are taken in data analysis, namely:
1. Processing scores from research instruments and distributing data is presented in the form of data grouping, mean, median, mode, standard deviation, frequency distribution, variance, and making histograms of the scores of each variable.
2. Test requirements analysis consisting of normality test and homogeneity test. The normality test of the sample was carried out with the Liliefors test, and the homogeneity test with the F (Fisher) test.

Results and Discussion
Research result

To obtain an overview of the characteristics of the distribution of scores for each of the variables studied, the mean, variance, standard deviation, frequency distribution, mean, mode, and histogram are presented. The data of mean, variance, standard deviation, frequency distribution, mean, and mode are presented in the following table:

Table 2. Description of Mathematics Learning Outcomes Data

	Learning outcomes	
	Experiment Class	Control Class
mean	64.5238	56.0811
median	65,0000	50,0000

Mode	75.00	45.00
Standard Deviation	18.03822	16.58878
Variance	325,377	275,188
Minimum	30.00	25.00
Maximum	95.00	95.00

The data analysis technique used the T-formula (t-count) analysis technique on the t-test of the mean difference test with unpaired t-test. However, first test the requirements of the analysis by testing for normality and homogeneity.

Normality test

The normality test was carried out on the variable data of the experimental class and the control class by using the Liliefors test at = 0.05. The results of the normality test are summarized in the following table:

Table 3. Normality Test

		Kelas_Kontrol	Kelas_Ek sperimen
N		37	42
Normal Parameters[a,b]	Mean	56,0811	64,5238
	Std.Deviation	16,58878	18,03822
Most Extreme Difference	Absolute	,184	,148
	Positive	,184	,080
	Negative	-,117	-,148
Kolmogorov-Smirnov Z		1,117	,958
Asymp. Sig. (2-tailed)		,165	,317

In table 3 the normality test uses the Kolmogorov Smirnov test with the information being the same as the Liliefors test. Obtained for the experimental class learning outcomes variables (0.317 > 0.05 and the control class (0.165 > 0.05), because the significance level or probability value is above 0.05, it is said that the distribution of the two samples is normal.

Homogeneity Test

Homogeneity testing was carried out on the experimental class and control class learning outcomes variable data using the F (Fisher) test at = 0.05. The homogeneity test results are summarized in the following table:

Table 4. Homogeneity Test

Levene Statistics	df1	df2	Sig.
,580	1	77	,449

In table 4 the homogeneity test uses Fisher's exact test. It was obtained for the variables of mathematics learning outcomes both experimental and control classes (0.449 > 0.05), because the significance level or probability value is above 0.05, it is said that the distribution of the two samples is homogeneous.

This study aims to obtain empirical answers to the application of the Team Teaching Learning Method to the Learning Outcomes of Mathematics Subjects at

SMK Abdi Negara Binjai. The relationship can be explained by using the analysis of the mean difference test with unpaired t test using the SPSS program.

Table 5. Summary of Research Results

	Sig (2-tailed)	t hitung
Hasil Belajar Matematika	0,034	2,155

Based on table 5, it is known that the value of sig 0.034 <0.05 or t count (2.155) > t table (1.9963), it can be concluded that the application of the team teaching method can improve students' mathematics learning outcomes.

Discussion

The results of the analysis show that student learning using the team teaching method can improve mathematics learning outcomes. In line with research conducted by(Palittin, Wolo, and Purwanty 2019)Based on the results of this study, the learning outcomes of SKI subjects before applying the Team Teaching Method were classified as high (good) as many as 6 students (21.43%), classified as moderate as many as 16 students (57.14%) and which is classified as low 6 students (21.43%) and learning outcomes of SKI subjects after applying the Team Teaching Method which is classified as high (good) as many as 8 students (28.57 %), classified as moderate as many as 13 students (46.43%) and 7 students are classified as low (25%). The proposed null hypothesis was rejected because the amount of "t" that the researcher obtained in the calculation (to = 8.768) and the amount of "t" listed in the t Value Table (tt.ts.5% = 2.05 and tt.ts.1% = 2.77) then we can know that to is greater than tt; namely: 2.05 < 8,768 > 2, Based on the trial, it can be said that the new team teaching method has shown real effectiveness; in the sense of the word: reliable as a good method for teaching the field of Islamic cultural history studies at the madrasah ibtidaiyah level.

In line with (Mardianto and Fachruddin 2017) The results showed that: (1) There were eight learning models applied by teachers, and the representative one was the cooperative learning model (model 2) compared to the CTL approach model (model 6) and other models. The learning model accepted by high school students in the teaching and learning process is a realistic mathematics learning model (model 7) compared to the learning model for improving thinking skills (model 4) and other models. (2) There are five learning methods applied by high school teachers and the representative one is the demonstration method (method 2) compared to the simulation method (method 5) and other methods. The representative learning method applied by high school teachers and

accepted by students is the panel discussion and debate method (method 3) compared to the role playing method (method 4) and other methods. (3) The results of modern and conventional learning methods applied by high school teachers and accepted by students can be said to be efficient, effective and quality in their application from 2013 - 2017. This means that teachers in applying modern and conventional learning methods always pay attention to aspects of learning time efficiency, by adjusting the aspect of the effectiveness of the use of learning media to obtain quality learning outcomes, as well as students accepting modern and conventional learning methods by the efficiency of learning time,

In line with (Lestari 2017)Based on the results of the study, it can be proven that the learning method and student learning outcomes are in the medium category, as well as a strong relationship between learning methods and student learning outcomes, thus it can be said that student learning outcomes can be improved by using appropriate learning methods and well by the teacher in the learning process at school.

(Prio baskoro 2015) Based on the results of research, the application of team teaching learning methods can improve learning outcomes of mathematics subjects. The learning method facilitates the process of teaching and learning activities. The success of a learning process can be measured by how many ways are used in teaching. In the learning process, teachers can use various appropriate learning methods and according to student needs, teachers can use the lecture method (Preaching method), experimental method (Experimental method), skills training method (Drill method), discussion method (Discussion method), problem solving method (Problem solving method), design method (project method), the learning method has a strong and moderate influence on improving student learning outcomes,

Conclusion

Based on the research results, it can be concluded that students whose learning activities use the team teaching method can improve the learning outcomes of mathematics subjects or in other words, the learning outcomes of mathematics subjects with the application of the team teaching method are said to be good.

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