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The Effect of Student Team Achievement Division (STAD) Cooperative Learning Model on Social Attitudes and Economic Learning Outcomes

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Abstract

A research gap has been found in Public High School 3 Purwokerto, especially Class XI Social Science, in the form of the use of learning models that still use conventional learning models, which impacts the lack of formation of students' social attitudes and less than optimal learning outcomes. The aims of this research are 1) To determine the differences in social attitudes and learning outcomes of Class XI Social Science students at Public High School 3 Purwokerto who use the Student Team Achievement Division (STAD) learning model and students who use the conventional learning model; 2) to determine the effect of using the STAD learning model on the social attitudes of students at Public High School 3 Purwokerto, as well as 3) to determine the effect of using the STAD learning model on learning outcomes in economics subjects

for students at Public High School 3 Purwokerto. This research is experimental research using quasi-experimental methods. The results of research and data analysis show that 1) there are differences in social attitudes between students who use the STAD learning model and students who use conventional learning methods; 2) there are differences in learning outcomes between students who use the STAD learning model and students who use conventional learning methods; 3) the STAD learning model affects social attitudes; and 4) the STAD learning model affects learning outcomes.

Keywords
learning model; STAD; social attitude; learning outcome

I. Introduction

Helmiati (2019: 4) stated that the paradigm in education is experiencing a shift from the concept of "teaching" to "learning." These two paradigm concepts certainly have differences from each other. Teaching emphasizes transferring knowledge from teachers to students, where teachers play an active and dominating role. Meanwhile, learning is a form of harmonious collaboration between teachers' teaching activities and students' learning activities. Learning can be carried out if students are actively involved in developing their potential. Learning is not passively collecting information but actively creating knowledge (Nuryadin, 2013).

Even though students are present in class, they may not learn and become passive if they are not involved in learning activities (Mulasiwi dan Sumaryati, 2013). Educators must design learning experiences encouraging active student participation, enabling optimal achievement of later student learning outcomes. Implementing a cooperative learning model in the learning process is one effort

educators can make. This model enables students to engage in a collaborative group discussion process that fosters positive social attitudes. Social attitudes, such as responsibility, cooperation, empathy, and tolerance, play a crucial role in the success of the learning process. Positive social interactions make students feel safe, a crucial prerequisite for effective learning (Vygotsky in Santrock, 2011). In the cooperative learning model, students work collaboratively in small groups with a heterogeneous group structure. Several cooperative learning models include the Student Team Achievement Division (STAD), Jigsaw, Investigation Group, and Teams Games Tournaments (Slavin, 2015). The Student Team Achievement Division (STAD) (Slavin, 2015) is one of the simplest and best cooperative learning models for teachers new to implementing this approach.

Marheni et al. (2020) stated that, in implementing the STAD learning model, students are emphasized on learning activities in groups so that students are trained to have high social attitudes because the STAD learning model can condition students in a comfortable learning environment in which learners can exchange opinions, work together in their groups, help each other, and encourage their group members in learning lessons, as well as make mutual contributions to other group members. The main idea of the STAD learning model is to motivate students to support each other and help other students master the skills taught by the teacher (Slavin, 2015).

Based on observations made during MBKM internship activities at Public High School 3 Purwokerto, especially for Class XI Social Science students, students' learning outcomes are not optimal. This learning outcome is supported by data on the results of

the final semester assessment for economics subjects documented by the teacher, which can be seen in Table 1.

Table 1. Final Semester Assessment Results Data for Economics Subject of Class XI Social Science at Public High School 3 Purwokerto.

No	Class	Score Interval		Total	Average
		< 70	> 70		
1	XI Social Science 1	28	8	36	50
2	XI Social Science 2	25	9	34	57
3	XI Social Science 3	27	7	34	55
4	XI Social Science 4	29	7	36	61
5	XI Social Science 5	28	8	36	52
Total		137	39	176	55

Source: Public High School 3 Purwokerto

Based on these data, the results of studying economics for class XI Social Science at Public High School 3 Purwokerto showed that many students are still at the minimum level because they fall below the applicable minimum completeness criteria of 70; specifically, 78% are below this minimum, while 22% meet or exceed it. This result shows a reasonably large gap in student learning outcomes. Meanwhile, the Department of Education and Culture in Trianto (2011) stated that classical completeness can be achieved if the number of students who reach the minimum completeness criteria is ≥ 85% of all students in that class. Criteria and indicators of

learning success are used to determine whether overall students have mastered the material and competencies.

Based on observations that have been made, the use of conventional learning models influences the formation of students' social attitudes. Students tend to be more individualistic and less sensitive toward their friends. Marheni et al. (2020) stated that students in conventional learning do not exhibit positive social attitudes because education is more individualized and does not provide space for social interaction. Students who have above-average cognitive abilities tend to care less about other students who have below-average cognitive abilities. Meanwhile, students with below-average cognitive abilities are reluctant to ask questions and do not care about material they do not understand.

Teachers can overcome this problem by implementing changes to the learning model they use. A learning model is an element of a learning pattern or design that guides the learning process to achieve maximum learning goals. A learning model can be effective if it can make students think critically and actively in the learning process (Asmedy, 2021). Therefore, it is necessary to change the learning process into learning that can activate students, hoping that later it can improve social attitudes and achieve maximum learning outcomes, one of which is by implementing the STAD learning model.

Based on the background above, this study aims to address several key research questions related to the effectiveness of the Student Team Achievement Division (STAD) learning model in im-

proving students' social attitudes and learning outcomes. The research questions include: Is there a difference in social attitudes between students taught using the STAD learning model and those taught using conventional learning methods? Is there a difference in economic learning outcomes between students taught using the STAD learning model and those taught using conventional methods? Does the STAD learning model influence students' social attitudes? Does the STAD learning model impact students' economic learning outcomes?

II. Method

The type of research used in this research is quantitative research using an experimental approach. The method used in this research is quasi-experimental. Experimental research in the world of education is a type of research that aims to determine the effect of an action or treatment on student behavior or can also be carried out to test hypotheses regarding whether or not there is an effect of action when compared with other actions (Payadnya & Jayantika, 2018). The objects in this study consist of dependent variables, namely social attitudes (Y1) and learning outcomes (Y2), which are influenced by the independent variable, namely the use of the STAD-type cooperative learning model (X). The subjects in this study were Class XI IPS students at SMA Negeri 3 Purwokerto in the 2022/2023 academic year. The following is a picture of the research model:

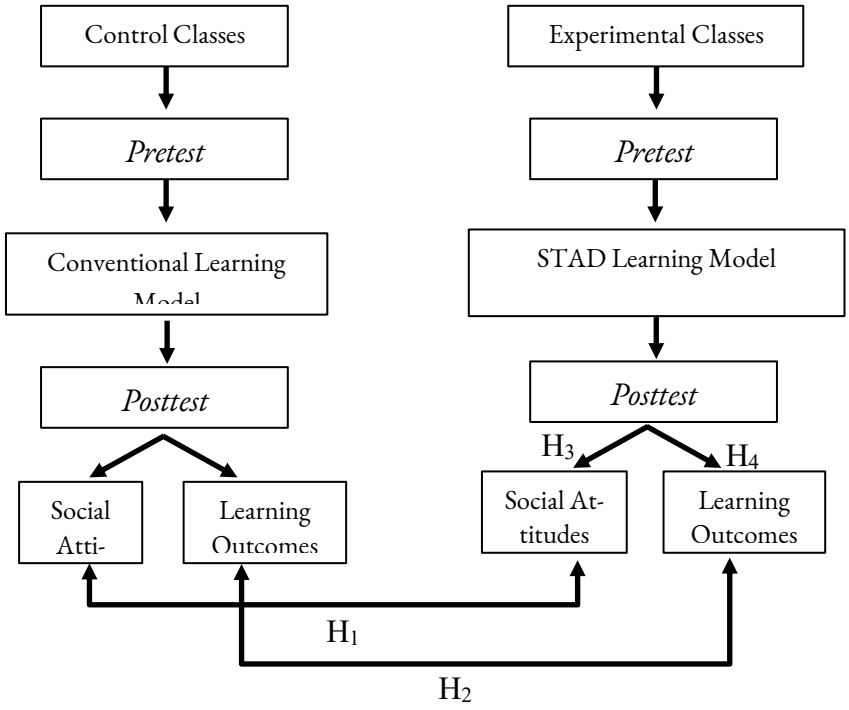

Figure 1. Research Model

This research was conducted at SMA Negeri 3 Purwokerto, located at Jl. Kamandaka Barat No. 3, Karangsalam, Kedungbanteng, Banyumas, Central Java 53152. It was carried out in the even semester of the 2022/2023 academic year. The population in this study was class XI IPS students of SMA Negeri 3 Purwokerto in the 2022/2023 academic year, which consisted of 5 classes and 176 students in total. The samples used in this study were two classes with 72 students, and the sampling technique used was purposive sampling. This study's data collection techniques included interviews, observations, documentation, pretests, posttests, and questionnaires. The study's data analysis techniques included validity tests, reliability tests, tests of question difficulty levels, tests of question

discrimination power, normality tests, homogeneity tests, independent sample t-tests, and simple linear regression.

III. Result and Discussion

Validity Test

Social Attitude

In the social attitude variable instrument, 19 statement items were declared valid because $r_{count} > r_{table}$ where r_{table} was 0.339, so it could be said that the instrument represents indicators of social attitudes, while 7 statement items were declared invalid because $r_{count} < r_{table}$, so they were immediately removed or not used by the researchers, considering that there were still statement items that could represent indicators of social attitudes.

Learning Outcome

In the learning outcome variable instrument, in the pre-test questions, 13 questions were declared valid because $r_{count} > r_{table}$ where r_{table} was 0.339, so it could be said that the researchers could use the instrument as pre-test questions to measure students' learning outcomes, while 17 statement items were declared invalid because $r_{count} < r_{table}$ so they were immediately removed or not used by the researchers as pre-test questions.

Apart from the pre-test questions, a validity test was also carried out on the post-test questions so that 17 questions were declared valid because $r_{count} > r_{table}$ where r_{table} was 0.339, so it could be said that the researchers could use the instrument as post-test

questions to measure students' learning outcomes, while 13 statement items were declared invalid because $r_{count} < r_{table}$ so they were immediately removed or not used by the researchers as post-test questions to measure students' learning outcomes.

Reliability Test

The Cronbach's alpha value for the social attitude questionnaire is greater than the reliability standard, 0.765 > 0.600. Thus, the social attitude questionnaire is reliable and trustworthy and can be used as a data collection tool.

Table 2. Reliability Test Results of the Social Attitude Questionnaire

Variable	Cronbach's Alpha	Reliability Standard	Information
Social Attitude	0.765	0.600	Reliable

Source: Data Processing Results, 2023

The reliability test for the questions measuring learning outcomes was conducted using the Kuder and Richardson-20 method. The KR-20 or ri value for pretest and posttest questions is greater than the r_{table} value of 0.339. It can be concluded that the pretest and posttest questions are reliable and trustworthy and can be used as a data collection tool.

Table 3. Reliability Test Results of the Learning Outcomes Questionnaire

Variable	r_i	r_{tabel}	Information
Pre-test	0.653	0.339	Reliable
Post-test	0.690	0.339	Reliable

Source: Data Processing Results, 2023

Difficulty Level Test

In the pretest questions, an item is considered easy if the p_{count} value is > 0.70, namely 11 questions. Meanwhile, a question item is considered moderate if the p_{count} value is 0.31-0.70, namely eight questions. Meanwhile, the other questions are included in the difficult category where the p_{count} value is 0-0.30, namely 11 questions.

In the posttest questions, there were 15 questions in the easy category where the p_{count} value was > 0.70. Meanwhile, a question item is considered medium if the p_{count} value is 0.31-0.70, namely 13 questions. Meanwhile, the other questions are included in the difficult category where the p_{count} value is 0-0.30, namely two questions.

Discriminating Power Test

In the pretest questions, the discriminating power is excellent if the discriminating power value is 0.70-1.00, namely, two questions. An item is said to have good discriminating power if the discriminating power value is 0.40-0.69, namely eight questions.

An item is said to have sufficient differentiating power if the differentiating power value is 0.20-0.39, namely seven questions. An item is said to have poor discriminating power if the discriminating power value is 0.00-0.19, namely 10 questions. Meanwhile, two questions were not detected in the discrimination test.

In the posttest questions, an item is said to have excellent discriminating power if the discriminating power value is 0.70–1.00, i.e., two questions. An item is said to have good discriminating power if the discriminating power value is 0.40-0.69, namely 10 questions. An item is said to have sufficient differentiating power if the differentiating power value is 0.20-0.39, namely 14 questions. Meanwhile, an item is said to have poor discriminating power if the discriminating power value is 0.00-0.19, namely, four questions.

Classic Assumption Test Results

Normality Test

In this study, the data normality test was conducted using the Kolmogorov-Smirnov test according to specific criteria. The data can be normally distributed if the significance value or p-value is > 0.05. All research variable data in the experimental and control classes have a p-value > 0.05, so it can be concluded that all variables are normally distributed.

Table 4. Results of the Normality Test of Social Attitude and Learning Outcomes

Variable	Class	p-value	Alpha	Result
Social Attitude	Experimental	0.200	0.050	Normal
	Control	0.200	0.050	Normal
Pre-test	Experimental	0.198	0.050	Normal
	Control	0.066	0.050	Normal
Post-test	Experimental	0.069	0.050	Normal
	Control	0.072	0.050	Normal

Source: Data Processing Results, 2023

Homogeneity Test

The homogeneity test in this research used the homogeneity of variance test. The test criteria were that the data can be considered homogeneous if the p-value is based on a mean > 0.05. The p-value for all research variables was based on a mean > 0.05, indicating their homogeneity.

Table 5. Results of the Homogeneity Test of Social Attitude and Learning Outcomes

Variable	p-value	Alpha	Result
Social Attitude	0.569	0.050	Homogeneous
Pre-test	0.514	0.050	Homogeneous
Post-test	0.673	0.050	Homogeneous

Source: Data Processing Results, 2023

Independent Sample T-test

The t_{count} value is 5.098, and the t_{table} value for a degree of freedom of 70 with a significance level of 5% is 1.671. So, the t_{count} is 5.098 > 1.671 with a significance value of 0.000 < 0.05. The first hypothesis test in this study used the t-test with the Sig. value category < 0.05. Based on Table 6, the results of the independent sample t-test give a Sig. value of 0.000 < 0.05. So, H_{a1} is accepted, and H_{o1} is rejected. This result indicates differences in social attitudes between students who use the STAD learning model and those who use the conventional learning model.

Table 6. Independent T-test Results of Social Attitude

Variable	t_{count}	t_{table}	df	Sig.
Social Attitude	5.098	1.671	70	0.000

Source: Data Processing Results, 2023

The t_{count} value is 3.943, and the t_{table} value for a degree of freedom of 70 with a significance level of 5% is 1.671. So, the t_{count} is 3.943 > 1.671 with a significance value of 0.000 < 0.05. Apart from that, it can be seen in the average post-test score between the experimental and control classes, which shows that the experimental class score is higher than the control class.

The second hypothesis test in this study used the t-test with the Sig. value category < 0.05. Based on Table 7, the results of the independent sample t-test give a Sig. value of 0.000 < 0.05. So, H_{a2} is accepted, and H_{o2} is rejected. This result indicates differences in learning outcomes between students who use the STAD learning model and those who use the conventional learning model.

Table 7. Independent T-test Results of Learning Outcome

Variable	Class	t_{count}	t_{table}	df	Sig.
Learning Outcome	Experimental Class	3.943	1.671	70	0.000
Variable	Class		n	Mean	
Learning Outcome	Experimental Class Post-test		36	79	
	Control Class Post-test		36	64	

Source: Data Processing Results, 2023

Simple Linear Regression Test

Table 8. Simple Linear Regression Test Results for Social Attitude

Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	60.306	0.786		76.730	0.000
STAD Learning Model	5.667	1.111	0.520	5.098	0.007

Source: Data Processing Results, 2023

The simple linear regression equation obtained for the social attitude variable is as follows:

$Y_i = 60.306 + 5.667X_i$

This simple linear regression equation can explain that the constant figure for the unstandardized coefficient is 60.306, indicating that if the STAD learning model (X) is not applied, then the consistency value of social attitude (Y) is 60.306. Then, the regression coefficient figure, whose value is 5.667, shows that every time 1% of the STAD learning model (X) is implemented, social attitude (Y) will increase by 5.667. Because the regression coefficient's

value is positive, it shows that the STAD learning model (X) has a positive effect on social attitudes (Y).

The table shows that the significance value of 0.00 is less than the probability of 0.05, so H_{o3} is rejected and H_{a3} is accepted. This means that the STAD learning model (X) affects social attitude (Y).

Then, based on the obtained t_{count} value of 5.098, the test criteria used, namely H_{a3}, are accepted if $t_{count} > t_{table}$, as well as the t_{table} value is searched using the degree of freedom ((n-k) = 72-2 = 70), and the t_{table} value is 1.997. The calculations indicate that the value of t_{count} (5.098) is greater than t_{table} (1.997). This result shows that H_{o3} is rejected and H_{a3} is accepted, indicating that there is an effect of the STAD learning model (X) on learning outcomes (Y).

Table 9. Simple Linear Regression Test Results for Learning Outcome

Variable	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	6.417	0.259		24.774	0.000
STAD Learning Model	1.444	0.366	0.426	3.943	0.000

Source: Data Processing Results, 2023

The simple linear regression equation for the learning outcome variable is as follows:

$$Y_{ii} = 6.417 + 1.444X_i$$

This simple linear regression equation can explain that the constant figure of the unstandardized coefficient is 6.417, indicating that if the STAD learning model (X) is not applied, then the consistency value of the learning outcome (Y) is 6.417. Then, the regression coefficient figure, whose value is 1.444, shows that every time 1% of the STAD learning model (X) is implemented, learning outcomes (Y) will increase by 1.444. Because the regression coefficient's value is positive, it can be seen that the STAD learning model (X) has a positive effect on the learning outcome (Y).

The table shows that the significance value of 0.00 is less than the probability of 0.05, so H_{o4} is rejected and H_{a4} is accepted. This indicates that the STAD learning model (X) affects the learning outcome (Y).

Then, based on the obtained t_{count} value of 3.943, the test criteria used, namely H_{a3}, is accepted if $t_{count} > t_{table}$, as well as the t_{table} value, is searched using the degree of freedom ((n-k) = 72-2 = 70), and the t_{table} value is 1.997. The results of these calculations show that the value of t_{count} (3.943) > t_{table} (1.997); this shows that H_{o4} is rejected and H_{a4} is accepted. This result means that there is an effect of the STAD learning model (X) on learning outcomes (Y).

Discussion

Differences in Social Attitudes between Students Who Use the STAD Learning Model and Students Who Use the Conventional Learning Model

Research shows that Class XI Social Science students at Public High School 3 Purwokerto who use the STAD learning model have different social attitudes compared to those who use the conventional learning model. Students who use the STAD learning model get greater social attitude scores. This result indicates that the social attitudes in the experimental class are better compared to the control class.

The results of this research align with research conducted by Syadzali (2019), which states that there are significant differences in classes that use the STAD model combined with NHT regarding social attitudes compared to classes that use conventional learning. On average, students in classes that use the STAD model combined with NHT have better social attitudes than those who take conventional learning. In their research, Nengah et al. (2013) stated that there were differences in the social attitudes of students who took part in learning using the STAD cooperative model and students who took part in learning with the conventional model. The social attitudes of students with the STAD cooperative learning model are better than conventional learning models.

Differences in Learning Outcomes between Students Who Use the STAD Learning Model and Students Who Use the Conventional Learning Model

Research that has been conducted shows that there are differences in learning outcomes between students who use the STAD learning model and students who use conventional learning methods in Class XI Social Science students at Public High School 3 Purwokerto. Based on the learning outcomes obtained from the post-test scores, the experimental class, namely the class that was given treatment in the form of the STAD learning model, obtained an average post-test score of 79, where the number of students who had reached the minimum completeness criteria limit was 28 students, with the highest score being 100. Meanwhile, the control class, which only applied the conventional learning model without treatment, obtained an average posttest score of 64, with only 18 students reaching the minimum completeness criteria limit and the highest score being 100. So, the learning outcomes in the experimental class were better when compared to the control class.

The results of this research align with research conducted by Sudana and Wesnawa (2018), who stated that, with the implementation of the STAD cooperative learning model, students' science learning outcomes increased. Changing the learning model (such as from conventional to STAD) positively impacts learning outcomes and cognitive attitudes (Risnawati et al., 2019). Increased learning outcomes occurred due to the active participation of students in the class. Andrian et al. (2020), in their research, stated that the research results showed that there were differences in learning outcomes using STAD cooperative learning and conventional learning. Syadzali (2019) stated that there were significant differences in the learning outcomes of classes using

the STAD model combined with NHT compared to conventional learning classes. The average learning outcomes of students who studied using the STAD model combined with NHT are higher than those of conventional learning.

STAD implementation allows students to understand each other's material in groups rather than just listening to the teacher's lecture. When teachers apply conventional learning models, students only play a passive role in learning, so they do not explore the material being studied and are less active in asking questions. Meanwhile, when the STAD learning model is applied, students play an active role and help each other understand the learning material. Students must understand the material to take a post-test later, and the scores will then be processed at the team recognition stage. So, one group and another competes to become the best team in implementing the STAD learning model.

Effect of the STAD Learning Model on Social Attitudes

Research shows that the STAD learning model positively affects students' social attitudes in economics subjects in Class XI Social Science at Public High School 3 Purwokerto. So, the better the implementation of the STAD learning model, the better the increase in social attitudes achieved by students.

The results of this research are in line with research conducted by Marheni et al. (2020), which states that the STAD model affects students' social attitudes. This can be seen when the learning process takes place by applying the STAD model, making students more enthusiastic about learning and enabling them to work together with their groups.

The application of the STAD learning model in the learning process requires students to work together in small groups that have been formed. We ask students to collaborate on group activity sheets, solving learning problems together to enhance their social attitudes and learning outcomes. This activity aligns with research by Pertiwi et al. (2019), which states that, in group discussions, students work together to solve problems or assignments given by the teacher. After the students have finished discussing, they present the results of their discussion in front of the class, and other students appreciate the input given by the teacher and other friends. This group activity stage will help students improve their social attitudes due to interactions with each other in small groups formed heterogeneously. Tran and Tran (2013) stated in their study that implementing cooperative methods such as STAD significantly improves students' academic achievement and positive attitudes compared to conventional teaching methods.

Effect of the STAD Learning Model on Learning Outcomes

Research shows that the STAD cooperative learning model has a positive effect on student learning outcomes in economics subjects in Class XI Social Science at Public High School 3 Purwokerto. Therefore, a better implementation of the STAD learning model leads to a greater increase in students' learning outcomes.

This result aligns with research conducted by Kusumawardani et al. (2018), which states that the STAD cooperative model assisted by poster media can effectively improve learning outcomes. In their research, Marheni et al. (2020) also stated that the STAD model influences students' science learning

outcomes. The effect of the STAD model on science learning outcomes can also be seen during the learning process, in which the students are very enthusiastic and eager to participate in learning. Students must be able to interact and work together to improve their group's achievements so that each student is required to be confident and active, as well as help each other master learning material and solve problems.

IV. Conclusion

The results of research and data analysis show that (1) there are differences in social attitudes between students who use the STAD learning model and students who use conventional learning methods; (2) there are differences in learning outcomes between students who use the STAD learning model and students who use conventional learning methods; (3) the STAD learning model affects social attitudes; as well as (4) the STAD learning model affects learning outcomes. Based on the results of the research that has been carried out, the researchers can provide suggestions, namely that teachers can implement learning models that can stimulate student participation so that it is hoped that they can improve social attitudes and students' learning outcomes with the collaboration carried out.

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