



Effectiveness of STAD (Student Team Achievement Division) Cooperative Learning Method to Improve Students' Cognitive Learning Outcomes

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Abstract

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Teacher centered learning often makes the learning atmosphere less varied resulting in low participation in the learning process, especially in an environment that has limited use of digital media at Pondok Muhammadiyah Boarding School, so that students' Arabic cognitive learning outcomes are low. The purpose of this study was to determine the effectiveness of the STAD type (Students Team Achievement Devision) cooperative learning method on Arabic cognitive learning outcomes of grade XI students at MBS Muhammadiyah Jetis Ponorogo boarding school. The method used in this research is quantitative with a quasi-experiment approach. The sample in this study consisted of 26 students of class XI. Data collection was carried out through observation and test techniques including pre-test and post-test, then the data was analyzed using descriptive statistical tests, normality tests, and T tests. The findings demonstrated that the experimental class learning outcomes' Sig value had a significance value > 0.05 in other words, the data showed a normal distribution, this indicates that STAD cooperative learning can improve students' cognitive learning outcomes compared to conventional learning methods.

Abstrak

Kata Kunci: *Pembelajaran yang berpusat pada guru seringkali menghasilkan suasana pembelajaran yang kurang bervariasi, yang mengakibatkan partisipasi siswa pada saat proses pembelajaran rendah, terutama dalam lingkungan Metode Kooperatif yang memiliki keterbatasan penggunaan media digital di Pondok STAD, Hasil Belajar, Bahasa Arab* *Muhammadiyah Boarding School, sehingga hasil belajar kognitif bahasa Arab siswa rendah. Tujuan dari penelitian ini untuk mengetahui efektivitas metode pembelajaran kooperatif tipe (Students Team Achievement Devision) STAD terhadap hasil belajar kognitif bahasa Arab siswa kelas XI di sekolah boarding MBS Muhammadiyah Jetis Ponorogo. Adapun metode yang digunakan dalam penelitian ini kuantitatif dengan pendekatan quasi-ekperimen. Sampel pada penelitian ini terdiri dari 26 siswa kelas XI. Pengumpulan data dilakukan melalui tehnik observasi dan test meliputi pre-test dan post-testSelanjutnya dilakukan uji statistik deskriptif, uji normalitas, dan uji T untuk menganalisis data secara rinci. Hasil penelitian menunjukkan bahwa nilai Sig hasil belajar kelas eksperimen dengan nilai signifikansi > 0,05 dengan kata lain, data menunjukkan distribusi normal, hal ini menunjukkan bahwa pembelajaran kooperatif STAD dapat meningkatkan hasil belajar kognitif siswa dibandingkan dengan metode pembelajaran konvensional.*

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Introduction

Education is a basic need that is very important and must be fulfilled throughout life, because without education, it can affect a person in obtaining broad knowledge. (Putra, 2017). The role of education is very important in the world of education, because education can build leadership, one's skills, and individual potential (Rahmat, 2010). Teaching and learning activities must be modified in order to increase the quality of learning, one of the efforts that can be made is innovation and selection of relevant and effective learning methods to improve the quality of education, because student activeness not only increases students' understanding of the subject matter, but also helps develop creativity and collaborativeness (Djonomiarjo, 2020).

Achieving education goals is not easy because there are many obstacles that must be faced (Angga et al., 2022). Various important indicators such as teacher

quality, student characteristics, and learning methods, these three indicators cannot be separated from one another, because they support each other in creating an effective learning environment. In this case, education that is planned and implemented aims to ensure that students are in an active and dynamic learning atmosphere so that they can reach their full potential. Education can be interpreted as a conscious effort in creating a learning process that allows students to develop actively (Setiyaningsih, 2022).

Muhammadiyah Boarding School (MBS) is an Islamic-based educational institution that integrates the curriculum of the Ministry of Religious Affairs. (Kemenag) with special rules and policies designed according to the vision of the pesantren. Although this boarding school is under the auspices of the government, MBS still has its own curriculum that supports the characteristics of pesantren education. MBS has strict rules for students, like most boarding schools in Indonesia, including the prohibition of bringing electronic devices such as mobile phones, but some rules allow laptops with the stipulation that they must be entrusted to the caregiver and only used for specific purposes, such as editing or participating in information technology competitions. In line with the Boarding's educational goals, this policy seeks to establish a positive learning atmosphere so that students can focus more on their studies and personal growth.

Arabic language is one of the important aspects in pesantren, including at Muhammadiyah Boarding School (MBS). MBS boarding has a policy that prohibits students from bringing electronic devices, especially cell phones. This policy aims to maintain discipline and focus in learning, but this limitation is also a challenge in creating innovative and interactive learning, besides that teacher-centered learning also makes learning less varied so that students are less involved in the learning process which can cause low student understanding so that cognitive learning outcomes are low.

These problems challenge researchers to be able to present and create a creative learning atmosphere and can change learning to be more interesting and

fun, so as to eliminate student boredom and stimulate student interest to be active in learning activities. Thus, the researcher tried to apply the STAD type cooperative learning method. The STAD (Division of Student Teams Achievement) cooperative learning method emphasizes cooperation in small groups to improve students' understanding. This method involves each group member to help each other solve problems and learn the material taught. Students are encouraged to speak more actively, share what they know, and support each other to achieve learning goals through group interaction. (Wahyudi, 2021), besides this learning method is very simple and easy to apply to students (Bustami et al., 2024).

The STAD (Student Teams Achievement Division) cooperative learning method is an alternative that can be used by researchers to improve student understanding so that students' cognitive learning outcomes increase (Paryanto, 2020). In addition, researchers also use image media in supporting the learning process so that students are more interested and active. Fun and interactive teaching can improve student learning outcomes so that the objectives of this study are achieved optimally.

There are several previous studies that discuss the effectiveness of the STAD cooperative method. Based on research (Asmedy, 2021) explains that when compared to traditional approaches, the STAD type cooperative learning method has a considerable impact on student learning results. This is evidenced by the t-test results obtained by the t value of 17.339 and the t table value of 1.670 with a significance level of 0.05, data indicates that learning outcomes are impacted by the STAD kind of learning approach, supporting the hypothesis.

In addition to the significant effect of learning outcomes, there are other studies that explain this, according to (Adi, 2024) that in application for students to assist one another in comprehending the course, the STAD technique is applied by placing them in groups according to their level of Arabic language ability. The degree of student absorption, which was initially only 5.55% of 18 students with an average pretest score of 56.6, shows an increase in addition to

the fact that this strategy can improve learning results. This rose following the implementation of the student team accomplishment division method's cooperative learning approach, with 18 students achieving 100% absorption and an average score of 97.2.

In addition to encouraging a rise in residual activity during the classroom learning process, prior research has shown that the STAD cooperative technique is highly beneficial in enhancing student learning outcomes. Therefore, the purpose of this study is to ascertain whether using a cooperative learning approach of the STAD type will improve the Arabic language cognitive learning results of grade XI students at Muhammadiyah Muhammadiyah Boarding School Jetis Ponorogo.

Method

This type of research is a quantitative descriptive method with a quasi-experimental design. (Sugiyono, 2008) said that quantitative research is a type of research that produces findings through quantitative methods such as statistics. Students in the 11th eleventh grade at Pondok Muhammadiyah Boarding School Jetis Ponorogo served as the study's subjects, consisting of one class with 26 students. In this study, pretest and posttest were conducted to measure students' Arabic language skills before and after using STAD cooperative learning method. After the data was collected, data analysis was carried out using SPSS version 26 which included several tests including descriptive statistical tests, data normality tests, and independent sample T-test tests (Hermawan, 2019). All analyses were conducted systematically to produce conclusions based on empirical data. This purpose aims to ascertain if student learning results prior to and following the implementation of the STAD cooperative learning technique change significantly.

Result and Discussion

Result

Data analysis of the pre-test administered before treatment and the post-test administered after STAD cooperative learning was implemented in the experimental class was used to provide a descriptive presentation of the research findings. Then the collected data were processed using the SPSS version 26 program, which facilitated statistical and descriptive analysis. Descriptive analysis was conducted to describe the research data, including the average score, distribution of student scores, and conclusions which were then presented in the discussion. The following are the steps used to analyze the research data:

1. Descriptive analysis

Descriptive analysis is a type of statistic used to analyze data by describing or explaining the data that has been collected without making changes to it (Sugiyono, 2008). At this stage, A table of descriptive statistics displays the outcomes of the data processing. This table contains the mean, maximum and minimum values, and standard deviation to see the data distribution. The purpose of this analysis is to provide an initial assessment of the condition of student learning outcomes prior to and following the implementation of the STAD cooperative learning type. The following table displays the findings of the descriptive statistical data processing that served as the foundation for this study's analysis:

	N	Minimu m	Maximu m	Mean	Std. Deviation
HasilBelajar	52	40	100	72,98	14,761
VAR00001	52	1,00	2,00	1,5000	,50488
Valid N (listwise)	52				

Based on the results of descriptive statistical tests conducted on 26 respondents, the following description of the distribution of the data obtained can be provided:

- a. The post-test results in the experimental class showed that the lowest score obtained by students was 40, while the highest score reached 100, with an overall average of 72.98. The standard deviation of student score data is 14.761.
- b. In the control class, the lowest post-test score was recorded at 1.00, while the highest score reached 2.00. The standard deviation of student score data in this class is 0.50488.

2. Data normality test

From the understanding that has been described above, the next step is to do a normality test to measure the data that has been obtained can be said to be normal or not. The SPSS software was used to perform this normalcy test. The following are the requirements for data normalcy:

- a. Data will be normally distributed if the sig value < 0.05
- b. While the data is not normally distributed if the sig value > 0.05

Normality is done to determine whether the data obtained by researchers comes from a normally distributed population or not. The data normality test uses the Shapiro Wilk method as follows:

Tests of Normality

	VAR0000	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
HasilBelaja	1	.142	28	.153	.925	28	.045
r	2	.161	26	.080	.951	26	.249

a. Lilliefors Significance Correction

The learning outcomes' significance value following the implementation of the STAD cooperative learning approach is $sig > 0.05$, as shown in the table, demonstrating the regularly distributed normally of the data. Using SPSS version 26, the Shapiro-Wilk method was used to perform the normalcy test, which was used because the number of respondents was limited to one class and less than 50 students. After the data was confirmed to be normally distributed, the next step was to carry out the t-test.

3. Dependent sample T-test

According to Sugiono (2016) one of the statistical analysis methods is the t-test, which is used to determine whether there is a significant difference between comparing two groups, or to ascertain how one or more independent variables affect the reseach dependent variable. The comparisons used in the t test are as follows:

- a. Normal significance value if the t value < 0.05 , then the H_0 hypothesis is rejected and not normally distributed.
- b. Normal significance value if the t value > 0.05 , then the H_0 hypothesis is accepted and the data is normally distributed.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
HasilBelajar	Equal variances assumed	19.015	.000	-5.750	52	.000	-18.049	3.139	-24.349	-11.750
	Equal variances not assumed			-5.877	41.008	.000	-18.049	3.071	-24.251	-11.847

According to Table 2's paired t-test findings using SPSS version 26, the significance value is 0.00, which is less than 0.05. Consequently, the scores on the pre-test and post-test differ significantly, with H_0 being rejected and H_a being accepted. Based on this outcome, it can be said that utilizing a cooperative learning approach of the STAD type makes a big difference when compared to learning without it.

Discussion

This research was conducted at Muhammadiyah Boarding School (MBS) Jetis Ponorogo. This research aims to ascertain how well students learn Arabic after utilizing the STAD cooperative learning strategy. All of the pupils in class XI served as the sample for this research, which consisted of one class with 26 students. This class was chosen due to the limited number of classes available at the school. This study observed the changes in students' Arabic language ability after using the STAD cooperative learning approach.

Initially, before implementing the STAD cooperative learning approach, researchers administered a pre-test to students to determine their Arabic language learning skills. This test's objective is to ascertain students' foundational skills before the implementation of the learning technique so that it can be utilized as a benchmark following the method's use (Khalifeh et al., 2022). To ascertain the degree of students' comprehension of the subject matter, a pre-test was also administered. This phase was done to evaluate the students' learning outcomes before using the STAD cooperative learning approach (Anisensia et al., 2020).

The majority of pupils had not met the minimal compliance requirement (KKM), which is the value applied above 70, according to the findings of the pre-test administered to the experimental group class. According to the study of the pre-test data, pupils' average score was 0.131, indicating that their learning outcomes were still well below the expected level. The figure shows that students in the experimental group at that time had not understood the Arabic material taught well and that there was still much that needed to be improved. According to the KKM norm, it is anticipated that using the STAD cooperative learning approach will enhance students' Arabic language competency.

To improve students' learning outcomes in Arabic lessons, researchers used a cooperative learning approach of the STAD type. This method uses learning in small groups, where students collaborate in groups of four or five to accomplish learning goals. Through cooperative learning, students are encouraged to take an active role in the educational process, assist one another, and

share knowledge in order to increase their comprehension. According to (Herma, 2022), Because they feel more accountable for the group's performance, Students may be inspired to engage more fully in the educational process through cooperative learning. It is expected that students not only gain personal knowledge but also gain social and cooperation skills in learning through this approach.

As revealed by (Wulandari, 2022), STAD cooperative learning is considered a simple and easy-to-use method, so it is very suitable for use in Arabic language learning at MBS Cottage. Another advantage of this method is that it is in accordance with the rules in the MBS Pondok environment, which prohibits learners from bringing electronic devices in the classroom. The STAD method gives students the opportunity to concentrate on direct interaction with their group mates without being distracted by the use of electronic devices. In addition, the aspects of cooperation and discussion in groups, which are the basis of the STAD cooperative method, are reinforced. Since this approach relies on group activities that foster comprehension of the subject matter rather than technology, it is anticipated that students' Arabic learning outcomes will improve.

The application of cooperative learning methods in the experimental class at MBS Jetis was carried out in six steps designed to ensure the learning process runs effectively, The steps are as follows. Step one 1) provide students with learning objectives to understand what they will learn and the goals to be achieved in each learning session. 2) Next, the teacher presents the material in a structured and clear manner to the students (Noor et al., 2023). 3) After being split up into groups of four to five, the students are expected to collaborate and discuss the assigned subject. 4) Next, at this stage, direct and supervise group discussions so that each group member can actively participate in the discussion and contribute to the understanding of the material. 5) After the group activities are completed, an evaluation is conducted to find out how well the students understand the material and achieve their goals. According to (Dewi, 2022), these

steps are interrelated and support the achievement of learning objectives in a more cooperative way. Therefore, it is expected that students' learning outcomes will improve significantly.

After the STAD method is implemented, the next step is to evaluate by providing a post-test. Post-tests are conducted to determine students' cognitive learning outcomes, by comparing the pre-test and post-test scores, researchers can determine how much influence the ability of students' Arabic language learning outcomes has after the STAD cooperative learning method is implemented. As explained by (Puspitawati, 2022), this post-test functions as a tool to assess the effectiveness of the approach used in learning in Islamic boarding schools, with a focus on the results achieved by students after learning is complete. In order to guarantee that the STAD cooperative learning approach is applied successfully and in line with the requirements of students in the Islamic boarding school setting, the researchers' contribution in this study is crucial. As a facilitator, researchers not only direct the learning process, but also create a conducive learning environment for students to work together and support each other in understanding Arabic language material.

The results of the post-test showed a significant increase after the treatment, the STAD cooperative method increased the average score of the learners by 0.153, this shows that their understanding and Arabic language skills improved after using this method. The results of this study are also in line with previous research conducted by (Jundi et al., 2023), that the STAD method not only helps students understand Arabic language material but also helps students work together better. Students become more aware of the importance of working together to achieve common academic goals. However, to improve this cooperation, time and consistency are needed. The results of the study indicate that STAD cooperative learning can be an effective approach to improving student interaction and cooperation. In addition, these findings offer suggestions to teachers on how to use this method as best as possible in the classroom learning process. In addition, research conducted by (Ummah, 2022) shows that

the cooperative learning method type (TGT) has proven effective in improving students' Arabic language skills in class VIII MT Ma'arif. The results of the T-test, which showed a value of 2,867, which is higher than the 5% significant value of 2,042, indicate that H_a is accepted and H_o is rejected. Thus, there is a significant difference between classes that use the TGT method and classes that do not.

These results were shown by the average score of learners in the post-test which successfully reached the KKM. As a result, the application of the STAD cooperative learning strategy significantly improved the comprehension and learning outcomes of MBS Jetis Ponorogo students in Arabic language classes.

Conclusion

The results findings support the notion that using a cooperative learning approach of the STAD kind has a big impact. This conclusion is supported by the experimental class's comparison of pre-test and post-test scores, where the t-test results indicate a significant value of 0.00, or less than 0.05. Thus, H_o is rejected and H_a is accepted, Therefore, it has been demonstrated that the STAD cooperative learning approach improves student learning results. However, this study has limitations in the limited number of respondents, so it does not allow comparison with the control class. Therefore, it is recommended for future research to involve two classes to compare the effectiveness of this method between experimental and control classes.

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