



## Student Team Achievement Division (STAD) Cooperative Type Model Supported by Quizizz on Learning Outcomes

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### ARTICLE INFO

#### Article history:

Received: 11-10-2022

Revised: 30-10-2022

Accepted: 25-11-2022

#### Kata kunci:

Kooperatif;

STAD;

Quizizz;

Hasil belajar

#### Keywords:

Cooperative;

STAD;

Quizizz;

Learning outcomes

### ABSTRAK

Penerapan metode diskusi kelompok pada pembelajaran ekonomi peminatan kelas X IPS masih kurang maksimal dalam memengaruhi peningkatan hasil belajar siswa secara merata. Penelitian ini bertujuan untuk mengetahui pengaruh implementasi model pembelajaran kooperatif Student Team Achievement Division (STAD) berbantuan Quizizz terhadap hasil belajar kognitif dan psikomotorik. Quasi Experimental Design dengan desain Nonequivalent Control Group digunakan sebagai metode penelitian ini. Sampel yang dipakai yakni siswa kelas X IPS 2 dan X IPS 3 sebanyak 68 siswa. Hasil penelitian membuktikan bahwa perolehan rata-rata hasil belajar kelas X IPS 3 sebesar 79,14. Hasil ini lebih tinggi dari hasil kelas X IPS 2, yang menjadi kelas kontrol rata-ratanya, yaitu 74,52. Hasil pengujian N-gain dari rerata hasil belajar kelas kontrol tergolong kriteria rendah, sedangkan nilai hasil belajar kelas eksperimen termasuk dalam kriteria sedang. Hal ini membuktikan bahwa implementasi pembelajaran model kooperatif tipe STAD dikolaborasikan dengan media Quizizz berpengaruh dalam meningkatkan hasil belajar siswa.

### ABSTRACT

The application of the group discussion method in economics learning with specialization in class X IPS was still not optimal to influence the increase of student learning outcomes evenly. This study aims to determine the effect of the cooperative learning model on the Student Team Achievement Division (STAD) collaboration by Quizizz in the cognitive and psychomotor learning outcomes. A Quasi-Experimental Design with a Nonequivalent Control Group design was used as the research method. The total samples were 68 students from classes X IPS 2 and X IPS 3. The result shows that the average acquisition of class X IPS 3 learning outcome is 79.14. This result is higher than that of class X IPS 2 as the control class, which has 74.52. In the N-gain, the average value of the control class learning outcomes is classified as the low criterion, while the experimental class learning outcomes belong to the medium criterion. This indicates that the implementation of the STAD-type cooperative learning model assisted by Quizizz media has proven to be influential in improving student learning outcomes.



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## INTRODUCTION

Group discussion is a method that helps to improve the understanding of the material and also affects the student learning outcomes (Salihchah, 2021). According to Putriyanti & Fensi (2017), the group discussion method is effective enough to improve student learning outcomes. Based on the observation on September 20, 2021, for three meetings, the researcher found that a group discussion method on economic learning in class X IPS does not really have a good impact on student activity and learning outcomes. The fact is many students still do not understand the material and got their marks under the minimum criteria set, 80. A similar problem was experienced by Gambari (2017) where the student's performance is quite low and the learning strategies are poor. Unstructured group discussion learning and the absence of restrictions seem to have a negative impact on learning achievement (Stenlund et al., 2017). Another problem is that the learning media used needs improvement and variety, which triggers the students to participate more actively during the learning process. An alternative for learning to trigger the students' interest is innovative media in the student learning process (Puspitarini & Hanif, 2019). This problem can be improved by designing student-centered learning (SCL) with media which are suitable for the class conditions. With student-centered learning, students get the opportunity to assemble their knowledge so that the understanding obtained is deeper, so they are able to improve the quality of their education (Kodir, 2018). This learning has a role to encourage students to be more actively involved throughout the studying process, and the teacher's role is only to manage to learn. According to Dewi et al. (2020), when students are active and enterprising, it will have an impact on student achievement. One of the considerations in economic learning to achieve the planned learning targets is the use of appropriate learning models. Therefore, the teacher's role is quite vital in choosing effective models and strategies for learning that are suitable for students' conditions (Elpisah et al., 2019).

Based on the problem of low and uneven learning outcomes caused by the unequal composition of students in each group, the researchers decided to use the STAD cooperative learning model that was deemed suitable and able to influence student learning outcomes evenly in economic learning activities with specialization in class X IPS. Not only as the learning model, but STAD also can determine the learning outcomes (Schulze & Bosman, 2018). According to Isjoni (2012), the STAD model is a model that is widely used to create a student-oriented learning process to provide solutions to several problems including student activity, students who are not able to collaborate with other students, the individual nature of students, and uneven composition of students in each group. In general, cooperative learning has a beneficial effect on students' academic characteristics, personality, and social skills (Karacop, 2017). Cooperative learning also trains students who are more experts to explain and accurately differentiate college students who're much less in a position of their businesses without feeling disadvantaged (Munte, 2019). It is hoped that the application of this learning model will become a learning experience that can produce behavioral changes in students (Lane et al., 2021). STAD is proven to be able to have an influence on student achievement with the support of several learning media (Damopolii & Rahman, 2019). This has been proven by Kusumawardani et al. (2018) in their research. It shows that using the STAD kind of cooperative gaining knowledge of models with poster media is very effective on learning outcomes. However, sometimes students are not very interested and are very active only with the application of the STAD model. It is necessary to have interesting innovation and development.

STAD is a model developed by Slavin of which orientation is on student activities and correlations to stimulate each other and assist in understanding a learning material in order to achieve good achievement (Isjoni, 2012). According to Slavin, learning with the STAD cooperative model is carried out in five stages including 1) material presentation, 2) team activities, 3) individual quizzes, 4) recapitulation of individual development values and 5) giving team recognition. With STAD, students can easily share information and improve their brain skills to work optimally (Kim, 2018). The application of the STAD learning model will be more interesting and maximal when collaborates with the use of suitable media. According to Kustandi &

Darmawan (2020), learning media is a tool to help improve learning activities and achieve good learning targets by perfecting the delivery of messages in learning. Media that is suitable for collaboration with the STAD cooperative learning model is Information Technology (IT)-based learning media.

IT-based learning media used in this research is Quizizz. Quizizz is an information technology-based learning tool that can be used both as a narrative and flexible tool in delivering material and as a learning assessment tool that is fun and makes students interested (Salsabila et al., 2020). Quizizz can be accessed easily through students' cell phones or PCs so it can affect students' attention and learning outcomes in learning. Quizizz is a complete educational game-based media for holding any tests to measure student understanding with its various uniqueness and advantages (Citra, 2020). Quizizz will make the learning process get easier for teachers, especially at the individual quiz stages and material presentation. The quiz display randomization feature will support the quiz stage because the order in which each student's quiz display is different makes it less likely that students work together in the quiz process. In order to achieve ease of use of technology, Elnovreny (2021) argues that future teachers must be able to adapt teaching materials to changing times for the sake of competent millennial generations.

The contribution of this research with STAD cooperative learning assisted by Quizizz is able to influence its relation to student learning outcomes and provide some innovative learning atmosphere for students, especially in the matter of business entities in the Indonesian economy. Based on the description above, the reason for this study is to decide the impact of enforcing the STAD cooperative mastering version assisted through Quizizz on cognitive and psychomotor mastering outcomes.

## METHOD

This research used the experimental method with Quasi-Experimental Design. This design is used because there are external variables that cannot be controlled by the researcher during the research (Sugiyono, 2019). The experimental form applied was the Nonequivalent Control Group Design. The population of the research was the students of class X IPS consisting three classes of totaling 103 students. The sample of this research was the students of class X IPS 2 as the control class and X IPS 3 as the experimental class with a total of 68 students determined by purposive sampling.

This research started from April to May 2022. The data collection was obtained through observation, tests (pretest and posttest), and documentation. The measurement of the student learning outcomes using tests and observations can be seen in Table 1 which is a test instrument that uses 25 questions (multiple choice and limited description) applied through Quizizz and google forms. Meanwhile, to determine the condition of students in the learning process, an observation instrument was used as shown in Table 2 with 5 indicators that were assessed during the discussion process.

**Table 1. Test instruments protocol**

No	Indicator	Question Type	Number of Questions
1	Describing BUMN and BUMD	Multiple choice	11
2	Describing BUMS	Multiple choice	9
3	Describing BUMN and BUMD	Limited description	3
4	Describing BUMS	Limited description	2

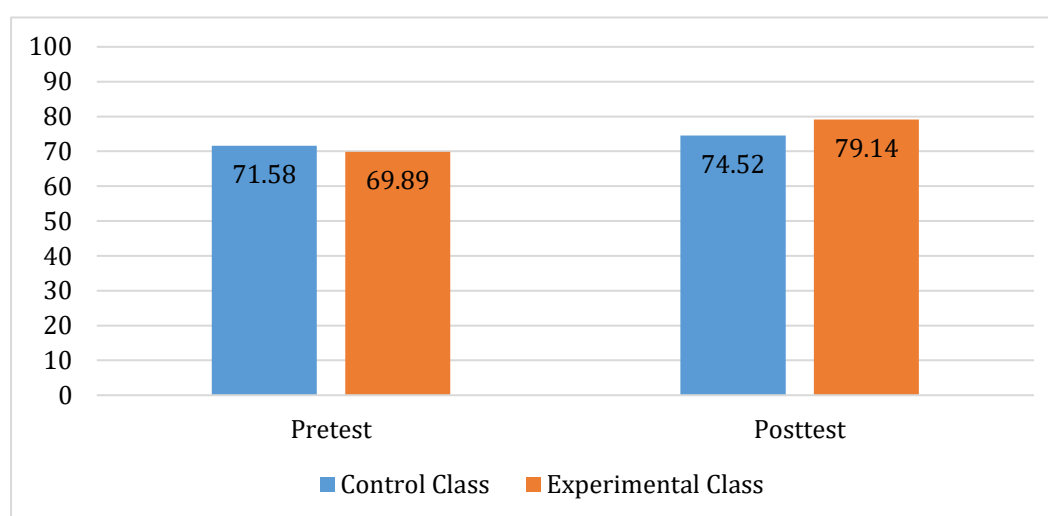
**Table 2. Observation instruments protocol**

No	Indicator	Value Scale
1	Presentation Systematics	1-4
2	Language Usage	1-4
3	Intonation and Articulation	1-4
4	Opinion Ability	1-4
5	Cooperation	1-4

Both test and observation scores were then combined to obtain the final or average score. Final scores were analyzed by analytical techniques using SPSS version 25 through the Normality test and Homogeneity test for prerequisite tests. If the prerequisite test is met, it is continued with the Hypothesis test with the Independent Simple T-Test with the assumption that when the significance is  $< 0.05$ , the  $H_0$  is rejected and  $H_1$  is accepted and vice versa. Furthermore, the N-Gain test was used to compare the learning achievement of the two classes.

## RESULT

The data are the learning outcomes of the control and the experimental class taken from cognitive learning outcomes in the form of test results with the instruments in Table 1 and psychomotor in the form of observations during discussions with instruments in Table 2, the two results will be combined into the final score to be analyzed. The data on the results of the two classes are presented below. The learning outcomes of students in class X IPS 2 (control class) were measured by a test including the pretest which was taken from the data of the previous material test scores and the posttest was taken from the test scores of the Business Entities in the Indonesian Economy using the help of google forms and discussion scores. To measure the learning achievement of students in class X IPS 3 (experimental class), a test result was carried out including a pretest derived from the test scores of the previous material and a posttest taken from the test scores of the Business Entities in the Indonesian Economy using Quizizz assistance and the value of the discussion process. The data from the pretest and posttest results are presented in Figure 1.



**Figure 1. The average learning outcomes from control and experimental class**

Based on Figure 1, the pretest results from the experimental class are lower than the control class due to several factors including evaluation media and students' external factors. Based on the data that the researchers obtained, it is necessary to test the normality and homogeneity tests in order to test the hypothesis prerequisites. Based on the normality test with the Shapiro-Wilk test, the significance value of the learning outcomes (pretest) from the control class was 0.186 and the experimental class was 0.376. While the learning outcomes (posttest) from the control class are 0.319 and from the experimental class are 0.454. Both classes have a significance value  $> 0.05$ , this condition proves that learning outcomes are normally distributed. The results of the homogeneity test using Levene's test from the pretest data of the control class and the experimental class obtained a value of 0.229, which indicates that the two classes are homogeneous. Meanwhile, the homogeneity test of the posttest data obtained a significance value of 0.746, with a significance value  $> 0.05$  indicating that the posttest data of the two classes were homogeneous.

Independent sample T-Test based on the results of hypothesis testing with a total sample of 68 students, the data obtained a significance value (2-tailed) of 0,002. From the results of the hypothesis test, the significance value is  $<0.05$ , which proves that  $H_0$  is rejected.  $H_1$  is accepted with the assumption that the STAD learning model assisted by Quizizz has a significant impact on student learning achievement. Based on the N-Gain test results, the average score for the control class was 0.0575, while the experimental class was 0.3043.

Based on the results of the N-Gain test, the experimental class was superior to the control class. In this condition, the learning achievement of the control class is included in the low criteria, namely N-gain  $<0.30$ , while the learning outcomes of the experimental class belong to the medium criteria, with a value of 0.30 N-Gain  $<0.70$ .

## DISCUSSION

The study used two classes, namely X IPS 3 with 35 students as the experimental class and X IPS 2 with 33 students as the control class. Based on the research data, the average acquisition of learning outcomes for class X IPS 3 (experimental class) was taken from the previous daily test scores, while the post-test was taken from the test using Quizizz as shown in Figure 1. From the results, it can be known that the score of the students is increasing, and also the students who were finally complete the minimum score increased from 4 students to 16 students. It means that the students are actively learning and doing the discussion process very well, and also because of the interesting learning atmosphere with Quizizz media. This result is similar to the research of Sholichah, Soetjipto, and Rahayu (2018) who state that implementing learning with a collaborative STAD model is able to improve student learning outcomes to achieve mastery.

Based on the results of the study, the average acquisition of learning outcomes for class X IPS 2 (control class) consisted of a pretest taken from the previous daily test scores, while the post-test results consisted of an assessment of quiz results and discussions and there was a change that can be seen in Figure 1. The average increase that occurs in the learning outcomes of class X IPS 2 students is still relatively minimal. This result is not so maximal compared to class X IPS 3 which is given treatment. This relatively minimal change is caused by many students who do not participate and whose understanding of the material is not optimal. This causes only some students who are able to give maximum results from the previous value. The discussion activities carried out still do not reach students as a whole because students feel bored and there is inequality between groups as seen from the competence of the students.

Based on the effects of the Hypothesis test, it became determined that  $H_0$  was rejected and  $H_1$  was accepted. We hypothesized that the STAD collaborative learning model supported by Quizizz had a significant impact on learning outcomes. The results are directly proportional to the research by Yurisma, Lian, and Kurniawan (2022) that the STAD model learning affects the learning achievement of Economics class XI IPS with t count with values  $1.84 > 1.495 > t$  table result. The comparison of the two classes is quite different when it is observed from the N-Gain test, where the experimental class is still quite good from the N-gain control class as seen in the increase in the acquisition of the average value. With this value, the experimental class is classified as medium criteria, while the control class is classified as low criteria. This difference is also seen in the research of Lubis (2017) that from the aspect of learning outcomes and activeness, it can be seen that the experimental class includes good criteria, while the control class only has sufficient criteria.

According to Slavin (2015), the cooperative learning STAD type has the main idea to motivate students to stimulate each other and increase student activity with each other to observe the material in achieving maximum learning achievement. This is the evident in class X IPS 3 which became an experimental class after being applied to learning activities with the STAD learning model assisted by Quizizz, which had an impact, especially on the activity of expressing opinions, expressing problems, and providing solutions to group assignments obtained. This process also builds student interaction slowly so that learning outcomes are maximized through a discussion process between students. This description of the situation is also expressed by Setiawan, Rusmiati, and Ismail (2021) in their research which concludes that maximum learning outcomes



are also produced by the impact of the correlation between the STAD and student activity. Similar to the research from Wahyuni (2019) which stated that the student's understanding of equity increased in both smart and less intelligent students.

This is reflected by the research data in the form of observations of the discussion process carried out by the control class and the experimental class. The results showed that students from the experimental class were quite active in the discussion process more than the control class. These results can not be separated from the role of the application of the STAD cooperative learning model and the Quizizz media which support students to actively interact and support each other during the learning process. It is evident from the research conducted by Hakim and Fajriah (2019) that STAD is a learning model that can provide an increase in student collaboration. The same result is also proven by Nair and Sanai (2018) that there is an increase in the collaboration process and also the social skills of each student. Moreover, the group phase in the STAD learning model is quite helpful for students regarding sharing tasks and helping to complete tasks together. Collaboration with Quizizz media is also quite appropriate which also influences the student interest and relieves boredom during learning. Class X IPS 3 students maximize the question bank feature to practice many questions related to the material on Business Entities in the Indonesian Economy. The main interest of students in the quiz process is animation and an attractive display with features that add points, increase the duration of each question, and other features so that the acquisition of learning outcomes of class X IPS 3 students who are used as experimental classes is maximized.

At the time of observation, some obstacles were found in applying learning with the Student Team Achievement Division model. These constraints include some students with higher competencies who found it difficult to explain to their other group friends and took longer to adapt. The same thing was experienced by Padalia et al. (2022) who took a long time for the application of the learning to achieve the desired curriculum. Then, the teacher's ability to assist and direct students during the discussion process still needs to be maximized. According to Yulianto et al. (2020), the increase in results that occur in students will be better when there is good motivation as well. In addition, there are obstacles in the process of implementing the quiz through the Quizizz media. These obstacles include that there were still some student electronic devices that do not support access to the Quizizz website. Less than the maximum class wifi connection is used so that it hampers the quiz process by students. This is the less-than-optimal learning outcomes obtained in learning activities. However, the cooperative learning model with the STAD type assisted by Quizizz produces a better impact on student learning outcomes in terms of cognitive abilities and in terms of discussion skills between students who experienced the same results.

The researcher hopes this research will be used as a reference for further research. Researchers need to convey suggestions to teachers, such as paying more attention, guiding, and motivating the students so that they can do the discussions actively. In addition, there should be some facilities to support the learning process. The other researchers also should be able to collaborate with STAD with other models. They can assist teachers in preparing the infrastructure used during the learning and giving the test using Quizizz media to reach the maximum results.

## **CONCLUSION**

The application of the STAD cooperative learning model with the help of Quizizz has proven to affect learning outcomes in the cognitive and psychomotor dimensions. However, some limitations occurred during the research, including some students who were less confident to explain and argue, the teacher who was not maximal in motivating and strengthening the students, and the lack of maximum availability of the infrastructure for both students and teachers. For further research, the researcher hopes that it maximizes the teacher's role to direct and motivate students to be more confident and active, supports the maximum learning outcomes by providing adequate infrastructure, and forms a collaboration of the STAD model with other models for maximum improvement.

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