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Enhancing economics learning outcomes through the make-a-match cooperative learning model

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ABSTRACT

Learning outcomes reflect the extent to which students understand the material taught and how well they can apply that knowledge in practical situations. This research focuses on the low student learning outcomes in Economics lessons at the high school level. This research aims to determine the increase in student learning results by applying the Cooperative Learning type learning model Make a Match. The research method is a quasi-experimental quantitative approach. The population was 205 SMAN 7 Tasikmalaya class XI science students who study economics. The sampling technique used purposive sampling to obtain 68 students in two classes. The class is divided into two, namely experiments with learning models: Cooperative Learning Make a Match type and control class using models conventional with the lecture method. Technique data collection with 30 multiple-choice test questions. The research results showed statistically significant differences in the increase in student learning outcomes in the experimental class using the Make a Match type Cooperative Learning model and the control class using the conventional model after being given treatment. Thus, the application of the Cooperative Learning model with material designed to be more interactive as an alternative to conventional models can be used to improve student learning outcomes.

INTRODUCTION

Education aims to develop character and morals. Law No. 20 of 2003 mandates that education must shape students into individuals who are faithful and pious to Almighty God, possess noble character, be healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens. Law No. 20 of 2003 on the National Education System stipulates that education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual strength, self-control, personality, intelligence, noble character, as well as the skills needed by themselves, society, the nation, and the state. For this reason, education is expected not only to provide knowledge or values but also to function to develop all the potential that students have as a whole in order to improve the quality of life in the future.

Education is a fundamental pillar for the development of individuals and societies. Within the educational framework, the effectiveness of teaching methods plays a crucial role in ensuring that students not only understand but also retain and apply the knowledge they acquire. In the context of economics education, traditional teaching methods often fail to engage students actively, leading to suboptimal learning outcomes. Therefore, exploring and implementing innovative instructional strategies is imperative to enhance student engagement and achievement. The world of education certainly cannot be separated from teaching and learning activities, and teaching and learning is an interaction or reciprocal relationship between teachers and students. Teachers are the spearhead in carrying out educational missions in the field and are an important factor in realizing a quality and efficient education system (Slavin, 2018; Woolfolk, 2016)

The success of learning can be seen in the extent to which learning can change students' knowledge, attitudes, and personality values. These three aspects are measured by evaluating the achievement of learning objectives. These learning outcomes are related to students' success in

achieving certain abilities. Ariyanto et al. (2018) stated that for each basic competency learning material, minimum completeness criteria are set. Learning outcomes are the final part of the learning process; in other words, learning aims to get good results.

This theory emphasizes the existence of a link in the make-a-match type cooperative learning model in that it is based on Vygotsky's knowledge premise (Hogan & Tudge, 2014) that knowledge is social and is constructed from various cooperative efforts to learn, understand, and solve problems. Group members exchange information and understanding, find weak points in each other's strategies, correct each other, and adjust their understanding based on each other's understanding.

Relating to this theory, it turns out that the dominant learning model applied at SMAN 7 Tasikmalaya is the conventional learning model. Preliminary observations and interviews with teachers and students at SMAN 7 Tasikmalaya revealed that the cause of low learning outcomes in economics is that the learning process is one-way and the use of less varied learning models. As a result, students find economics less interesting and difficult to understand. The use of inappropriate learning models makes it difficult for students to understand the material. The lack of student activity related to the learning material affects their understanding of the subject matter. In the teaching and learning process, not all students are willing to actively participate. Many students choose to remain silent when invited to interact by the teacher through questions, and when given the opportunity to ask about material they do not understand, only a few students take the initiative to ask questions. The low level of student engagement is evident in their tendency to listen passively, take notes, and memorize. This is reflected in the students' learning outcomes, which are below the minimum passing standard (75), with only 35% of students achieving completeness while 65% of students do not meet the maximum completeness criteria. The low scores can be seen from the initial observation data in the form of final exam scores as shown in Table 1.

Based on observations and interviews with teachers at SMAN 7 Tasikmalaya, researchers concluded that educators there still use conventional methods, employ less diverse learning models, often give lectures, create a less challenging learning environment, and limit learning to memorization because presentation media is rarely used. As a result, students' learning outcomes reveal weaknesses in their capacity to recognize and overcome problems, and to think critically, creatively, and innovatively. The low learning outcomes of students indicate that the teachers' instruction is still not well understood by the students

Table 1. The average exam scores of Grade XI Science.

Class	Avarage Score
1	34,00
2	43,00
3	42,00
4	44,00
5	39,00

Source : primary data 2023

Table 1 shows reflects that the students' learning outcomes in the economics subject, viewed from the cognitive aspect, are still very low. Brooks et al. (2014) stated that the decline in student learning outcomes is partly influenced by external factors, namely the social environment and the non-social environment." The social environment highlighted in this context is the teachers, considering the limitations in teaching methods and the presentation of learning materials (use of media) employed by the teachers. Additionally, the social and non-social environment factors highlighted include the limited time students have for studying. The time limitation factor during the learning process is one of the factors contributing to the low learning outcomes in the subject of economics.

One such innovative strategy is the cooperative learning model known as "Make-a-Match." This model emphasizes active student participation, collaboration, and the application of knowledge in a dynamic and interactive manner (Baumgardner, 2015; Nwachukwu, 2014) The Make-a-Match model involves students working in pairs or small groups to match questions with their corresponding answers or concepts, fostering an environment of cooperation and mutual learning. This method is particularly effective in encouraging students to think critically and engage with the material more deeply than

traditional lecture-based approaches (Juliani et al., 2021). Several studies have highlighted the benefits of cooperative learning models in improving academic performance across various subjects. Cooperative learning strategies not only enhance cognitive skills but also develop social and communication skills, which are essential in the modern educational landscape. Despite these advantages, the application of the Make-a-Match model specifically in the teaching of economics has not been extensively explored.

One effort to address the problems faced by students is to select and use an appropriate model in the learning process to create an engaging learning situation. Using an appropriate learning model will also determine the effectiveness and efficiency of learning. Therefore, a learning model is needed that can make students interested and active during class without compromising the quality of learning itself. One such learning model that can be applied is the "make a match" model. The "make a match" learning model is a cooperative learning model where students exchange partners or match questions and answers provided through a card game. This model is designed to give students the opportunity to collaborate with others and be active in the learning process. The implementation of the cooperative learning model type "make a match" is expected to help students understand the material presented by the teacher during the lesson and make the learning process more enjoyable, thereby improving students' learning outcomes in the economics subject at SMAN 7 Tasikmalaya. Nakagawa (2003) the stages of the "make a match" learning model are as follows:

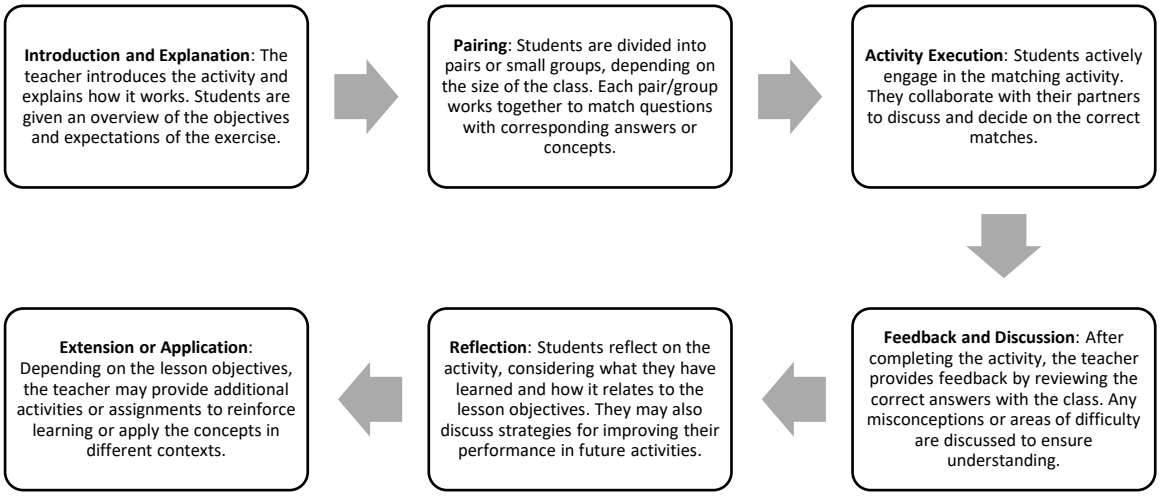

Figure 1. Stages of the "make a match" learning model

In SMA Negeri 7 Tasikmalaya, previous evaluations of student performance in economics have indicated that many students struggle to achieve the minimum competency standards. Traditional teaching methods, which often rely on passive learning, have been identified as a significant factor contributing to these challenges. There is a clear need for a more engaging and effective instructional approach to help students better understand and retain economic concepts. This research aims to investigate the effectiveness of the Make-a-Match cooperative learning model in enhancing the learning outcomes of Grade XI Science students in economics at SMA Negeri 7 Tasikmalaya. By comparing the academic performance of students taught through this interactive model with those taught through conventional methods, this study seeks to provide empirical evidence on the efficacy of the Make-a-Match model in improving economics education. The expected outcomes of this research include not only higher academic achievement but also increased student engagement and motivation. By demonstrating the potential benefits of the Make-a-Match model, this study aims to contribute to the broader discourse on educational innovation and pave the way for its wider adoption in economics education and beyond.

RESEARCH METHODS

The research uses a quasi-experimental method with a Nonequivalent (pretest and posttest) Control Group Design. The research design that will be used is as follows:

O1	*X1*	O2
O3	*X2*	O4

Figure 2. Reserach Desgin

Information :
O1: pre-test in the experimental class
O3: pre-test in the control class
X 1: Treatment in the experimental class using the Cooperative Learning model
X2: Treatment in the control class without using the Cooperative Learning model
O2: post-test in the experimental class
O4: post-test in the control class

The research was conducted at SMAN 7 Tasikmalaya, with a population of 211 Grade XI Science students taking economic courses. The sampling technique used was purposive sampling, a non-probability sampling technique where the researcher selects participants based on specific characteristics or criteria that are relevant to the research question. The selection is subjective, and the goal is to focus on particular characteristics of a population that are of interest, which will best enable the researcher to answer the research questions. Thus, the researcher only selected Class XI Science 1 as the experimental group, consisting of 32 students, and Class XI Science 2 as the control group, also with 32 students.

The research instrument used consisted of 30 multiple choice questions with learning outcome indicators recommended by Anderson and Krathwohl, which utilize cognitive markers from the revised Bloom's Taxonomy. The cooperative learning model "make a match" was applied in the experimental group, while the control group used a conventional model. Data for the research were sourced from observations in the field during the teaching and learning process, as well as pretest and posttest scores. Subsequently, the obtained data were analyzed descriptively and inferentially, with a significance level of 5%, using the SPSS 26 software. The reliability of the instrument used was 0.727, categorized as high.

RESULTS AND DISCUSSION

The research data obtained were tested using inferential statistics, with the first step being classical assumption tests. In the normality test results for the experimental class, Asymp. Sig. (2-tailed) values of 0.065 for the pretest and 0.162 for the post-test were obtained, indicating that both data sets are normally distributed as the significance level is greater than 5% or 0.05. Similarly, for the control class, the Asymp. Sig. (2-tailed) values were 0.076 for the pretest and 0.065 for the post-test, also exceeding the significance level of 5% or 0.05, thus concluding that both the pretest and post-test data for both the experimental and control classes are normally distributed.

Next, the homogeneity test was conducted on the data, resulting in values of 0.728 for the pretest data of the experimental and control classes and a significance value of 0.680 for the post-test data of both classes. Both results indicate homogeneity as the significance values are greater than the significance level of 5% or 0.05. Based on the research results in the experimental class using the cooperative learning model "make a match" and the control class using the conventional learning model, with 30 multiple-choice questions provided, Table 2 indicates that the pretest scores in the experimental class are interpreted as high. In contrast, those in the control class are interpreted as moderate. This suggests that the cooperative learning model "make a match" successfully improved student learning outcomes compared to the conventional learning model.

Table 2. Average score in Experimental Class and Control Class

Type Class	Student Total	Average Score		Mas Score	*N-Gain*	Interpretasi
		Pretest	***Postest***			
Experimen	32	**33,50**	**80,00**	97	0, 773	**High**
Control	32	**30,00**	**73,50**	90	0, 614	**Medium**

Source : results of research data processing (2023)

The next statistical test is hypothesis testing with a significance level of 5%. In Table 3, the experimental class shows a Sig value of 0.000, indicating an improvement in student learning outcomes using the cooperative learning model "make a match" before and after treatment. The difference can be observed in the average post-test scores, showing an increase in student learning outcomes by 36.87. Therefore, it can be concluded that the cooperative learning model "make a match" is effective in improving students' learning outcomes in the economics subject. Meanwhile, for the control class, the Sig value is also 0.000, indicating an improvement in student learning outcomes using the conventional learning model before and after treatment, with an increase in student learning outcomes by 37.97.

Table 3. Results of Paired Samples T-Test

Type Class	Learning Outcome	Mean	Paired Samples T-test		Sig. (2-Tailed)
			t	df	
Eksperimen	Pretest	33,44	44,801	33	0.00
	Post test	84,44			
Control	Pretest	35,53	-36,337	33	0,00
	Post test	73,50			

Source : results of research data processing (2023)

H1: Student Learning Outcomes in the Experimental Class

Based on the research that has been conducted, there is a difference in the increase in learning outcome scores on the pre-test given before treatment and the Post-test given after treatment. The increase between Pre-test and Post-test in the experimental class can be shown by the average value data obtained based on N-Gain processing, namely 0.773. Hardi & Rino (2022) concluded that there were higher learning outcomes for experimental class students than those in the control class. There is a significant influence between the learning outcomes of the experimental class using make-a-match type cooperative learning and the control class using conventional learning in economics subjects regarding economic growth in adjusting journal trading companies at SMA Negeri 10 Palembang.

Johnson & Johnson (2018) that the differences in student learning outcomes in the experimental class that used the make-and-match type cooperative learning model obtained an average value of learning outcomes in the initial measurement (pre-test) obtained an average value of 48.46 and the final measurement (Post-test). The average value obtained was 80.51 so that a difference of 32.05 was obtained so; that the calculation results showed that there was a significant difference in the learning outcomes of students who used the make-and-match type cooperative learning model from the initial measurement (pre-test) to the final measurement (Post-test). Anwar et al. (2019) stated that student learning outcomes in Economics subjects taught using the Make A Match type cooperative learning model obtained a Pre-test score of 74.23 and a Post-Test score of 74.79. Alfian (2014) stated that the Make-A-Match model can improve sociology learning outcomes regarding social inequality for class X SMA Negeri 4 Pekanbaru students. It can be proven that from the initial test completion 25.71%, in cycle 1 the first activity was 32.29% complete, and the second activity was 50.00% complete. For cycle 2 activities, the first activity was 72.14% and the second activity was 100% complete. The increase in the average score between the Pre-test and Post-test in the experimental class was quite significant. The average pre-test score is 33.50, and the average post-test score is 80.00.

Based on this, the Cooperative Learning Model Type Make Match is believed to be more effective and influential in improving student learning outcomes because this learning model places more emphasis on the role of students in the learning process. The role of students in constructing their knowledge will serve as a foundation for them to seek more information about issues in economics, specifically on the topic of the state budget (APBN). In this learning approach, students will actively

search for matching cards related to the APBN material and will be able to collaborate with their group members to solve the problems presented by the educator by finding the matching cards.

This aligns with Vygotsky's theory, which states that the learning process occurs when children work on tasks they have not yet mastered but are within their range of capability, known as the zone of proximal development—a developmental level slightly above their current level. According to Vygotsky's constructivist theory, knowledge is not something given by nature but is the result of human interaction with the environment. The individual actively constructs it. In this theory, students must find their own best solutions to the problems given by the educator, then construct these solutions to arrive at the correct answer, and finally present it to the class.

Thus, Vygotsky's constructivist theory supports the use of the Cooperative Learning Model Type Make A Match as an effective way to improve students' learning outcomes on topics related to economic growth and development. Based on field observations, social studies classes at SMA Negeri 7 Tasikmalaya tend to be more active, while science classes are more passive and orderly. The reason the researcher chose to conduct the study in science classes is due to the lower learning outcomes in economics and to avoid the uncontrolled noise and chaos often found in active classes. According to Juliani et al. (2021) one of the weaknesses of the Make-A-Match model is that in large classes, if not managed wisely, it can result in a chaotic, market-like atmosphere.

After conducting research in the experimental class XI science 1, students' learning outcomes and engagement increased. During the treatment, students became more active in asking questions and participating in group discussions about the APBN material. Thus, the application of the Cooperative Learning Model Type Make A Match makes learning more student-centered. Additionally, using matching cards in the learning process can enhance students' memory and understanding because educators can use these cards to present, evaluate, and match the APBN material with real-life scenarios.

H2: Student Learning Outcomes in the Control Class

The research indicates an improvement in learning outcomes from the Pretest administered before the lesson to the Posttest given after the lesson. The improvement in the control class can be shown with an average N-Gain score of 0.614. Furthermore, hypothesis testing also concluded that there is a difference in learning outcomes for students in the control class using the conventional learning model before and after the treatment. However, this increase is not as significant when compared to the experimental class. The average Pretest score is 30.00, and the average Posttest score is 73.50. Sarumaha (2023) shows that there is a difference in the average learning outcomes (post-test) between the experimental class using the Make-A-Match model and the control class using the conventional model. Therefore, it can be concluded that the use of the conventional/lecture learning model is less effective in improving student learning outcomes in the APBN material. This is because, in the conventional learning model, learning is more teacher-centered, with the teacher providing one-way explanations, leading to passive learning without stimulating student activity and engagement.

Nurfiati et al. (2020) states that teaching methods that do not actively involve students in the learning process will result in less optimal critical thinking skills and student learning outcomes. Millis (2023) concludes that the application of the conventional model does not have a significant impact compared to the Cooperative Learning Type Make Match model. Similarly, Nurrahmatullah et al. (2021) conclude that the comparison of models shows that the Cooperative Learning Type Make A Match model is significantly more effective than the conventional model, which has a lower improvement rate.

In practice, during field implementation, student learning outcomes in the control class using the conventional learning model show differences before and after treatment. However, weaknesses were found in the conventional model during the process, particularly from the student aspect. During the learning process, some students were not paying attention to the explanations and were drowsy, leading to a lack of focus. This is a weakness because if students do not pay attention during the lesson, the material presented will not be optimally absorbed. The lecture method tends to make students bored and passive, even if the material is presented optimally.

Field observations during the research indicate that the application of the conventional learning model can be effective if the material is delivered optimally and if students support the learning process by paying close attention to the teacher. The conventional learning model can still improve student learning outcomes, but in practice, the results are lower compared to the Cooperative Learning Type Make A Match model.

H3 : Student Learning Outcomes in Experimental Classes vs Control Class

Based on data processing and testing of learning outcomes, it can be stated that there is a difference in the improvement of student learning outcomes in the experimental class using the Cooperative Learning Type Make a Match model compared to the control class using the conventional learning model after treatment. Jiao & DaRos-Voseles (2011) concluded that the Posttest results show a significant difference in learning outcomes between the Make-match model and the conventional model in achieving economic learning outcomes. Khusnaini, Lestari, and Nita concluded that there is a significant difference between the learning outcomes of students using the Make-a-Match model and those using the conventional learning model in economics subjects. Maulidawati et al. (2020) concluded that there is a difference in learning outcomes between groups of students taught with the Make-a-Match model compared to those taught with the conventional model.

The application of the conventional learning model does not have a significant impact compared to the Cooperative Learning Type a Match model (Manik & Bangun, 2019; Uki & Liunokas, 2021). Concluded that there is a significant difference in the effectiveness of the Cooperative Learning Type Make a Match model compared to the conventional model, with the Cooperative Learning Type Make a Match model showing a higher improvement (Azis et al., 2023; Suryani, 2018). Interviews indicated that teachers in the classroom still use conventional/lecture learning models due to time constraints when implementing new learning models. The application of learning models takes more time compared to conventional/lecture methods. Another challenge is that some students do not actively participate in discussions. The difference in learning outcome improvements between the experimental and control classes is due to the different treatments applied in each class. In the experimental class using the Cooperative Learning Type Make a Match model, the improvement in learning outcomes was higher than in the control class.

The Make-a-Match learning model is student-centered, allowing for more active learning, problem identification, analysis, and solution-finding. This active student involvement stimulates and enhances their critical thinking abilities, consistent with constructivist learning theory. Piaget states that knowledge is not passively received but actively built through actions. Based on the research, it can be seen that learning outcomes using the Cooperative Learning Type Make a Match model are better than using the conventional lecture method (Carey et al., 2015; Erneling, 2014; Lefa, 2014).

The learning process using the conventional learning model is less effective compared to the Cooperative Learning Type Make a Match model. Both models impact student learning outcomes in economics, but the Cooperative Learning Type Make a Match model has been proven to significantly improve student learning outcomes. Although both models require students to work in groups, foster responsibility and cooperation, and encourage critical thinking and active participation, the control class with the conventional model remained teacher-centered. In the control class, learning was focused on the teacher as the primary source of information, whereas in the experimental class, each student was actively engaged in learning activities.

Through the stages of the Cooperative Learning Type Make a Match model, students became more active by searching for matching cards provided. Huda (2015) describes Make a Match as a learning model where students learn in an enjoyable environment by finding pairs while studying a specific concept or topic. The impact of the Cooperative Learning Type Make a Match model on learning improvement is evident from the gain scores of both classes, as well as their pretest and post-test scores. The gain score clearly shows that the experimental class had a higher gain than the control class. Additionally, the post-test scores in the experimental class were significantly higher than those in the control class after the treatment, indicating that the Cooperative Learning Type a Match model significantly improves student learning outcomes.

Iasha (2018) found that implementing the Cooperative Learning Type Make a Match model with a scientific approach enhances learning. Li & Lam (2013) concluded that the Cooperative Learning Type Make a Match model positively influences and improves learning outcomes. The experimental class's situation did not occur in the control class. In the control class, the learning process focused on teacher-centered principles, resulting in a less conducive classroom atmosphere and lower student engagement. Sari et al. (2019) noted that students' tendency to receive information passively from the teacher limited their understanding and critical thinking, resulting in lower learning outcomes.

In contrast, the active role of students in seeking information in the experimental class using the Cooperative Learning Type Make a Match model led to better engagement and understanding, as they were directly involved in the learning process. The control class's conventional learning model resulted in lower post-test scores compared to the experimental class, indicating the conventional model's limited effectiveness in improving learning outcomes. Overall, while the conventional learning model can still enhance learning outcomes if applied optimally and supported by student attention, the Cooperative Learning Type Make Match model has been shown to be more effective in significantly improving student learning outcomes.

CONCLUSION

Implementation of the "Make-a-Match" cooperative learning model in economics learning can significantly improve student learning outcomes. This method involves pairing activities to match questions with appropriate answers, which encourages active interaction and collaboration between students. This approach not only makes the learning process more interesting and enjoyable, but also improves understanding and retention of the material. The main benefits of implementing a “Make-a-Match” model include: student engagement , social skills development, deeper understanding of the material, learning fun, and immediate feedback. Overall, the "Make-a-Match" learning model is proven to be effective in improving economic learning outcomes by utilizing a collaborative and interactive approach, which not only improves students' understanding but also their social skills and interest in learning.

The limitations of the research conducted by the author suggest that future studies could focus on variations and modifications of the "Make-a-Match" model to determine if there are more effective or engaging methods for students. For example, integrating technology or using digital media in the card game. Additionally, it would be beneficial to test the effectiveness of the "Make-a-Match" model at various educational levels, such as elementary school, middle school, or even higher education. This comparison will help determine whether the model is effective at different stages of education. Future research is expected to compare the effectiveness of the Make-a-Match learning model with other cooperative learning models, such as Jigsaw or Think-Pair-Share, in improving economic learning outcomes. This can provide a more comprehensive understanding of which models are most effective in a particular context.

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