

**APPLICATION OF THE TAI-TYPE OF COOPERATIVE LEARNING MODEL IN  
IMPROVING STUDENT'S LEARNING OUTCOMES  
(Classroom Action Research Studies on Application of TAI-Type of Cooperative  
Learning Model)**

**Maulina Rofilia<sup>1</sup>, Eni Titikusumawati<sup>2</sup>**

<sup>1,2</sup> IAIN Salatiga

Jalan Lingkar Salatiga KM. 2, Kode Pos (50716), Indonesia

Email: [maulinarofilia@gmail.com](mailto:maulinarofilia@gmail.com)<sup>1</sup>, [enititikusumawati@iainsalatiga.ac.id](mailto:enititikusumawati@iainsalatiga.ac.id)<sup>2</sup>

**Abstract**

The problem behind this research is the low learning outcomes of class VII C students during Middle Semester Assessment 1, making class VII C became the class with the lowest average math score. The lowest average math score happens because there is no learning interaction between students in class, and teachers only use conventional teacher-centered learning models. This research aims to determine the improvement of student learning outcomes in class VII C of SMP N 1 Pringapus by using the TAI-type of cooperative learning model in the data presentation material. This study is a classroom action research with stages of planning, acting, observing, and reflecting. Research data was obtained through written tests, student worksheets, observation, questionnaires, field notes, and documentation. The results of descriptive research analysis showed an increase in student learning outcomes of class VII C SMP N 1 Pringapus through the TAI-type of cooperative learning model on data presentation material. Learning outcomes improvement can be known through the evaluation results in each cycle. There were 52,94% or 18 students who completed with average learning outcomes of 79,85 in cycle I, and in cycle II the number of students who completed increased to 82,35% or 28 students with average learning outcomes of 87,79. Meanwhile, the result of the student response questionnaire was 74,74%, which meant that students agreed or liked to use the TAI-type of cooperative learning model in teaching and learning activities at school.

**Keywords:** *Classroom Action Research, Cooperative Learning, TAI, Learning Outcomes, Data*

**Introduction**

Learning is the main activity carried out by students at school to realize the goals to be achieved. According to Law Number 20 of 2003, the National Education System Article 3 explains that the purpose of national education is to develop the potential of students to become human beings who believe and fear God Almighty, have a noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens. These national education purposes can be achieved if the learning activities can be carried out well or can be said to be successful. Learning is a process by which an individual student gets the skills, abilities, and attitudes obtained in stages and continuously from infancy to old age (Alfian, 2019). Learning is essentially a reciprocal transactional communication process between students with other students, and between teachers and students to achieve the goals that have been set (Djamaluddin & Wardana, 2019). Learning aims to create conditions that allow the learning process to occur in students.

Assessment is a series of activities to obtain, analyze, and interpret data regarding students' processes and learning outcomes, which are carried out periodically, systematically, continuously, and thoroughly (Febriana, 2019). The learning outcomes can be defined as the skills students finally get after receiving a direct and continuous learning experience (Kompri, 2017). Therefore, students with a good understanding of the material

can be seen from their learning outcomes. Moreover, the learning outcomes are still a benchmark for successful student learning (Berliana, 2022).

Based on observations in August 2021 in limited face-to-face mathematics learning activities in class VII C of SMP N 1 Pringapus, the implementation of mathematics learning so far is still using the conventional learning model. This conventional learning model makes students passive because they only receive the material, there is no interaction between students, and students are not actively involved in the learning process. That can impact the low learning outcomes in the class. The learning outcomes of Class VII C students are still far from the KKM (minimum score) set by the school. Based on the results of PTS 1 or mid-semester assessment 1 of class VII C for mathematics, their average score is 34,12. It is the lowest grade average of all class VII in SMP N 1 Pringapus. Of course, this is a serious problem that must be immediately resolved.

Referring to the results of observations in class VII C that have been described previously, the author has an alternative solution that can be used as an effort to improve student learning outcomes for the better, namely by using a learning model that follows the conditions in class VII C. Appropriate learning activities in class VII C SMP N 1 Pringapus is a student-centered learning model and uses learning activities but also pays attention to individual learning. So that in the discussion activities carried out, students have responsibilities and also develop their thoughts with other members.

A learning strategy is needed to improve the education quality, which is expected to improve the learning process that has taken place (Putra & Taufina, 2019). The teacher's strategy must be appropriate when delivering lessons, especially when choosing the learning model (Syukri, Murniati, Soewarno, Yanti, & Halim, 2020). Cooperative learning model type Team Assisted Individualization aimed to overcome the difficulty of solving and understanding learning material problems, and group leaders as assistants who have more knowledge can help their friends who have learning difficulties (Novalinda et al., 2020). This learning model combines gift group and individual responsibility based on the basic knowledge level of students (Syamsidah, 2017). Therefore, using the TAI type of cooperative learning model, students will be asked to play an active role in small group discussions so that students are expected not to ask questions and discuss with others. In this cooperative learning process, the upper group will be tutors for lower group students. They will increase their academic ability because they provide services as tutors to peers who need more profound thought about the relationship of ideas contained in specific material (Silalahi & Hutauruk, 2020). TAI type of cooperative learning model emphasizes guidance between group members to understand the material and solve the problem being studied so that students will have the same understanding (Cahyaningsih, 2018). This learning model has advantages, following: 1) reducing anxiety such as eliminating feelings of isolation and panic, replacing competition with cooperation, involving students to be active in the learning process; 2) learning through communication, such as students can discuss, debate, or convey ideas, concepts and skills until they understand it, students have a sense of responsibility towards other friends in the learning process, and can learn to appreciate the ethnic difference, performance level differences, and disability physical; 3) allows students to learn together, mutually help, integrate new knowledge with theirs knowledge, and find their understanding through exploration, discussion, explanation, seeking relationships and questions new ideas that arise in the group (Sukarini, 2020).

Based on the explanation of the problems above, the authors are interested in conducting research activities to find solutions to improve student learning outcomes in class VII C SMP N 1 Pringapus. The solution that the author chose was to apply the Team Assisted Individualization (TAI) type cooperative learning model in mathematics learning activities in class VII C of SMP N 1 Pringapus. Therefore, this research aims to determine the

application of the cooperative learning model in improving the learning outcomes of class VII C students of SMP N 1 Pringapus in the 2021/2022 academic year in data presentation.

## Method

This research used Kurt Lewin's CAR design, which consists of four components: planning, action, observation, and reflection. Planning is the process of determining improvements that depart from a researcher's ideas, action is steps carried out by the researcher following the prepared plan, observation is made to collect information about various weaknesses/lack of actions that have been taken, and reflection is an activity of analyzing the results of observations to bring up new programs or solutions (Sanjaya, 2017).

The subjects in this research were students of class VII C SMP N 1 Pringapus for the 2021/2022 academic year. This class consists of 34 students consisting of 20 male and 14 female students. The instruments in this study were written tests, questionnaires, documentation, field notes, student worksheets, and observation. Data collection is carried out according to the instrument and time of data collection. Data on student learning outcomes were collected through a written test which was carried out at the end of each cycle. The observation data was obtained when the learning activities took place. The Questionnaire was given after the last cycle, which is cycle II.

The TAI learning model has eight components. The eight components are namely: 1) teams, namely it make the formation of heterogeneous groups consisting of 4 to 5 students; 2) placement test, which is giving a pre-test to students or seeing the average daily value of students so that teachers know students' weaknesses in particular fields; 3) student creative, carry out tasks in a group by creating situations in which individual success is determined or influenced by the success of the group; 4) team study, namely the stages of learning actions that must be carried out by groups and teachers provide individual assistance to students who need it; 5) team scores and team recognition, namely giving a score to the results of group work and giving award criteria for groups that succeed brilliantly and provide encouragement enthusiasm for groups that are considered less successful in completing tasks; 6) teaching group, namely giving material briefly from the teacher before giving group assignments; 7) facts test, namely the implementation of small tests based on the facts obtained by students, and; 8) whole-class units, namely giving the material back at the end of the learning time by the teacher with a solution strategy problem (Sukarini, 2020).

## Results and Discussion

Student learning outcomes are viewed from the cognitive aspect through a written test in the form of an essay. Student learning outcomes are seen based on the answers given by students. The following is presented data on learning outcomes for class VII C SMP N 1 Pringapus for the 2021/2022 academic year on data presentation material. Students with a learning outcome score of more than or equal to 80 are declared complete.

The following is a calculation of learning outcomes data that have been obtained in cycle I.

- a. The average value of student learning outcomes in cycle I

$$\bar{x} = \frac{\sum_1^i x_i}{n} = \frac{2.715}{34} = 79,85$$

- b. The percentage value of students' completeness in cycle I

$$P_c = \frac{F(\sum \text{students complete})}{N} \times 100\% = \frac{18}{34} \times 100\% = 52,94\%$$

- c. The percentage value of students' incompleteness in cycle I

$$P_{nc} = \frac{F(\sum \text{students not complete})}{N} \times 100\% = \frac{16}{34} \times 100\%$$

$$P_{nc} = 47,06\%$$

Table 1. Data on the Acquisition of Success Indicator Values for Cycle I

Number	Value		Number of Students Score	Percentage
	Number	Completeness		
1.	$\geq 80$	Complete	18	52,94%
2.	$< 80$	Not Complete	16	47,06%
<b>Total</b>			34	100%

In the learning activities cycle I, there are several shortcomings, which are when it was time for class, there were still students who flocked to play online games, and the teacher was still not firm in dealing with students who made the class atmosphere not conducive when learning takes place, some students interfere and talk about other things outside of the learning topic, some students still do not understand the TAI type of cooperative learning model, teachers are still lacking in guiding students during learning activities, student learning outcomes show that the indicators classical of success have not been achieved (less than 80% students are declared completed).

Although there have been some successes in learning, there are shortcomings that must be addressed and resolved. Therefore, there is a need for improvements in implementing learning in cycle II. Several things need to be done to improve learning activities in cycle II, which are the teacher reminding students of the new rules of face-to-face learning to students that while at school, they were not allowed to bring cell phones. If students bring their phones, it must be entrusted to the homeroom teacher, teachers must be more firm in reminding students do not disturb friends and carry out the tasks that have been given well, the teacher re-explains the steps of the activities carried out in TAI type cooperative learning, the teacher is even more in-depth in guiding students who are still having difficulties, the teacher explains to students about the learning objectives and provides direction that group success is influenced by individual success.

The following is a calculation of the data on learning outcomes in cycle II that has been obtained.

- a. The average value of student learning outcomes in cycle II

$$\bar{x} = \frac{\sum_1^i x_i}{n} = \frac{2.985}{34} = 87,79$$

- b. The percentage value of students' completeness in cycle II

$$P_c = \frac{F(\sum \text{students complete})}{N} \times 100\% = \frac{28}{34} \times 100\% = 82,35\%$$

- c. The percentage value of students' incompleteness in cycle II

$$P_{nc} = \frac{F(\sum \text{students not complete})}{N} \times 100\%$$

$$P_{nc} = \frac{16}{34} \times 100\%$$

$$P_{nc} = 47,06\%$$

Table 2. Data on The Completeness of Student Success Indicators Cycle II

No.	Value		Number of Students Score	Percentage
	Number	Completeness		
1.	≥ 80	Completed	28	82,35%
2.	< 80	Not Completed	6	17,65%
<b>Total</b>			34	100%

In the reflection stage, based on the data obtained, there is a significant increase in learning activities using the TAI-type cooperative learning model, including the learning atmosphere in the classroom becomes more conducive, the level of understanding of the students' material is quite good, students complete the tasks and written tests well, student learning outcomes have increased when compared to learning outcomes in cycle I, learning outcomes have reached the achievement of classical success (more than 80% students are declared completed) so that the cycle stops in cycle II.

In this section, a bar chart comparing the learning outcomes of class VII C SMP N 1 Pringapus will be presented for the 2021/2022 academic year using the TAI-type cooperative learning model.

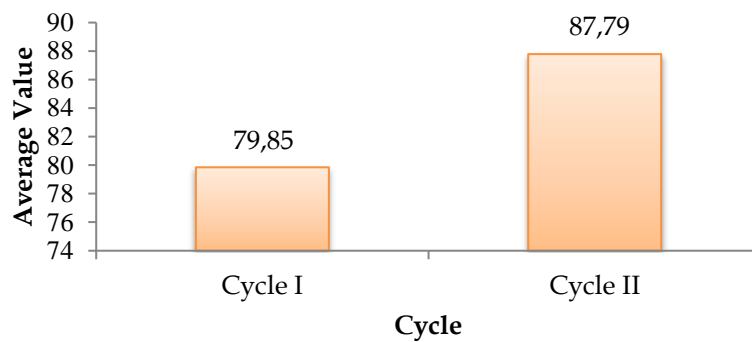


Figure 1. Bar Chart of Average Learning Outcomes of Each Cycle

In the next section, we will the percentage of student data is presented as follows:

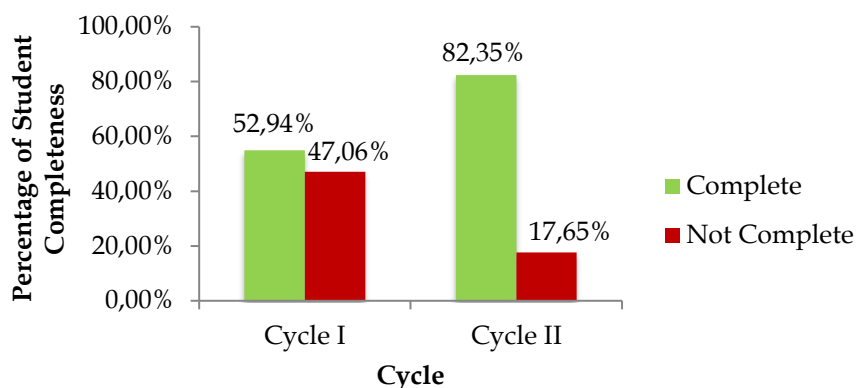


Figure 2. Bar Chart of Completeness Percentage of Student Success Indicators of Each Cycle

The results of student responses regarding using the TAI type of cooperative learning model in learning mathematics show that the average result of the learning participant questionnaire is 74,74%. The score on the Likert scale is included in the agree/good/like

category. Therefore, it can be said that students agree with or like learning mathematics using the TAI-type of cooperative learning model.

In addition, there is also a final score for assessing teacher performance. In cycle I, the score of teacher performance was 78,75 and was included in the "Good" category. Meanwhile, in cycle II, the teacher's performance score was 92,5, which was included in the "Very Good" category.

Based on the data on learning outcomes that have been collected in the cycle research I and cycle II, it can be seen that the application of the TAI-type of cooperative learning model can improve the learning outcomes of class VII C students of SMP N 1 Pringapus in the mathematics subject of data presentation material. It can be seen in Figure 2 that the percentage of complete learning outcomes for students of class VII C SMP N 1 Pringapus has increased. The criteria for completeness that the author wants to adopt in this study is if the student has a score of 80 (KKM), then it is declared complete. While the classical success indicator can be achieved by 80% of the total number of students who passed the KKM score, the research can be stopped and declared successful.

Eighteen students were declared complete, and 16 were incomplete at cycle I. The percentage of students who complete or score above the KKM is 52.94%. In cycle II, there was an increase in the number of students who completed, namely 28 people and 6 others who did not. The percentage of students who completed the second cycle was 82.35%. Because in cycle II, the percentage of students who completed reached 82.35%, meaning that they had exceeded the classical completeness criteria. Thus the cycle can be stopped and ends in cycle II.

Based on the research data, it has been shown that the TAI-type of cooperative learning model can improve the learning outcomes of class VII C students in data presentation material. From the beginning, many students had low learning outcomes, and the average classical learning outcomes were still below the value of 80, most of the students completed, and the average learning outcomes had exceeded the value of 80. Referring to Syamsidah, the TAI-type of cooperative learning model combines gift group and individual responsibility based on the knowledge level of students (Syamsidah, 2017). At the student creative stage, students will try to solve problems according to their abilities and understanding. Then at the team study stage, students will show each other and discuss them. Therefore, teamwork will be formed in the group.

After learning activities used the type of cooperative learning model TAI had been completed, the authors spread questionnaires about students' responses according to how they felt during the learning activities using the TAI-type cooperative learning model. The questionnaire score was 74,74%, which is the good/agree/like category with learning activities using the TAI-type cooperative learning model.

The result of this research with the title "Application of The TAI-Type of Cooperative Learning Model in Improving Student's Learning Outcomes", can be stated as relevant to Mudiana's research (2021) which results that the application of the TAI learning model in science learning can improve the activities and learning outcomes of class IX.2 students of SMP Negeri 1 Banjarangkan for the 2019/2020 school year. The results of the study by applying the Team Assisted Individualization that findings of students learning activities and mathematics learning outcomes increased from cycle I to cycle II. In addition, another relevant research by Hasanah (2018) shows an increase in students' learning outcomes. This study consisted of 2 cycles with the method used in the research, namely the classroom action research method. Her research result showed that in cycle I, the average value of the students was 63, and in cycle II, it increased to 78,25.

## Conclusion

Based on the research and data analysis, the TAI-type of cooperative learning model can improve the learning outcomes of class VII C students of SMP N 1 Pringapus in the 2021/2022 academic year on data presentation material. This increase can be seen through the value of student learning outcomes in cycle I, namely 18 students completed or 52,94% of the total students and as many as 16 students who did not complete with a proportion of incompleteness of 47,06%, and the average learning outcomes in cycle I is 79,85. In cycle II, there was an increase in learning outcomes where there were 28 students who completed with the percentage of completeness of participants reaching 82,35% and the number of students who did not decrease to 6 students with a percentage of 17,65% and average classical learning outcomes of 87,79. In addition, the results of the student response questionnaire showed that they liked the TAI type of cooperative learning model to be used in learning mathematics, with the result of the percentage of student responses being 74,47%.

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