

Application of TGT Type Cooperative Learning Model (Team Games Tournament) To Upgrade Mathematics Learning Outcomes in Grade V Students SDN Bintara Jaya III Bekasi City

Suharno, Supardi U.S

^{1,2} Indraprasta PGRI University, Indonesia



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ABSTRACT

Objective: This class action research aims to determine the improvement of student learning outcomes after the implementation of the TGT (Team Games Tournament) type cooperative learning model in grade V of SDN Bintara Jaya III, West Bekasi District. **Method:** This research was conducted in two cycles on 32 students. The data collection technique is through observation by teachers and observers, and data analysis is carried out in a descriptive manner with a percentage technique. The success rate of the implementation of the TGT model cooperative method is stated completely or incompletely. **Results:** From the results of the analysis, it was found that student learning outcomes increased from cycle I to cycle II. This can be seen from the student score during the implementation of the first cycle, the average student learning outcome was 67.81 with the number of students who have not reached KKM 70 as many as 10 students or 31.25% and those who have completed as many as 22 students or 68.75%. Based on these results, improvements were then made from cycle I to cycle II. After the improvement, the average mathematics learning outcomes of students increased to 81.6 with the number of students who have reached KKM being 30 students or 93.75% and the number of students who have not reached KKM being 2 students or 6.25%. The learning results in cycle II were declared successful because they had met the research success criteria, namely $\geq 85\%$ of all students had reached KKM, which was ≥ 70 , then the research was stopped. **Novelty:** The conclusion of this study is that the TGT model cooperative method can improve Mathematics learning outcomes in grade V students of SDN Bintara Jaya III, West Bekasi District, Bekasi City and this learning model can be used as an alternative mathematics learning method.

INTRODUCTION

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength [1], [2], [3], self-control, personality, intelligence, noble morals, and skills needed by themselves, society, nation and state, Law no. 20 of 2003 article 1 paragraph 1.

In accordance with the law, the learning process that is able to develop students' potential is an activity-based learning process in which students play an active role in teaching and learning activities organized by teachers. However, this is in contrast to the learning activities in grade V of SDN Bintara Jaya III, West Bekasi District. Based on the results of observations that have been carried out by researchers, grade V teachers of SDN Bintara Jaya III, West Bekasi District have not held a learning process in accordance with the law. Teachers still carry out the learning process that only uses the lecture method where students act as passive actors in teaching and learning activities [4], [5], [6]. Students only listen to the things conveyed by the teacher and do not get the opportunity

to be active in teaching and learning activities. The learning process only emphasizes the demands of curriculum achievement rather than developing all the potentials possessed by students.

The low value of student learning outcomes from daily tests with fractional calculation operation materials is inseparable from the lack of variation in the learning model used by teachers. "The learning model is a pattern that is used as a guideline in planning learning in the classroom", Agus Suprijono. Seeing the number of students in grade V of SDN Bintara Jaya III, West Bekasi District, which is 32 people, teachers should choose a learning model that emphasizes social interaction between students.

One of the social-based learning models is the cooperative learning model. This is supported by Johnson and Johnson, Miftahul Huda, who state that students who work cooperatively to achieve common goals generally have adequate academic and social abilities. In line with this thought, Nur Asma stated "Cooperative learning can also increase students' hard work, be more active and more motivated". But in reality, teachers in grade V of SDN Bintara Jaya III, West Bekasi District have not implemented the learning model. Teachers tend to use a *direct instruction* learning model where teachers play an active role in learning while students only need to remember what has been conveyed by the teacher. The impact of the use of *the direct instruction* learning model applied by teachers can be seen from the lack of motivation of some students in participating in learning activities. Slavin, Miftahul Huda states that "if the cooperative learning model is not well designed, then cooperative learning will have an impact on the emergence of some students who are not personally responsible for their group tasks, besides that some students who are considered incapable tend to be ignored by other group members".

To avoid this impact, the use of a TGT (*Teams Games Tournaments*) type cooperative learning model containing academic games is able to encourage all group members to be involved in working on their group assignments. "In TGT, each student is placed in a group consisting of 3 people with low, medium, and high abilities" Miftahul Huda.

Through this learning model, students with low abilities can play an active role in learning through their groups [7], [8], [9], [10], [11]. However, if you look at the reality, teachers in grade V of SDN Bintara Jaya III, West Bekasi District have not used the TGT (*Teams Games Tournaments*) type cooperative learning model. In organizing teaching and learning activities, teachers use the *direct instruction* learning model which is more dominated by high- and medium-capable students, while low-ability students only act passively in learning. As a result, some students have not been able to achieve the set KKM so that the learning goals are not achieved. Based on this fact, the researcher is interested in conveying a thought that may be a solution to these problems, namely through the application of a cooperative learning model of the TGT (*Teams Games Tournaments*) type in learning. The application of the TGT (*Team Games Tournament*) type cooperative learning model is an alternative action that can improve student learning outcomes.

Based on the above explanation, the researcher wanted to try to conduct a research with the title "Application of the TGT (*Team Games Tournament*) Model Cooperative Method to Improve Mathematics Learning Outcomes in Grade V Students of SDN Bintara Jaya III, West Bekasi District, Bekasi City."

A. Theoretical Studies

1. Definition of Learning

Learning is a familiar word in human life. The term learning is inseparable from the educational process, even the community understands learning as a property of the school. Learning activities are always associated with school assignments. Travers in Agus Suprijono states that "learning is the process of producing behavior adjustments". Based on this opinion, learning is a process in which there are various kinds of activities that aim to produce behavior change. Learning happens because it is driven by needs and goals to be achieved. Rochmat Wahab and Solehuddin stated that "learning is an activity or experience that results in permanent changes in knowledge, behavior and personality". Learning on this opinion is a form of experience. Experience is basically the result of the interaction between students and their environment.

Winkel states that "learning is a mental/psychic activity that takes place in active interaction with the environment that produces changes in knowledge, skills and attitudes". Slameto states that "learning is a process of effort by a person to obtain a new change in behavior as a whole, as a result of his own experience in interaction with his environment". Based on these opinions, it can be concluded that learning is a process of interaction between students and their environment that results in permanent behavioral changes.

2. Definition of Learning Outcomes

Learning outcomes are inseparable from the learning process itself because learning outcomes arise due to learning activities. In other words, learning outcomes are the goals to be achieved from learning activities. Agus Suprijono states that "learning outcomes are patterns of actions, values, understandings, attitudes, appreciation and skills". Soedijarto (Purwanto, 2011: 46) stated that "learning outcomes are the level of mastery achieved by students in following the teaching and learning process in accordance with the educational goals that have been set".

In line with this opinion, Hamzah B. Uno stated that "learning outcomes are behavioral changes that are relatively fixed in a person as a result of a person's interaction with his environment". Based on these opinions, it can be concluded that learning outcomes are changes in student behavior that are achieved after carrying out the learning process where the change in behavior includes cognitive, affective and psychomotor aspects. The change in behavior is caused by the achievement of mastery of a number of materials given in the learning process. The achievement is based on the learning objectives that have been set.

3. TGT (Teams Games Tournaments) type Cooperative Learning Model

Robert E. Slavin states that "*the Teams Games Tournament* was originally created by John Hopkins and later developed by David DeVries and Keith Edwards". "The TGT model is a learning model that is preceded by the presentation of learning materials by the teacher and ends by giving a number of questions to students. After that, students move to their respective groups to discuss and solve the questions or problems given by the teacher. Instead of a written test, each student will meet once a week at the tournament table with two colleagues from another group to compare the abilities of his group with other groups" Nur Asma. Slavin states "In general, TGT is similar to STAD except for one thing: TGT uses academic tournaments, and uses quizzes and an individual progress score system, in which students compete as representatives of their team with other team members whose previous academic performance is equal to theirs". In line with this opinion, Miftahul Huda stated "TGT is similar to STAD in terms of group composition, instructional format and worksheet. The difference is that if STAD focuses on group composition based on ability, race, ethnicity, and gender, then TGT generally focuses only on ability level. In addition, if in STAD, what is used is a quiz, then in TGT the term usually changes to an academic game" STAD or *Student Team Achievement Divisions* is a cooperative learning model whose implementation steps according to Agus Suprijono include:

- a. Form a group of 4 members heterogeneously.
- b. The teacher presents the lesson.
- c. The teacher gives tasks to the group to be done by the group members.
- d. The teacher gives quizzes or questions to all students.
- e. Evaluate.
- f. Conclusion.

Based on some of the above opinions, it can be concluded that the TGT type cooperative learning model is a cooperative learning model whose group division emphasizes more on the level of students' academic ability, in addition to that there is an academic game in which students compete as representatives of their group against representatives of other groups whose previous academic performance is equal to them [12], [13], [14], [15], [16].

B. Action Hypothesis

The action hypothesis in this study is that the application of the TGT (*Teams Games Tournaments*) type cooperative learning model in mathematics learning can improve the learning outcomes of grade V students of SDN Bintara Jaya III, West Bekasi District, Bekasi City.

RESEARCH METHOD

A. Research Setting

1. Research Subject

The subjects of the study were class V students SDN Bintara Jaya III, West Bekasi District A total of 32 students consisting of 15 male students and 17 female students, with the subject of fractional counting operations.

2. Research Place

The research place is the place used in conducting research to obtain the desired data. This research took place at SDN Bintara Jaya III, West Bekasi District , which is also the place of the researcher's assignment.

3. Research Time

The research time is the time when the research is taking place or when this research is carried out. This research was carried out in February - April 2024 even semester of the 2023/2024 academic year. The following is the schedule for the implementation of class action research activities.

B. Research Design

In accordance with the type of research chosen, namely action research, this study uses the action research model from Kemmis and Taggart which is in the form of a spiral from one cycle to the next. Each cycle includes *planning* , *action* , *observation* , and *reflection*. The next step in the cycle is revised planning, action, observation, and reflection. Before entering cycle 1, preliminary actions were carried out in the form of identifying problems. The spiral cycle of the stages of classroom action research can be seen in the following figure:

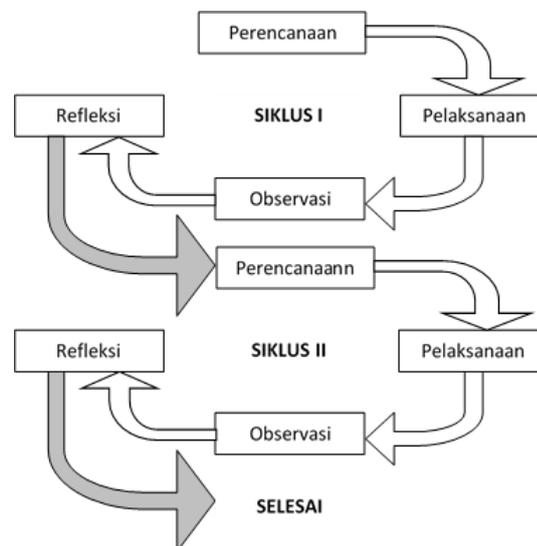


Figure 1. Spiral cycle of the stages of classroom action research.

C. Data Analysis Techniques

In this study, it aims to improve student learning outcomes in mathematics learning, so the technique used in analyzing the collected data is calculated to calculate the percentage of students' ability to answer written tests to find out the results before

and after actions are taken. Data analysis in this study is through: data reduction, data exposure, and conclusion of analysis results. To calculate the percentage of student ability results, the researcher uses the benchmark "The number of achievement scores divided by the maximum score multiplied by 100".

$$NA = \frac{\text{Jumlah Skor Prolehan}}{\text{Skor Maksimal}} \times 100$$

If the first action has not been successful, it will be forwarded to the second action, and so on, until it is clear that the use of the TGT type cooperative learning model can improve student learning outcomes in mathematics subjects and students' ability to achieve the results targeted by the researcher in accordance with the expected action intervention results.

D. Success Indicators

The success rate of action can be known through the presence of signs of change for the better. As an indicator of the success achieved by students in this study, the increase in student learning outcomes in mathematics learning about fraction counting operations in grade V students of SDN Bintara Jaya III, West Bekasi District by using a TGT (*Teams Games Tournaments*) type cooperative learning model with Minimum Completeness Criteria (KKM = 70). The cycle in this study will end if it has met the target, which is 85% of students achieve KKM.

RESULTS AND DISCUSSION

Results

A. Research Results

1. Cycle I

Table 1. Distribution of Frequency of Learning Outcomes for Grade V Students of SDN Bintara Jaya III, West Bekasi District in Cycle I.

No	Value	Frequency	Percentage (%)
1	40	2	3,33
2	50	3	6,67
3	60	5	6,67
4	70	13	6,67
5	80	8	6,67
6	90	1	10
	Sum	32	100

From the frequency distribution table above, we can see a graph of the mathematics learning outcomes of grade V students of SDN Bintara Jaya III, West Bekasi District in the first cycle about fraction counting operations using the TGT type cooperative learning model.

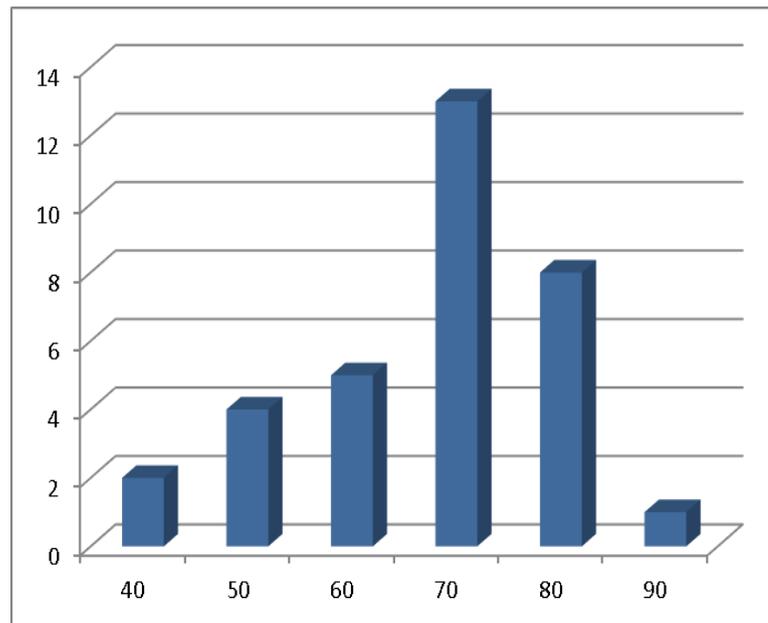


Figure 2. Learning Outcomes of Grade V Students of SDN Bintara Jaya III in Cycle I.

Table 2.Recapitulation of Learning Outcomes of Grade V Students of SDN Bintara Jaya III In Cycle I.

Yes	Description	Results of Cycle I
1	Average learning outcomes	67,81
2	Number of students who complete their studies	22
3	Number of students who have not completed	10
4	Percentage of learning completeness	68,75

The following is a graph of the completeness of the learning outcomes of mathematics students about the fraction calculation operation of class V SDN Bintara Jaya III West Bekasi by using the TGT type cooperative learning model in cycle I:

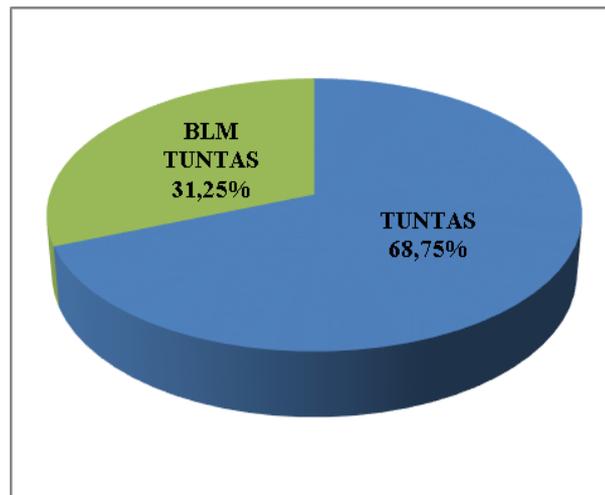


Figure 3. Completeness of the learning outcomes of mathematics students.

From the table and graph above, it can be explained that by applying the TGT type cooperative learning model, the average score of student learning outcomes is 67.81 and learning completeness reaches 68.75% or there are 22 students out of 32 students who have completed their studies. These results show that in the first cycle classically students have not completed their studies, because students who obtained a score of ≥ 70 were only 68.75% smaller than the desired percentage of completeness which was 85%. This is because students still feel new and do not understand what teachers intend and use by applying the TGT-type cooperative learning model.

2. Cycle II

Table 3. Distribution of Frequency of Learning Outcomes of Grade V Students of SDN Bintara Jaya III West Bekasi in Cycle II.

No	Value	Frequency	Percentage (%)
1	60	2	6,25
2	70	5	15,63
3	80	13	40,63
4	90	10	31,25
5	100	2	6,25
	Sum	32	100

From the frequency distribution table above, we can see a graph of mathematics learning outcomes of grade V students of SDN Bintara Jaya III West Bekasi in cycle II about fractional number calculation operations using the TGT type cooperative learning model:

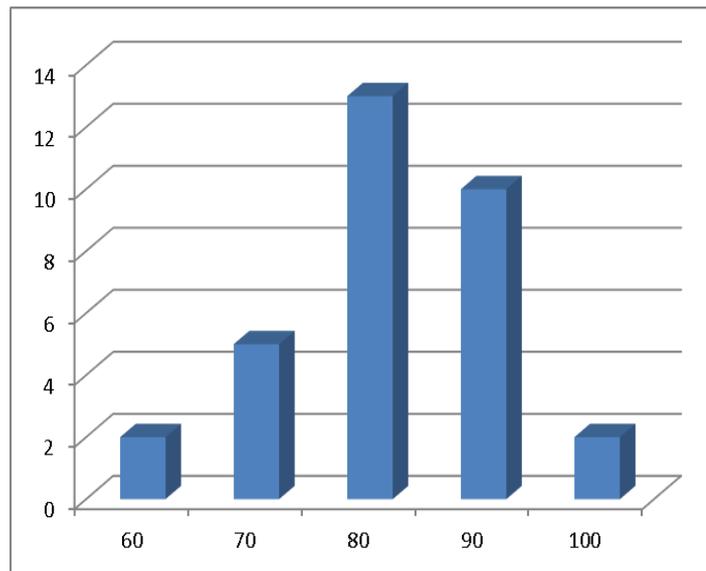


Figure 4. Learning Outcomes of Grade V Students of SDN Bintara Jaya III West Bekasi in Cycle II.

Table 4. Student Learning Outcomes in Cycle II.

No	Description	Results of Cycle II
	Average Value of Learning Outcomes	
1	Number of students who complete	81,6
2	their studies	30
3	Number of students who have not	2
4	completed their studies	93,75
	Percentage of learning completeness	

The following is a graph of the completeness of the learning outcomes of mathematics students about the fraction calculation operation of class V SDN Bintara Jaya III , West Bekasi District using the TGT type cooperative learning model in cycle II:

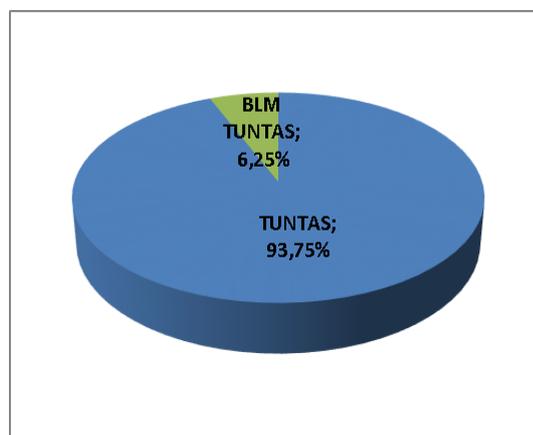


Figure 5. Completeness of Learning Outcomes of Grade V Students of SDN Bintara Jaya III West Bekasi in Cycle II.

Based on the table and graph above, the average score of learning outcomes was 81.6 and of the 32 students who have completed as many as 30 students and 2 students have not reached learning completeness. So classically, the completeness of learning that has been achieved is 93.75% (including the complete category). The results in the second cycle have improved better than the first cycle. The increase in learning outcomes in the second cycle is influenced by the increase in the teacher's ability to apply the TGT type cooperative learning model to make students more familiar with this kind of learning so that it is easier for students to understand the material that has been given.

Discussion

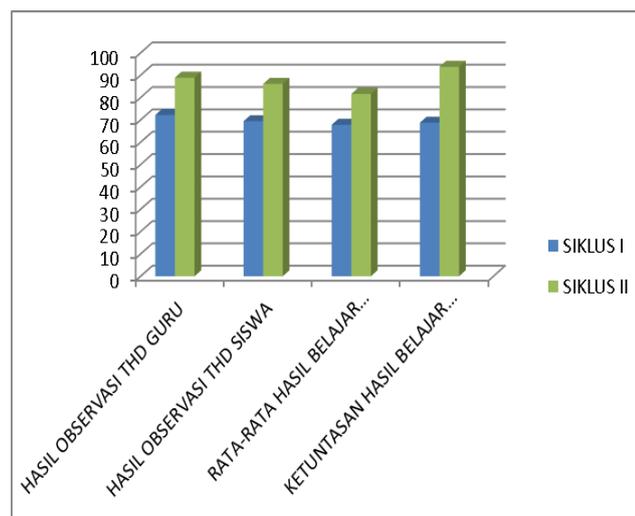


Figure 6. Comparison of Observation Results, Average Learning Outcomes, and Learning Completeness of Grade V Students of SDN Bintara Jaya III Percycle.

The data and graph above show that in cycle II student learning outcomes increased from cycle I. The average teacher observation results in cycle I of 72.2% (good category) increased in cycle II which was 88.9% (very good category), the average results of student observation obtained in cycle I of 69.4% (adequate category) increased in cycle II which was 86.1% (good category). In Cycle II, the learning outcomes were higher, because the total percentage of student learning outcomes increased from 67.81% to 81.6%. As well as an increase in student learning completeness from cycle I to cycle II. In the first cycle, there were 22 students who had completed (68.75%) and 10 students who had not completed (31.25%), there was an increase in the second cycle, namely 30 students who had completed (93.75%) and 2 students who had not completed (6.25%). Thus, the researcher's efforts to improve student learning outcomes in mathematics subjects were fairly successful.

From the discussion above, the researcher drew the conclusion that there was an increase in learning activities from both students and teachers and an increase in student learning outcomes starting from cycle I to cycle II, and in cycle I students under KKM consisted of 10 students, then in cycle II students under KKM decreased to 2 students.

This proves the success and shows that in this class action research (PTK) has achieved the planned goals, and the research was stopped in cycle II.

CONCLUSION

Fundamental Finding : Based on the results of the research and discussion, it can be concluded that the application of the TGT type cooperative learning model in the operation material of counting fractional numbers can improve mathematics learning outcomes in grade V students of SDN Bintara Jaya III, West Bekasi District, Bekasi City. This can be seen from the student score during the implementation of the first cycle, the average student learning outcome was 67.81 with the number of students who have not reached KKM 70 as many as 10 students or 31.25% and those who have completed as many as 22 students or 68.75%. Based on these results, improvements were then made from cycle I to cycle II. After the improvement, the average mathematics learning outcomes of students increased to 81.6 with the number of students who have reached KKM being 30 students or 93.75% and the number of students who have not reached KKM being 2 students or 6.25%. **Implication :** The learning results in cycle II were declared successful because they had met the research success criteria, namely $\geq 85\%$ of all students had reached KKM, which was ≥ 70 , then the research was stopped. Thus, the use of the TGT type cooperative learning model can improve students' mathematics learning outcomes on the subject of fractional number counting operations in class V of SDN Bintara Jaya III, West Bekasi District, Bekasi City. **Limitation :** The research was limited to grade V students at SDN Bintara Jaya III, West Bekasi District, Bekasi City, and specifically focused on the topic of counting operations of fractional numbers. Therefore, the findings may not be generalizable to other schools, different grade levels, or other mathematical topics. **Future Research :** Future research could explore the application of the TGT type cooperative learning model in other mathematical topics or in different educational settings to examine its broader effectiveness and adaptability. Further studies might also compare TGT with other cooperative learning models to assess relative impacts on diverse student populations.

REFERENCES

- [1] M. Ali, *Guru Dalam Proses Belajar Mengajar*. Bandung: Sinar Baru Algesindon, 1996.
- [2] S. Arikunto, *Manajemen Mengajar Secara Manusiawi*. Jakarta: Rineksa Cipta, 1993.
- [3] J. J. Hasibuan and Moerdjiono, *Proses Belajar Mengajar*. Bandung: Remaja Rosdakarya, 1998.
- [4] S. Arikunto, *Prosedur Penelitian Suatu Pendekatan Praktek*. Jakarta: Rineksa Cipta, 1998.
- [5] S. Arikunto, *Dasar-dasar Evaluasi Pendidikan*. Jakarta: Bumi Aksara, 2001.
- [6] A. Arsyad, *Media Pembelajaran*. Jakarta: PT. RajaGrafindo Persada, 1997.
- [7] S. Margono, *Metodologi Penelitian Pendidikan*. Jakarta: Rineksa Cipta, 1996.
- [8] R. W. Dahar, *Teori-teori Belajar*. Jakarta: Erlangga, 1989.
- [9] Departemen Pendidikan dan Kebudayaan, *Petunjuk Pelaksanaan Proses Belajar Mengajar*. Jakarta: Balai Pustaka, 1994.
- [10] J. Mursell, *Successful Teaching (Terjemahan)*. Bandung: Jemmars.

- [11] N. M. Purwanto, *Psikologi Pendidikan*. Bandung: PT. Remaja Rosdakarya, 1990.
- [12] M. Nur, *Pembelajaran Kooperatif*. Surabaya: Universitas Negeri Surabaya, 1996.
- [13] N. Purwanto, *Prinsip-prinsip dan Teknik Evaluasi Pengajaran*. Bandung: Remaja Rosdakarya, 1988.
- [14] N. K. Rustiyah, *Strategi Belajar Mengajar*. Jakarta: Bina Aksara, 1991.
- [15] S. Hadi, *Metodologi Research*. Yogyakarta: Yayasan Penerbitan Fakultas Psikologi Universitas Gajah Mada, 1981.
- [16] R. M. Felder, "Cooperative Learning in Technical Course," 1994.

*** Suharno**

Indraprasta PGRI University, Indonesia

Email: suharnoharno294@gmail.com

Supardi U.S

Indraprasta PGRI University, Indonesia
