JISAE Journal of Indonesian Student Assessment and Evaluation
ICERE The 2nd International Conference on Educational Research and Evaluation
https://doi.org/10.21009/JISAE
JISAE (Journal of Indonesian Student Assessment and Evaluation)
ISSN : P-ISSN: 2442-4919 | E-ISSN: 2597-8934
Website : http://journal.unj.ac.id/unj/index.php/jisae
Vol 9 No 2 (2023)

IMPROVING THE RESULT OF STUDENTS' LEARNING ON SQUARE AND RECTANGLE MATERY THROUGH COLLABORATIVE LEARNING AT CLASS VII MTS YTPI AL-BUKHARI MUSLIM

Nurul Rafiqah Nasution[1]
[1]Master Program Of Mathematic Education State University Of Medan

Address for Correspondence:
rafiqahnstnurul@yahoo.co.id

ABSTRACT

This study aims to find out: 1) Students mathematics learning outcomes before and after being taught with *collaborative learning* at class VII MTs YTPI Al-Bukhari Muslim. 2) Improving students mathematics learning outcomes through *collaborative learning* at class VII MTs YTPI Al-Bukhari Muslim. 3) The process of learning mathematics through *collaborative learning* at class VII MTs YTPI Al-Bukhari Muslim MTs. 4) Response of students taught through *collaborative learning* at class VII MTs YTPI Al-Bukhari Muslim. The research method used is classroom action research with the aim of improving the quality of classroom learning practices and improving the results of mathematics learning. Respondents in this study were seventh grade students of MTs YTPI Al-Bukhari Muslim. The types of data obtained in this study are quantitative data and qualitative data. The results of this study indicate that learning by implementing *collaborative learning* for the cycle I of 23 students on the test I learning outcomes there are 16 students (69,57%) who achieve mastery learning, while 7 more students (30,43%) have not achieve mastery learning with classical completeness of 69.57%. In the learning outcomes test II for the cycle II has reached as many as 19 students learning completeness (82,61%), while 4 students (17,39%) have not achieved mastery learning with classical completeness of 82,61% to obtain improved learning outcomes mathematics in cycle I and cycle II was 13,04%. This shows that *collaborative learning* can improve student learning outcomes and student activities and can be used as an alternative to improve student learning interest.

Keywords: *Learning Outcomes, Mastery Learning, Collaborative Learning*.

INTRODUCTION

Education occur in a long life that has not held at any given time (Usiono, 2011: 78). In Act No. 20 of the year 2003 on the National Education System states education is a planned and conscious effort to bring about an atmosphere of learning and the learning process so that learners are actively developing the potential for her to have religious energy, spiritual self-control, personality, intelligence, morals, as well as the necessary skills themselves, society, nation and state (Hasbullah, 2012: 4). Education helps in the formation of himself as a creature of the individual and social beings (Rosdiana, 2008: 24).

Education has a very important role to ensure the survival of the nation and the State, because education is a vehicle in improving and developing the quality of human resources. The school is a formal institution that is responsible for the education of students. Basically the success of education in schools as well as the success of students in learning can be known from the learning outcomes gained students. Low learning outcomes of students show gains indication towards the low performance of student learning and teacher's ability in managing a learning quality.

A new paradigm in the world of adult education, to create a learning process that takes place in schools should engage students actively in the learning (*student oriented*) and capable in growing up capabilities and potential owned by the students in learning. One way to improve

the quality of human resources in education as well as the involvement of students actively in the learning process can be done with the selection of the appropriate learning strategies, in accordance with the material being taught and the condition of the students as learners. A teacher who uses the strategy as well as a model of learning appropriately, according to the situation and condition of the students, so students will be quick to respond or understand the material presented by the teacher. This will have an effect on student learning results both from the aspect of cognitive, psychomotor or affective aspects. Conversely, if the teacher uses learning strategies as well as models that are less precise and less in accordance with the situation as well as the condition of the students, then the less usual students respond to the material being taught and it is feared the results of student learning will also experience the downturn.

Mathematics is one of the constituents in the field of science and technology (Science and Technology). The development of Science and Technology as well as rapid communication impacts of human social life. One of these reforms was to improve the quality of human resources (HR). Whereas, in order to generate quality human resources, can only be achieved through education (Susanto, 2013: 183).

One activity that is able to create quality human resources is the mathematics education, because it is a lesson which is taught at every level of education in Indonesia starting from primary school (elementary school) up to College. Expected learning mathematics can also develop the ability to learn and build individuals in General not only put emphasis on the achievement of the curriculum and delivery of purely textual.

The fact many students of Class VII MTs YTPI Al-Bukhari Muslim who consider mathematics as a field of study are the most difficult. Even so, everyone should study it because it is a means for solving problems of everyday life. As with any language, reading, and writing, math difficulties must be addressed as early as possible. Otherwise, students will face a lot of problems because almost all majors require the appropriate mathematics (Abdurrahman, 2009: 251).

The low yield learning math students can be caused by several factors. One of the researchers emphasized is the ability of teachers in methods or strategies that are less precise. Learning during this time are still using the traditional approach and the students just listen to lectures from teachers without involving students actively in the learning of mathematics. In addition the election and mastery learning methods are generally incompatible with the teaching material. Most teachers are still using conventional methods which tend to be "teacher centered" the dominance of the teacher's master classes. Teachers teach by lecturing and expect students to listen, take notes, and memorize. Last lack of students' being active in learning in the sense there is still a habit of students who have only heard and recorded. It is marked that when teachers asked or ask questions only a portion of the students are providing answers and when the teacher makes discussion groups only partially active students.

With regards to the description then it needs to be thought out way and a strategy to address the problems above. One of the efforts to improve student learning outcomes is to collaborative learning. Collaborative learning is a learning approach that emphasizes the development of meaning by students of the social process that is based on the context of learning. In this approach, students are encouraged to be able to have and do the following things that are accepting of others, help others, face challenges and work in teams (Ngalimun, 2012: 168).

Learning about square and rectangular not only the ability to find the final answer and absolute truth but also to gain agility and skilled to do one's own creativity with students working on the concept of a given.

Literature Review

1. The Results of The Study

The results of the study consist of two words, namely "results" and "study". The result is something achieved a result of posed after making the effort. While learning is the process continuously which causes any changes of the behavior, the knowledge and experiences with the environment. Learn or attempt to acquire knowledge to be applied in life is highly recommended by God Almighty in order to increase the degree of life.

The notion of learning outcomes is emphasized again by Nawawi stated that the results of the study can be interpreted as the success rate of students in learning the subject matter in school with the stated in the score obtained from the results of tests on a number of specific subject matter (Susanto, 2013: 5).

According to Oemar Hamalik which States that "the results of the study it can be seen from the occurrence of a change of perception and behavior, including the improvement of behavior". For example the gratification of needs of the community as a whole and the private (Rusman, 2013: 123).

The results of the study are the changes that happened to the students, both regarding aspects of cognitive, affective, and psychomotor learning activity as a result of.

Based on the opinions above, then it can be inferred that the results of the study are the result of students after experiencing the learning process as the impact of the use of certain methods of learning were observed and measured in the form of a change knowledge, attitudes and skills. The results of the study in General can be seen or measured test results achieved students after experiencing the learning process as the impact of the use of certain methods of learning.

Collaborative Learning a. Understanding Collaborative Learning

Suyotno say learning in collaborative learning, a greater emphasis on the construction of meaning by students of the social process that is based on the context of learning. This collaborative learning is further and in-depth than just cooperative. The basis of collaborative learning is a theory of interactional that view learning as a process of constructing meaning through social interaction (Istarani and Ridwan, 2014: 5-6).

This is in line with the opinion of the Istarani and Ridwan (2014) collaborative learning can provide opportunities for the heading on the success of the learning practices. As the technology for learning (technology for instruction), and minimize differences between individuals. Thus, the learning process in collaboration or a Collaborative Learning not just work together in one group but the emphasis more towards a learning process that involves the communication process as a whole and fair in its class.

Meanwhile, Dede Rosada suggests that collaborative learning is the learning process that is done in cooperation between teachers and their students. Teachers in senior learners are the fact who must transform their learning experience at the junior learners. The teacher should help the various difficulties faced by the junior learners similarly among students. In this context, peer teaching, peer or tutorial, which become an important part of the profit not only for the instruction but also to teach, because students who teach his friend will be more mature, while control of students taught will get help peers in the process of understanding the materials they studied. This is the nature of the collaborative learning i.e. learning that mutual aid between teachers with students, and between students with the students.

In this learning, students are encouraged to be able to have and do the following things: accept others, help others, face challenges, and work in teams. In addition students have above students could also share with students who are less-capable, medium and high in the following learning so that learning becomes active (Huda, 2013: 196).

Collaborative Learning Steps

The following collaborative learning measures (Istarani and Ridwan, 2014: 8-9):

1. The students in groups assign tasks and share learning materials.
2. All students are able to read, discuss and write the material covered.
3. Collaborative group work in synergistic identify, demonstrate, researching, analyzing, and formulate answers Categorized task or problem or problems that were found on my own.
4. After the Group agreed on a collaborative problem-solving results, each student writes its own report in full.
5. Teacher shows one random group (hereinafter strived so that all groups can turn to the fore) to conduct a group discussion results percentage the collaborative in front of the class, students in other groups observe, observe, compare the percentage results and respond. This activity was conducted for about 20-30 minutes.
6. Each student in the group doing the elaboration, inference and revisions (if needed) of the report that will be collected.
7. The report of each student toward the duties that have been collected, composed of collaborative groups.
8. The report of the students corrected, commented upon, judged, returned at the next meeting, and discussed.

METHOD

1. Approach and The Types of Research

This type of research is classroom action research i.e. research actions undertaken with the aim to improve the quality of practice learning class.

2. The Subject and Object of Research

a. Research Subject

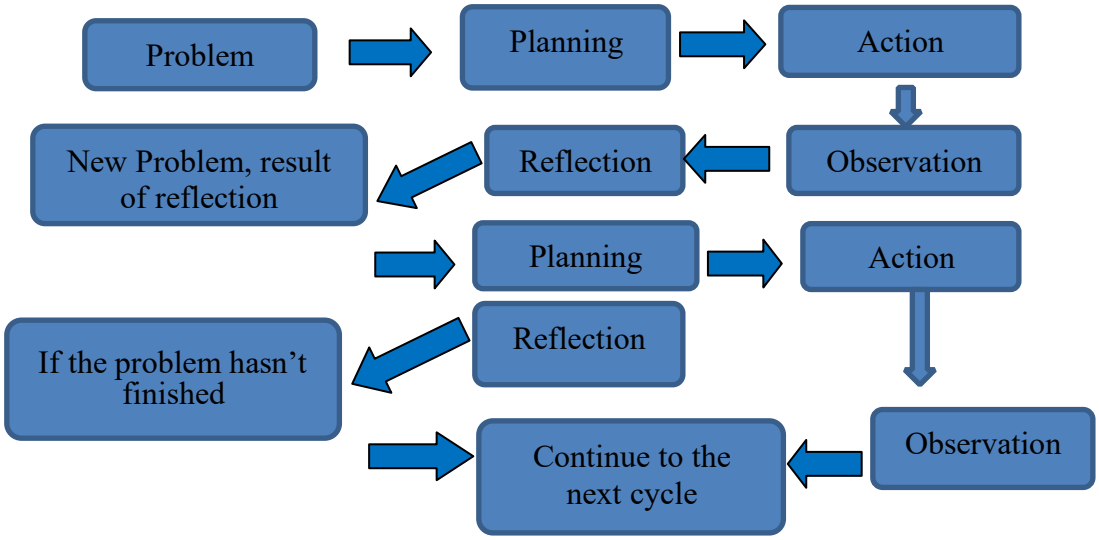
The subject of the research is grade VII MTs YTPI Al-Bukhari Muslim.

b. Object of Research

The object of the research is collaborative learning to improve student learning outcomes learning material on the square and the rectangle Class VII students MTs YTPI Al-Bukhari Muslim.

3. Procedure for Classroom Action Research

Classroom action is a research that observes a learning activities against the actions that intentionally appear and occur in a classroom together. Such action is given by the teacher or by referral from teachers conducted by the students. Implementation of class action research carried out in four stages, namely: 1) Planning; 2) Action; 3) Observations; and 4) Reflection that can be described as follows: (Sri Sumarni, 2012: 208)



Picture 1. Cycle of Classroom Action Research adapted by Sri Sumarni

a. Planning (Planning)

This step be compiled a draft Act which describes the what, why, when, where, by whom, and how the action will be performed (Industry and Saberi, 2013: 107).

The activities carried out in the planning phase are:

1) Ask permission and consent of the principal subjects of mathematics teachers in schools.
2) Consulted with teachers of Mathematics subjects about the plan of activities or actions that will be implemented during the research underway.
3) Prepare the assessment instrument, i.e. a test early (pre-test), tests the results of the study and observation of teacher activity sheets and sheets of observation of students.
4) Make Learning implementation plan (RPP).

b. Implementation (Action)

The design and implementation of learning strategies are applied as action that is implemented (Industry and Saberi, 2013: 109).

Activities performed at this stage correspond to the plan has been compiled before, i.e. as follows:

1) Learning activities through the learning scenario containing steps in learning activities using Collaborative methods.
2) Give a test to find out the results achieved by the students after the learning process takes place.

c. Observation

Observation runs concurrently with exercise. The observation is done at the time the action is running, so the observation and execution took place in the same time. The aim is to see an increase of learning in each stage of the learning cycle or (Asrul and Saberi, 2013: 110-111).

d. Reflection

Reflection aimed to examine thoroughly the actions that have been carried out, based on the data we've collected, conducted an evaluation in order to perfect the next action. Reflection covers the analysis, synthesis, and assessment of the results of observations of the actions undertaken. If there is a problem of the process of reflection is then conducted through the redenomination process next cycle be repeated activities: planning, action, and repeated observations so that problems can be resolved.

4. The instrument of Data Collection

This research uses three types of data collection techniques, i.e. observation, tests, and interviews.

a. Observation

Observation is a technique or how to collect data with the road holding observation of ongoing activities. The observation is done in the form of a mathematical field of study teacher observation and his colleague, during the process of teaching and learning take place (Sukmadinata, 2012: 220). As for his role was to observe the process of teaching and learning which is based on the observation sheets have been prepared as well as provide an assessment based on observations made. Observational results are submitted back to the researchers to see the extent to which the achievement of the process of teaching and learning.

b. Test

According to education expert test is defined as a systematic procedure and has the tools to be used to measure and assess a knowledge or mastery of a measuring object against a specific set of content and material (Hamzah, 2014: 99-100).

In this study, the test results of the study which used the shape description. The test results provided after learning collaborative learning to take place. The test results of this study aims to find out students ' improvement after being given instruction.

c. Interview

Interview i.e. interview which means a way of getting data from a problem with the way asking for the answer to the problem, ask the opinion of a question to someone about his opinion towards the solution of the problem (Hamzah, 2014: 168).

The questions are given through interviews directed to find out the difficulties experienced by students in completing the square and the rectangle. Interviews focused on the level of the test results of students as an act to improve the results of learning math students.

5. Types Of Data

Data obtained in the study there were 2 kinds, namely quantitative data and qualitative data.

a. Quantitative Data

Quantitative data is data obtained by analyzing the value of the learning outcomes associated with collaborative learning on the square and rectangular material. Data analysis the results of student learning is analyzed by finding the average value and percentage of student learning success of both individuals and classical are:

How to calculate the mean or average value using:

$$M = \sum \frac{X}{N}$$

Description:

M = mean/average.

X = total value of all students.

N = number of students.

According to him, there are criteria User the success of individual/individual classical learning, namely:

1) Absorption of Individuals

A student called Mastery Learning when the score had reached 65% in determining the absorption of individual student/individual use the following formula:

$$KB = \frac{T}{T_1} \, x \, 100 \, \%$$

Description:

KB = learning success.

T = total score obtained by students.

T_1 = total score total.

Criteria: 65% ≤ ≤ 100% = KB belongs completely.

0% ≤ ≤ 65% = KB pertained not to your satisfaction.

Personal/individual students are said to have thoroughly studied in 65% ≤ KB.

2) Absorption Of Classical

A class is called by Mastery Learning in a classroom when there have been 85% who have achieved a value ≥ 65%, is calculated with the formula of success.

$$P = \frac{X}{N} x\ 100\ \%$$

Description:

P = the percentage of the class who have reached the absorption ≥ 65%.

X = the number of students who have reached the absorbance ≥ 65%.

N = number of students in the class.

b. Qualitative Data

According to Miles and Huberman, qualitative data analysis consists of: the reduction of data, display the data and the conclusion, in which the process was conducted in a circular for the research in progress (Salim and Syahrum, 2010: 147).

a. Reduction Of Data

Data reduction is the selection process, centralizing, attention on simplification, abstract and rough data transformation that emerged from the written data in field.

b. Display Data

After the data reduction, then the next step is to display the data can be done in the form of a short blurb, chart, relations between categories. With displaying data, then it will make it easier to understand what is happening, the next work plan based on what is already understood.

Based on this research measured the learning activities of students. The measurement of student learning activities and processes carried out by using the tool of non-test observation sheet, namely the process of learning activities for students and teachers of collaborative learning.

The results of the observation sheet there are teachers and students are calculated with the formula below.

$$\text{Nilai} = \frac{score\ obtained}{the\ amount\ of\ observation}$$

Then the observation assessment criteria as follows:

Table 1: Criteria For Assessment Of The Observation

The Average of Observation	Category
1,0 – 1,5	Less Good
1,6 – 2,5	Medium
2,6 – 3,5	Good
3,6 – 4,0	Very Good

RESULTS AND DISCUSSION

A. Research Results

1. Cycle I

At this stage of the cycle I was given the test results to the students I learned to see an increase in learning outcomes through collaborative learning. After doing a learning activity in cycle I, the obtained results of student learning have not reached success of classical learning. More data can be seen in the following table.

Table 2: Description Of The Learning Outcomes Of Students in Cycle I

No	Students' Name	KKM	The result of Test I	Description
1	Abdul Haris	≥70	75	Successful
2	Aditya Pratama Syahputra	≥70	85	Successful
3	Akmal Abiyan Rangkuti	≥70	65	Unsuccessful
4	Anggi Aditya Ginting	≥70	65	Unsuccessful
5	Bayu Arvandi	≥70	75	Successful
6	Bayu Arya Kusuma	≥70	80	Successful
7	Dewi Kartika	≥70	70	Successful
8	Ilham Muharsi Nasution	≥70	70	Successful
9	M.Akbar Sinaga	≥70	65	Unsuccessful
10	M.Bagas Fathani	≥70	85	Successful
11	M.Ferdiansyah	≥70	75	Successful
12	M.Fiqih Al Eddy	≥70	60	Unsuccessful
13	M.Iqbal	≥70	75	Successful
14	M.Risky	≥70	50	Unsuccessful
15	Munisahdia Safira	≥70	75	Successful
16	Muntaz Jihan Fajir	≥70	60	Unsuccessful
17	Nabila Zulfanny	≥70	75	Successful
18	Nazla Amalia	≥70	75	Successful
19	Nurhasanah Siregar	≥70	65	Unsuccessful
20	Rika Nazwa S	≥70	80	Successful
21	Sindi Kartika Putri	≥70	80	Successful
22	Syahirah Syahda	≥70	75	Successful
23	Tito Kurnia Siregar	≥70	85	Successful
The Total			**1.665**	
The Average			**72,39**	

For a description of the success students and success criteria test results of student learning cycle I presented in the form of the following table.

Table 3: Description Of The Success Students Learning Cycle I

No	Percentage of Success	Stage of Success	The Amount of Students	Percentage of Amount Students
1	< 70%	Not Success	7	30,43%
2	≥ 70%	Success	16	69,57%
Total			23	100%

Based on the table above, the results of student learning on a cycle I pointed out that 16 students (69,57%) have achieved the learning success (value ≥ 70) that is completely against the indicators mentioned previously have been achieved by the students while 7 students (30,43%) have not yet reached the level of learning success. The average value of the grade obtained was 72,39. Classical Success level obtained in cycle I, i.e.

69,57% has not sufficient condition because of classical success ≥ 85% of students who achieve a percentage assessment of ≥ 70%. Of the 23 students there are 6 students who scored 80-89 categorized students with high abilities, 14 students acquire the value of the 65-79 that is included in the category being while 3 other students acquire 55-64 categorized with low ability. For it to cycle II where the test results of this study were used as a reference in providing action in cycle II.

2. Cycle II

After the learning process is carried out through collaborative learning, then the end of the implementation cycle II, students are given the test results of learning II that aims to see the success of the actions that have been done. As for the learning test data can be seen in the table below.

Table 4: Student Learning Outcomes Descriptions The Cycle II

No	Students' Name	KKM	The result of Test II	Description
1	Abdul Haris	≥70	90	Successful
2	Aditya Pratama Syahputra	≥70	100	Successful
3	Akmal Abiyan Rangkuti	≥70	75	Successful
4	Anggi Aditya Ginting	≥70	60	Unsuccessful
5	Bayu Arvandi	≥70	85	Successful
6	Bayu Arya Kusuma	≥70	100	Successful
7	Dewi Kartika	≥70	85	Successful
8	Ilham Muharsi Nasution	≥70	90	Successful
9	M.Akbar Sinaga	≥70	80	Successful
10	M.Bagas Fathani	≥70	100	Successful
11	M.Ferdiansyah	≥70	80	Successful
12	M.Fiqih Al Eddy	≥70	65	Unsuccessful
13	M.Iqbal	≥70	80	Successful
14	M.Risky	≥70	65	Unsuccessful
15	Munisahdia Safira	≥70	80	Successful
16	Muntaz Jihan Fajir	≥70	65	Unsuccessful
17	Nabila Zulfanny	≥70	90	Successful
18	Nazla Amalia	≥70	85	Successful
19	Nurhasanah Siregar	≥70	85	Successful
20	Rika Nazwa S	≥70	90	Successful
21	Sindi Kartika Putri	≥70	90	Successful
22	Syahirah Syahda	≥70	90	Successful
23	Tito Kurnia Siregar	≥70	100	Successful
Total			**1930**	
Average			**83,91**	

For the description of students' success and success criteria test results of student learning cycle II is presented in the following table.

Table 5: The Description Of The Mastery Student Learning Cycle II

No	Percentage of Success	Stage of Success	The Amount of Students	Percentage of Amount Students
1	< 70%	Unsuccessful	4	17,39%
2	≥ 70%	Successful	19	82,61%
Total			**23**	**100%**

From student learning outcomes tests after a given Act II shows that 19 students (82,61%) have achieved the learning success (value ≥ 70) that is completely against the indicators mentioned previously have been achieved by the students While the 4 students (17,39%) have not yet reached the level of learning success. The average value of the grade obtained was 83,91. Based on the average value also increased from 72,39 on cycle I rose to 83,91 on cycle II. This achievement has already achieved an average yield that is at least 70 students and students' success in classical at least 85%. This proves that collaborative learning on the learning results of tests I and II have elevated results learn individually and classical.

B. Discussion Of Research Results

In accordance with the diagnostic function described above, research using this diagnostic test as preliminary tests conducted as the first step of actions which will be performed next. On pre a class act that is before using collaborative learning from 23 students no one reached a classical success standardized value of ≥ 70. The average value of the result of 23 students was 51,09. There are 3 people who finished with 13,04% classical success. A class is said to be throughly studied if the class 85% who have achieved percentage of assessment results is greater than or equal to 70. Because of the success of classical yet reach ≥ 85%, then it can be said that the grade VII MTs YTPI Al

Bukhari Muslim hadn't in learning mathematics. From diagnostic tests, obtained the student's difficulties in resolving a given problem and very hard done by yourself. This is because students haven't understand well how working on the question of the square and the rectangle.

After a given action on cycle I've seen there are rising. From the test results obtained there are as many as 16 students (69,57%) which has been completed and which are not completely there are 7 students (30,43%) with an average rating of class 72,39. This means that the learning done yet and have not yet reached a maximum value of success.

By understanding the learning difficulties of students, then the cycle I done with the method of discussion. "The benefits of discussion among others are as follows: (1) The students had the opportunity to think; (2) Students received training in issuing opinions, attitudes and the aspiration freely; (3) Students learn attitudes tolerant of his friends; (4) The discussion can foster active participation among learners; (5) Discussion may develop an attitude of democrative, can appreciate the opinions of others; and (6) With discussion, lessons became relevant to the needs of the community"(Sagala, 2009: 208).

Based on the test results of learning II given the end of learning there are 19 students who finished (82,61%) that meet the values of the KKM and 4 students who have not reached the success value of the KKM i.e. 17,39%. This means the learning done already has increased and the achievement of success value of classical ≥ 85.

With maximizing collaborative learning actively, can encourage thinking styles so students improved on the results of student learning on a cycle I and cycle II. It can be seen from:

a) Increase the percentage of classical success.
b) Value added average class.
c) Increasing the number of students who obtained a value of ≥ 80.

CONCLUSION

1) Students learn math before the results applied to collaborative learning. It showed on the initial test results given to grade VII MTs YTPI Al Bukhari Muslim could not be said to be finished because such students have not yet reached the appropriate indicators.
2) The results of the students learn math after applied to collaborative learning experience increased from each cycle performed. The results of learning math cycle I gained the success of learning and experiencing an increase in success study on cycle II, so that research is not forwarded on the next cycle.
3) Increase in student learning math results seen in cycle I. Classical success experience increased from pre action. While the learning success between cycle I and cycle II has increased for the better again.
4) Application of the Learning Process Mathematics through collaborative learning is carried out in accordance with the stages of collaborative learning.
5) Student response during the process of collaborative learning experience increased activity observation sheet looks from students who have experienced an increase in cycle I and cycle II.

REFERENCES

Usiono. (2011). *Aliran-Aliran Filasafat Pendidikan Dari Idelisme Hingga Rekonstruksionalisme*, Medan: Perdana Publishing.

Hasbullah. (2012). *Dasar-Dasar Ilmu Pendidikan*, Jakarta: PT RajaGrafindo Persada.

A. Bakar, Rosdiana. (2008). *Pendidikan Suatu Pengantar.* Bandung: Citapustaka Media.

Susanto, Ahmad. (2013). *Teori Belajar dan Pembelajaran di Sekolah Dasar*. Jakarta: PT Kharisma Putra Utama.

Abdurrahman, Mulyono. (2009). *Pendidikan Bagi Anak Berkesulitan Belajar*. Jakarta: PT Rineka Cipta.

Ngalimun. (2012). *Strategi dan Model Pembelajaran*. Yogyakarta: Aswaja Pressindo.

Mudjiono dan Dimyanti. (2006). *Hakikat Belajar dan Pembelajaran*. Jakarta: Rineka Cipta.

Rusman. (2013). *Belajar dan Pembelajaran Berbasis Komputer Mengembangkan Profesionalisme Abad 2*. Bandung: Alfabeta.

M. Ridwan dan Istarani. (2014). *50 Tipe Pembelajaran Kooperatif*. Medan: CV Media Persada.

Huda, Miftahul. (2013). *Model-Model Pengajaran dan Pembelajaran Isu-Isu Metodis dan Paradigmatis*. Yogyakarta: Pustaka Pelajar.

Sumarni Sri. (2012). *Metodologi Penelitian Pendidikan*. Yogyakarta: Ihsan Madani.

Siahaan, Amiruddin dan Asrul. (2013). *Panduan Skripsi Dilengkapi dengan Panduan Penelitian Tindakan Kelas*. Medan: IAIN SU.

Sukmadinata, Nana Syaodih. (2012). *Metode Penelitian Pendidikan*. Bandung: PT Remaja Rosdakarya.

Salim dan Syahrum. (2016). *Metodologi Penelitian Kuantitatif*. Bandung: Citapustaka Media.

Hamzah, Ali. (2014). *Evaluasi Pembelajaran Matematika*. Jakarta: PT Rajagrafindo Persada.

Sagala, Syaiful. (2009). *Konsep dan Makna Pembelajaran*. Bandung: Alfabeta.