Implementation of the Chalk and Talk Strategy to Improve Mathematics Learning Outcomes for Students in Class VII.2 SMP Muhammadiyah Parepare

Sumi[1], Nurdin[2], Dian Anugrah[3]
[1,2,3]University of Muhammadiyah Enrekang , South Sulawesi, Indonesia
Email: sumicante@gmail.com

Abstract
This study aims to find out that mathematics learning outcomes can be improved through the *Chalk and Talk learning strategy* in class VII.2 students of SMP Muhammadiyah Parepare. This type of research is *classroom action* research whose implementation includes: planning (plaining), implementing actions, observing or observing, and reflecting. The subjects of this study were students of class VII.2 even semester of SMP Muhammadiyah Parepare in the academic year 2014/2015 with a total of 26 students, consisting of 14 male students and 12 female students. This research was carried out in two cycles, each meeting three times the learning process and one meeting a learning outcome test was conducted. The data collection technique used in this research is data about students' mathematics learning outcomes obtained using the test technique given at the end of each cycle, while data about student activities and teacher activities are taken using observation sheets when the learning process takes place in the classroom. class.Based on the results of research and discussion during two cycles, it can be concluded that the mathematics learning outcomes of students in class VII.2 SMP Muhammadiyah Parepare have increased from cycle I to cycle II after the implementation of the *Chalk and Talk* learning strategy . It is characterized by: (a) increasing the average mathematics learning outcomes for students in the first cycle is 42.88 % to 83.88 % in the second cycle. (b) increasing the percentage of students ' mathematics learning completeness , which is 26.9 % in cycle I to 92.3 % in cycle II or classically completed . (c) an increase in the average activity of students in participating in learning in cycle II. And (d) the increase in the average ability of teachers in managing learning from cycle I to cycle II.

Keywords: Mathematics learning outcomes, *Chalk and Talk learning strategies*

1.   INTRODUCTION

Science in the current era of globalization is very advanced and very fast. Advances in Science and Technology (IPTEK) as one of the most influential sources of learning in Indonesian education requires us to have knowledge and skills. Besides that, we must also prepare our students so that they can compete in facing all the challenges and obstacles that they will face in the future.

One of the subjects that can support the implementation of the development of intelligence and the nation's livelihood is mathematics. Therefore, mathematics is a means of thinking that forms the basis for developing the concept of self-discipline. Mathematics has an important role in developing human concepts to a systematic logic of thinking, so that mathematics is usually said to be a tool that has a large enough role in developing science and technology.

Reality in the field shows that mathematics learning outcomes still need to be improved. This is something that needs attention, especially educators. Based on the

results of an interview with one of the mathematics teachers at SMP Muhammadiyah Parepare that n the average value of students' mathematics learning outcomes on daily tests in November 2014 was 60 . This shows that the average score of students is still far from the minimum completeness criteria (KKM) set by the school, which is 65 , so it is necessary to conduct research to improve student learning outcomes. because it doesn't work as expected .

One of the factors that cause low student learning outcomes is that students think that mathematics is very difficult so that they do not have the desire to learn it, and when learning takes place there are still many students who do not pay attention to the teacher.

This fact demands the professionalism of teachers to always create ways that can activate the learning process so that the learning outcomes of mathematics obtained by students increase. It is undeniable that one of the main capitals in creating a good learning process is that a learning strategy is needed that involves the active role of students in learning activities. One of the efforts that can be done by the teacher is by applying the *Chalk and Talk learning strategy* . Where from the stages that students go through in the *Chalk and Talk learning strategy* helps students to better understand the material that has been studied because after learning is complete, the teacher repeats the material that is the subject of the problem, namely by giving several questions that are relevant to the material that has been studied. served.

Hosnan (2014: 373) said that the *Chalk and Talk Strategy* is often also called expository learning because the *Chalk and Talk Strategy* emphasizes the speaking process.

Wina Sanjaya (Khairul, 2014) argues that the *Chalk and Talk strategy* is a form of teacher-oriented learning approach. It is said so, because the teacher plays a very dominant role. Through this strategy the teacher conveys learning material in a structured manner with the hope that the subject matter presented can be mastered by students well.

Suheman (2003: 203) The *Chalk and Talk strategy* is almost the same as the lecture method in that the activity is focused on the teacher as a provider of information (lesson materials). But in the *Chalk and Talk strategy,* the teacher's dominance is greatly reduced, because they do not talk continuously. He spoke at the beginning of the lesson, explained the material and sample questions, and only at the times needed. Students not only listen and take notes but also make practice questions and ask questions if they don't understand. In the lecture method, activities are centered on the speaker and communication that occurs in the same direction from the conversation to the listener. The lecturer dominates all activities while the listener only pays attention and takes notes as necessary.

every teacher who will use this strategy must understand a number of things that must be understood (Khairul, 2014) . Among others :
1) Define the goals you want to achieve
2) Master the subject matter well
3) Identify various things that can affect the delivery process

Good terrain recognition allows teachers to anticipate various possibilities that can interfere with the process of presenting subject matter. What needs to be recognized is first, the background of the audience or students who will receive the subject matter, for example the basic abilities or learning experiences of students according to the material to be delivered, the interests and learning styles of students. Second, the condition of the room, both regarding the outside and the size of the room, lighting, seating position, and the completeness of the room itself. The success of using the *Chalk and Talk strategy* really depends on the teacher's ability to speak or deliver the subject matter.

The steps in implementing the *Chalk and Talk strategy* according to Sanjaya (2006: 182) are: *preparation* , *presentation* , *correlation* , conclude *(generalization)* , application.

(a) Preparation *(preparation)*

In this strategy, the preparatory step is a very important step. The success of the implementation of learning using the *Chalk and talk strategy* is highly dependent on the preparation steps.

Some things that must be done in the preparation step include:

i. Give positive suggestions and avoid negative suggestions

Sanjaya (2006: 182) suggests one example of a negative suggestion, namely: today's children we will learn the most difficult subject matter. Many, even almost all of your seniors have failed to master this material. Therefore, you have to be serious about studying so you don't get the same fate as your classmates.

When you hear your teacher say that before he starts the lesson, surely in your imagination, you will find it hard to learn the subject matter that will be delivered. When that feeling arises, don't expect the learning process to produce what we expect. Try to compare it with the teacher's statement stated by Sanjaya (2006: 182), namely: today's children we will study subject matter that is full of challenges and very exciting. Indeed, in the past, there were your seniors who did not master this material. I think this is because they are less serious in studying it. Therefore, I hope that you will increase your motivation to study a little so that you can master this very important subject matter optimally.

The statement above is different from the previous statement, the statement above is a statement that can encourage students to study harder. This is what it means to give positive suggestions. Students will not feel burdened, instead they will feel challenged to learn the lessons that will be delivered.

ii. Start by stating the goals to be achieved

Setting goals is very important in every learning process. By stating the goals, students will understand what they have to master and where they want to be taken. Thus, the goal is a "bind" both for teachers and for students.

(b) Presentation _

What every teacher should think about in this presentation is how the subject matter can be easily captured and understood by students. Therefore, there are several things that must be considered in implementing this step, namely: the use of language, voice intonation, and maintaining eye contact with students.

(c) Correlation

Connecting subject matter with experience or with other things that allow students to capture the connection in the structure of knowledge they already have.

(d) Summing up *(Generalization)*

The conclusion step is a very important step because through the conclusion step students will be able to take the essence of the presentation process. Concluding means also giving confidence to students about the truth of an explanation.

(e) Apply (*Application*)

Through this step the teacher will be able to collect information about the mastery and understanding of the subject matter by students. Techniques that are usually done in this step include: first, by making tasks that are relevant to the material that has been presented. Second, by giving tests that are in accordance with the subject matter that has been presented.

a. Advantages and Disadvantages of *Chalk and Talk Learning Strategy*

The *Chalk and Talk* learning strategy is a learning strategy that is widely and often used. This is because this strategy has several advantages according to Sanjaya (2006: 190) including:

1) With this learning strategy , the teacher can control the sequence and extent of learning learning,.
2) It is considered very effective if the subject matter which must be mastered students are quite broad.
3) Can be used for the number of students and large class sizes.
    This strategy also has weaknesses according to Sanjaya (2006: 190), including:
1) This learning strategy is only possible for students who have the ability to hear and listen well.
2) Because more strategies are given through lectures, it will be difficult to develop students' critical thinking skills.
3) The success of this strategy really depends on what the teacher has, such as preparation, knowledge, and self-confidence.

Ausubel (Rudi, 2012) so that process study participant educate produce something meaningful, students don't have to find it themselves everything. Obtaining information is an important learning goal and in certain cases can lead teachers to convey information to students. In this case the teacher is responsible answer to organize and present what students need to learn, while the role of students here is to master what the teacher says. Learning is said to be meaningful what Ausubel put forward is if the information to be learned by students is arranged according to the cognitive structure of the student so that the student is able to relate the new information to the cognitive structure he has.

One of the efforts that a teacher can do in improving learning, especially mathematics, is to apply the *Chalk and Talk learning strategy* . To implement the learning strategy, the lecture method can be used as well as the question and answer method or even discussion by utilizing available resources, including providing and using learning media, so as to be able to   increase results study.

Some of the descriptions that have been described above, the *Chalk and Talk learning strategy* can improve mathematics learning outcomes for class VII.2 students of SMP Muhammadiyah Parepare.

Table 1 *Chalk and Talk* Learning Strategy Syntax

No	Phase	Teacher's Role
1.	Delivering goals and motivating students	The teacher conveys the lesson objectives to be achieved in the lesson activities and emphasizes the importance of the topics to be studied and motivates students to learn.
2.	Presenting information	The teacher presents information or material to students by means of demonstrations or through reading materials.
3.	Correlation	The teacher connects the subject matter with the surrounding environment.
4.	Conclude	The teacher concludes the essence of the subject matter that has been taught.
5	Evaluation	The teacher evaluates the learning outcomes about the material that has been studied. Techniques commonly used in this step include: creating tasks that are relevant to the material that has been presented. And by giving a test that is in accordance with the

subject matter that has been presented.

Framework

The framework of thought in this study is in this study learning outcomes students' mathematics is still low. Therefore, as an alternative solution, a *Chalk and Talk learning strategy will be applied* so that learning is better understood so that student learning outcomes also increase.

The flow of the framework in this research is as follows:

```
┌──────────┐   ┌────────────────┐   ┌────────┐
│ Peserta  │──▶│ Rendahnya hasil │◀──│  Guru  │
│ didik    │   │ Belajar Matematika│   │        │
└──────────┘   └────────────────┘   └────────┘
                        │
                        ▼
              ┌────────────────────┐
              │ Strategi Pembelajaran│
              │   Chalk and Talk     │
              └────────────────────┘
                        │
                        ▼
                   ┌────────┐
                   │  PTK   │
                   └────────┘
                        │
                        ▼
              ┌────────────────────┐
              │ Meningkatkan hasil  │
              │ belajar matematika  │
              └────────────────────┘
```

Figure 1 CAR framework flow

Therefore, the authors are interested in raising the title "Improving mathematics learning outcomes through *Chalk and Talk learning strategies* for students of class VII.2 SMP Muhammadiyah Parepare".

2.   RESEARCH METHODS

a.   Types of research

This type of research is classroom action research (classroom action research *) whose implementation* includes: planning (*othering) , implementing actions* , observing or observing, and reflecting.

b.   Research subject

The subject of this research is class VII.2 students in the even semester of SMP Muhammadiyah Parepare in the 2014/2015 academic year with a total of 26 students , consisting of 14 male students and 12 female students.

c.   Factors Understood

Factors examined in this study is as follows:

1. Student factor namely by looking at the ability of students to solve the problems given by the teacher.
2. Factor teacher, that is with see how teacher implement the *Chalk and Talk* learning strategy in
learning.

   Yield Factor, i.e. with see the level of success of students with the implementation of the *Chalk and Talk* learning strategy to achieve the learning objectives obtained from the test at the end.

d. Final Operational Definition

Some terms that need to be limited in order to avoid misunderstandings in this study are as follows:

1. Mathematics learning outcomes are a measure that states how far the success of learning mathematics is achieved by students with learning experiences as measured by tests at the end of each cycle.
2. *Chalk and Talk learning* strategy is a learning strategy that emphasizes the process of delivering material verbally from a teacher to a group of students with the intention that students can master the subject matter optimally.

e. Research procedure

This classroom action research procedure can be described as follows :
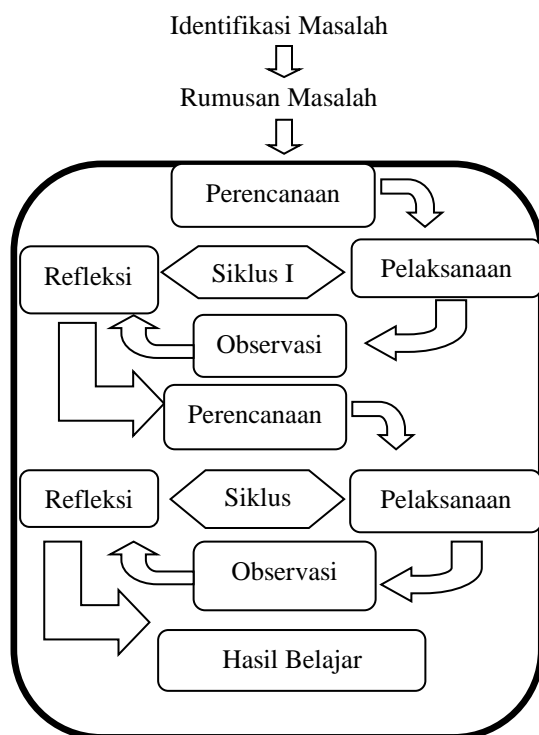
Figure 2 Classroom Action Research Implementation Scheme according to Kemmis and Taggart (Arikunto, 2008: 27)

f. Research Instruments

Instrument which used in collection The data in this study are as follows:

1. The observation sheet is used to assess the management of learning carried out by the teacher in the classroom and the activities of students during the learning process. The activities of students who will be observed in the learning process are students who are present during the learning process, students pay attention to the teacher during learning, answer questions asked by the teacher, dare to ask questions about material that have not been understood, dare to work on questions in front of the class, are

active deliver subject matter, and perform activities that are not in accordance with learning.

2. Learning outcomes tests will be given to students to measure the level of success of students on the material provided and to measure the level of students' abilities.

a. Data collection technique

Data collection techniques in this study are data about students' mathematics learning outcomes obtained by using the test technique given at the end of each cycle, data about student activities and teacher activities during the learning process obtained using observation techniques.

b. Data analysis technique

The data collected are in the form of mathematics learning outcomes data, participant activity data   students and teacher activity data. These three data can be analyzed using descriptive statistical analysis techniques. This descriptive statistical analysis technique was used to calculate the average score and percentage of each data.

1.   Mathematics Learning Outcomes Data

The success rate of students can be known from the list of scores for learning mathematics learners . The criteria used to measure students' mathematics learning outcomes are the categorization of a five-scale assessment by Nurkancana (Mas'ud Badolo, 201 4:16) as follows:

Categorization Ability 90% - 100% categorized as "very high"

Categorization Ability 80% - 89% categorized as "high"

Categorization Ability 65% -79% categorized as "medium"

Categorization Ability 55% - 64% categorized as "low"

Categorization Ability 0% - 54% categorized as "very low"

Mastery learning can be interpreted as an approach in learning that requires students to completely master all competency standards, basic competencies and indicators that have been set.

Student learning outcomes are also directed at achieving individual learning outcomes. The criteria for a student to be said to have completed learning if he has a score of at least 65 in accordance with the KKM. While classical completeness is achieved if 85% of students in the class reach a value of 65. The percentage figure for student learning outcomes can be obtained using the following formula:

$$P = \frac{f}{N} \times 100$$

Description: P = Percentage number

f = Number of students who have finished studying

N = Number of students

Table 2 Categorization of Completeness Standards for Mathematics Learning Outcomes for Class VII.2 Students of SMP Muhammadiyah Parepare

Score	Categorization of Learning Completeness
0×65	Not Complete
65×100	Complete

2. Student Activity Observation Data

Observer assessment data for student activities during learning were analyzed using the formula:

$$PTi = \frac{\sum Ti}{\sum T} \, X\,100\%$$

With:

PTi = Percentage of students who do certain activities for each meeting.

$\sum Ti$ =The number of students who carry out certain activities each meeting.

$\sum T$ = Number of students attending   on every meeting.

The interpretation of learning activities is carried out as stated by Arikunto (2007: 251) as follows:

Table 3 Interpretation of Learning Activities

Percentage of Learning Activities	Category
0% value < 20%	Less once
20% value < 40%	Not enough
40% value < 60%	Enough
60% value < 80%	Well
80% value 100%	Very well

Sumber: Arikunto, dkk (2007: 251)

3. Data Analysis of Teacher Ability to Manage Learning

Data from observer research on the ability of teachers to manage learning was analyzed by calculating the average value of each aspect observed in managing learning from many meetings. The criteria for the level of teacher ability in Learning Management (PB) are as follows.

Table 4 Criteria for Teacher Ability Level in Learning Management (PB)

Score	Criteria
0.00 PB 1.00	Not good
1.00 PB 2.00	Not enough
2.00 PB 3.00	Enough
3.00 PB 4.00	Well
PB = 4.00	Very good

Source: Nurdin (Rusdi, 2009: 114)

c. Success Indicator

This research is said to be successful if:

1. Increased students' mathematics learning outcomes after the implementation of the *Chalk and Talk learning strategy* from cycle I to the next cycle.
2. Increasing the percentage of students' learning completeness individually from cycle I to the next cycle . Where it is said to be completed individually if it has met the minimum completeness criteria (KKM) from the school, which is 65.
3. Increased learning activities of students in the learning process from cycle I to the next cycle .
4. Increasing the ability of teachers to manage learning from cycle I to the next cycle.

3. RESEARCH RESULTS AND DISCUSSION

A. Research result

1. The results of the descriptive analysis of students in cycle I

a. Student learning outcomes in cycle I

Table 4 Statistics of Students' Mathematics Learning Outcomes in Cycle I

Statistics	Statistical Value
Subject	26
Average Score	42.88
median	35.50
Standard Deviation	21.64
Variance	468.50
Score Range	61
Lowest Score	12
Highest Score	73
Ideal Score	100

Table 5 Distribution of Frequency and Percentage of Students' Mathematics Learning Outcomes Scores in Cycle I

Mastery Level	Score	Category	Frequency	%tase
0% - 54 %	0- 5 4	Very low	14	53.8
55 % - 64 %	5 5 - 64	Low	5	19.2
65 % - 79 %	65 - 79	Currently	7	26.9
80 % - 8 9 %	80 -8 9	Tall	0	0
90 % -100%	90 -100	very high	0	0
	Amount		26	100

The results of data analysis in Table 4.1 show the average score of students ' learning abilities in the first cycle, which is 42.88 . If the average score of students' mathematics learning outcomes is entered in Table 4.2 , the average score of students is in the very low category. Furthermore, if the students' mathematics learning outcomes in the first cycle were analyzed by the percentage of students' mathematics learning completeness, it can be seen in Table 6 below:

Table 6 Distribution of Frequency and Percentage of Students' Mathematics Learning Completeness in Cycle I

Level of Completeness	Score interval	Category	Frequency	%tase
65%-100%	65 -100	Complete	7	26.9
0% - 64%	0 - 64	Not finished	19	73.1
	Amount		26	100

b. Student learning outcomes cycle II

Descriptive statistical analysis of students' mathematics learning outcomes based on test results in cycle II can be seen in Table 7 below:

Table 7 Statistics of Students' Mathematics Learning Outcomes Scores in Cycle II

Statistics	Statistical Value
Subject	26
Average Score	83.88
median	85.50
Standard Deviation	10.76
Variance	115.94
Score Range	38
Lowest Score	60
Highest Score	98
Ideal Score	100

**Table 8 Distribution of Frequency and Percentage of Students' Mathematics Learning Outcomes in Cycle II**

Mastery Level	Score	Category	Frequency	%tase
0% - 54 %	0- 5 4	Very low	0	0
55 % - 64 %	5 5 - 64	Low	2	7.7
65 % - 79 %	65 - 79	Currently	4	15.4
80 % - 8 9 %	80 -8 9	Tall	10	38.5
90 % -100%	90 -100	very high	10	38.5
		Amount	26	100

Furthermore, if the students' mathematics learning outcomes in cycle II were analyzed by the percentage of students' mathematics learning completeness, it can be seen in Table 7 below:

Table 7 Distribution of Frequency and Percentage of Students' Mathematics Learning Completeness in Cycle II

Level of Completeness	Score interval	Category	Frequency	%tase
65%-100%	65 -100	Complete	24	92.3
0% - 64%	0 - 64	Not finished	2	7.7
	Amount		26	100

The improvement of students' mathematics learning outcomes from cycle I to cycle II will be illustrated by Diagram 4.1 below:
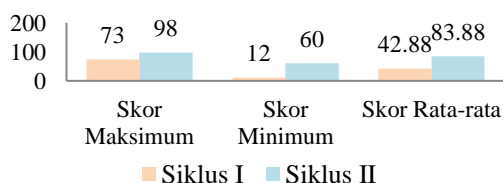
Diagram 1 Student Learning Outcomes in Cycle I and Cycle II

Completeness of learning mathematics of students from cycle I to cycle II will be illustrated in the following diagram 4.2:
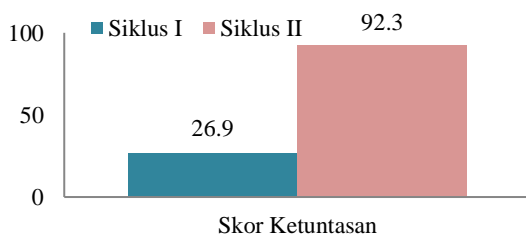
Diagram 2 Percentage of Students' Mathematics Learning Completeness Cycle I to Cycle II

2. **Description of Observation Results**

a. **Result of Student Activity Observation Analysis**

Types of student activities that are in accordance with learning are:

Part A, students who are present during the learning process.

Part B, Students who pay attention to the teacher when learning.

Part C, Students answer the questions asked by the teacher.

Part D, Students who dare to ask about material that has not been understood.

Part E, Students who work on questions in front of the class.

The types of student activities that are not in accordance with the learning process are:
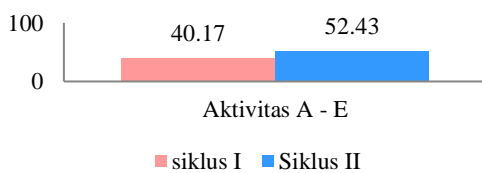
Part F, Students do other activities outside of assignments, for example not paying attention to the teacher's explanation or doing activities that are not related to the learning process (sleeping, sleeping, chatting, daydreaming).

The comparison of the percentage of student activity in each cycle I and cycle II can be seen in Diagram 4.3 below:
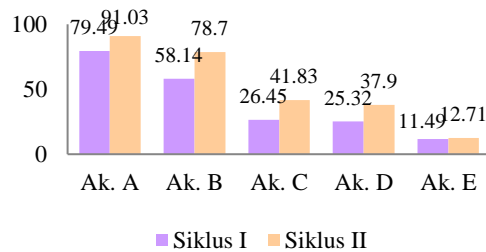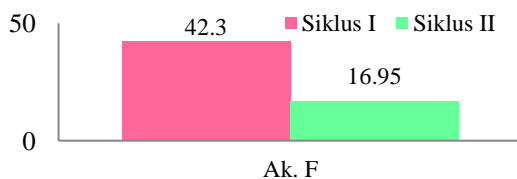

Diagram 3 Comparison of the Percentage of Student Activities in accordance with Cycle I and Cycle II Learning (Activities A – E)

The following is a diagram that shows a comparison of student activities in cycle I and cycle II during the mathematics learning process through the *Chalk and Talk* learning strategy .

Diagram 4 Comparison of Appropriate Student Activity Averages in Cycle I and Cycle II (AE Activities)

Furthermore, to determine the decrease in student activity that is not in accordance with learning (activity F) from cycle I to cycle II, it can be seen in Diagram 4.5 below:


Diagram 5 Comparison of the Percentage of Student Activities that are not in accordance with the Learning Cycle I and Cycle II (Activity F)

The conclusion that can be drawn from diagram 4.5 above is that the percentage of students doing other activities outside of assignments, for example not paying attention to the teacher's explanation or carrying out activities that are not related to the learning process (sleeping, sleeping, chatting, daydreaming) decreased by 42.3% in the first cycle to 16.95% in the second cycle. So that the success indicator in sequence number three is met.

b. **Results of Observation Analysis of Teacher Ability to Manage Learning through** *Chalk and Talk Learning Strategy*

The comparison of the average ability of teachers to manage learning cycle I and cycle II can be seen in Diagram 4.6 below:
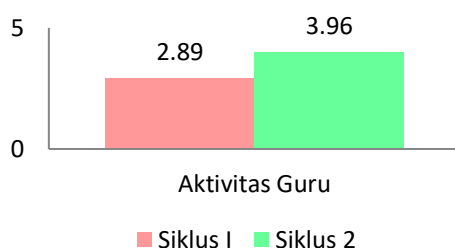
Diagram 6 Comparison of the average ability of teachers to manage learning cycle I and cycle II

The conclusion that can be drawn from diagram 4.6 above is that the average ability of teachers in managing learning has increased from 2.89 in the first cycle to 3.96 in the second cycle. So that the indicators of success in sequence number four are met.

Furthermore, if the average teacher's ability to manage learning is based on the average value conversion , then the teacher's ability to manage learning through the *Chalk and Talk learning strategy* in cycle I and cycle II is in the "good" category.

b. **Discussion**

In this discussion section, several things will be stated about the results of the research, which include: the achievement of the research objectives, the obstacles encountered and, the weaknesses of the research.

The achievement of the objectives that will be presented in this discussion is the achievement of the objectives of this research, namely the improvement of mathematics learning outcomes for students of class VII.2 SMP Muhammadiyah Parepare which is the subject of research by applying the implementation of *Chalk and Talk* learning strategies in the learning process in the classroom.

The obstacles that will be disclosed in this discussion section are the obstacles faced during the mathematics learning process through the implementation of the *Chalk and Talk* learning strategy . In this study many obstacles faced by researchers, therefore it is necessary to take steps to minimize or eliminate these obstacles.

The weaknesses of the research that will be stated in this section of the discussion are the weaknesses due to the limitations of the research, especially in the research process. In addition, it will also reveal the reasons for the emergence of these weaknesses and alternative solutions that can be taken to minimize these weaknesses.\

4. CONCLUSIONS AND RECOMMENDATIONS

a. Conclusion

The conclusion that can be drawn based on the facts found in the results of the research and discussion that has been described in the previous chapter is that the mathematics learning outcomes of class VII.2 students of SMP Muhammadiyah Parepare have increased after the implementation of the *Chalk and Talk learning strategy* . It is characterized by:

1. increase in the average mathematics learning outcomes for students in the first cycle is 42.88 to 83.88. in cycle II.
2. Increasing the percentage of students ' mathematics learning completeness is 26.9 % in the first cycle increased to 92.3 % in cycle II.
3. increase in the average activity of students in participating in learning from cycle I to cycle II.
4. Increased average ability
teacher in managing learning from cycle I to cycle II.

b. Suggestion

Based on the results obtained in this study, the researcher proposes suggestions that are highly expected to mathematics teachers so that the *Chalk and Talk learning strategy is* used as an alternative in the mathematics learning process so that students' mathematics learning outcomes can be improved.

REFERENCES

Afrhyelia, Kun. 2013. *Effectiveness of Realistic Learning* . Available at http://aprielkun.blogspot.com/2013/01/effectiveness-approach-realistic.html . Accessed, February 2, 2015

Alexandro. 2013. *Understanding and Learning Outcomes of Mathematics according to Experts* available at http://Notealexandro.blogspot.com/2013/11/pengertian-dan-hasil-belajar-matematika.html accessed on 26-03-2015

Arikunto, Suharsimi. 2008. *Classroom action research* . Jakarta: PT. Bumi scrip

Arikunto. 2007. *Classroom Action Research* . Jakarta: Earth Literacy

Chandra. 2013. *Application of Pavlov's Learning Theory through Direct Learning Model Using Media in class IX students of SMP Negeri 2 Patampanua* . Thesis: UMPAR

Darniati. 2013. *Improving Learning Outcomes of Tribal Algebra Factorization Through Campus Bowling Type Active Learning Strategies for Class VIII.1 Students of SMP Negeri 2 Lasinrang, Pinrang Regency* . Thesis: UMPAR

Hamzah, Ali, et al. 2014. *Planning and Strategy for Mathematics Learning* . Jakarta: PT Rajagrafindo persada

Hamza. 2007. *Learning Model* . Jakarta: Earth Literacy

Hosnan. 2014. *Contextual Scientific Approach in 21st Century Learning* . Bogor: Ghalia Indonesia

Khairul. 2014. *Expository Learning Strategy* . Available at http://thatiscallphysics.blogspot.com/2014/04/strategipbelijariekspositori.html accessed on 16 January 2015

Mas'ud, Badolo. 2014. *Guidelines and Techniques for Thesis Writing* . Parepare: Umpar

Muchlisin. 2012. *Expository Learning Method* . Available at (http://www.kajiandunia.com/2012/12/methodlearningekspositori.html) accessed on January 16, 2015

Purwanto. 2009. *Evaluation of Learning Outcomes* . Yogyakarta: Student Library.

Rahman, Abdul. 2010. *Improving Mathematics Learning Outcomes through the Missouri Mathematich Project learning model for class VIII.8 students of SMP Negeri 2 Parepare.* Thesis: FKIP major
Mathematics

Rahmawati. 2014. *Improving Mathematics Learning Outcomes Through the Adaptive Help Seeking Model for students of class VIII $_5$ SMP Negeri 9 Parepare* . Thesis: FKIP majoring in Mathematics

Ridiawan. 2013. *Expository Learning Strategy* . Available at (http://ridiawan.blogspot.com/2013/05/strategipembeljariekspositori.html) accessed on 16 January 2015

Rismayanti. 2013. *Implementation of Quick On The Draw Learning Strategy in an Effort to Improve Learning Outcomes of Factorization of Algebra for Class VIII Students. $_8$ SMP Negeri 3 Parepare* . Thesis: UMPAR

Riswandi. 2014. *Improving Teaching and Learning Outcomes Through Learning With the Method of Giving Assignments in the Form of Superitem to Class VII $_2$ MTs Negeri Parepare Students* . Thesis: UMPAR

Rudi. 2012. *Expository Learning Strategy* . Available at (http://rudisiswoyoalikir.blogspot.com/2012/10/strategipbeljari-ekspositori.html) accessed on 16 January 2015

Rusdi, Andi. 2009. *Development of Realistic Mathematics Learning Tools for Statistics in Class IX of SMP Negeri 3 Parepare* . Thesis: UNM.

Sani, Abdullah, Ridwan. 2013. *Learning Innovation* . Jakarta: Earth Literacy

Sanjaya, Vienna. 2006. *Learning Strategy Oriented Educational Process Standards,* Jakarta: Kencana Prenada Media

Sihotang, Kasdin. 1997. *Problem Posing
Forming Whole Man* . Surabaya: Echo Cliping Service

Suherman, Erman, et al. 2003. *Revised Edition of Contemporary Mathematics Learning Strategy* . Bandung: Indonesian University of Education.

Susanto, Ahmad. 2013. *Theory of Learning and Learning in elementary schools* . Jakarta: PT Fajar Interpratama Mandiri

Ubaydillah. 2013. *The study of The Nature of Mathematics Learning Outcomes* is available at http://rujukanskripsi.blogspot.com/2013/06/kajianteorihakikathasil-belajar.html accessed on 12 March 2015

Uno, B. Hamzah. 2007. *Learning Model Creating a Creative and Effective Teaching and Learning Process.* Gorontalo: Earth Literacy.

Yesinta. 2013. *Understanding Mathematics According to Experts* available at http://tematikitucepat.wordpresscom/2013/11/22/pengertianmatematika-menurut-para-ahli.html accessed on April 19, 2015