Achievement and Improvement of the Ability of Mathematical Understanding and Self Confidence of 5th Grade Students at Cooperative Learning Type Think Pair Share

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Abstract. The research aims to obtain an overview of the achievement and improvement of the ability of mathematical understanding and self-confidence of students in learning with the cooperative model type think pair share and direct learning. The method in this research is quasi experiment with pretest-posttest non equivalent groups design. The subject of this research was the fifth grade students of one of the elementary schools in Cidahu, Sukabumi. The result of the research, it can be concluded that based on the average (1) there are differences in the achievement and the increase of mathematical comprehension ability between students who get learning with the cooperative model type think pair share and students who get direct learning (2) There are differences in achievement and the increase of self confidence between students who get learning with the cooperative model type think pair share and students who get direct learning.

Keywords: Cooperative learning, think pair share, direct learning, mathematical understanding ability, self confidence.

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INTRODUCTION

Mathematics is a subject that has been introduced since the age of toddlers or early on, such as parents asking their children to sing "satu-satu". Indirectly parents introduce the concept of numbers to their children through singing activities. Mathematics is always applied in everyday life, for example in buying and selling activities, bus queues leaving the terminal, in building houses and many other uses of mathematics in everyday life.

Understanding and being able to use mathematics in everyday life and in the world of work is very important. This is contained in RI Law No. 20 Years 2003 concerning the National Education System Article 37 which states that mathematics is a compulsory subject for students at the primary and secondary education levels. According to Wahyudin (2012) six principles for school mathematics highlight themes: (1) justice. Excellence in quality in mathematics education demands fairness, high expectations, and strong support for all students; (2) curriculum. A curriculum is more than just a set of activities, it must be coherent, focus on essential mathematics, and be well articulated from each level of the school; (3) teaching. Effective mathematics teaching requires understanding what students know and need to learn and then supporting them to learn it well; (4) study. Students must study mathematics with understanding, actively building new knowledge from previous knowledge and experience; (5) assessments. Assessment should support the learning of important mathematics and provide useful information for students and teachers; (6) technology. Technology influences the mathematics taught and enhances student learning. In the six principles raised by Wahyudin (2012) mentions the word understanding in several of his statements. Understanding is a translation of the term understanding which can be interpreted as absorbing the meaning of a material being studied. Students can be said to understand if these students are able to absorb the material they are studying well.

The ability to understand mathematics has seven aspects, namely interpreting, giving examples, classifying, summarizing, guessing, comparing, and explaining. As explained by Alfeld (in Sariningsih, 2014), that understanding mathematics can be done through the following: (a) Explaining mathematical concepts and facts in the form of simpler concepts and facts, (b) Easily able to make connections logical relationship between facts and concepts, (c) When encountering a new concept (either within or outside the mathematical concept) then he can recognize its

relationship with the concept he already understands, (d) Can identify that mathematical principles are related with the world of work.

Based on Bloom's taxonomy, Sumarmo (in Sumaryati and Sumarmo, 2013) identifies mathematical understanding abilities in three types of cognitive behavior, namely changing from one mathematical form to another, interpreting a concept, principle, and mathematical expression, and interpolating and extrapolating a trend. data.

According to Anderson et al. (in Oktariani, 2016), students are said to have comprehension skills if these students are able to construct meaning from messages that arise in teaching such as oral, written, and graphic communications. Students are said to understand a mathematical concept (problem), among other things, when they build relationships between the new knowledge acquired and previous knowledge. Understanding of a problem is part of problem solving.

However, the findings of research conducted by Sidik (2014) concerning the analysis of thinking processes in the mathematical understanding of elementary students in one school show that there are still some difficulties faced by some students in obtaining mathematical understanding. In general, students have difficulty in understanding the questions.

According to Wahyudin (2013) that the ability to understand is the main requirement in the process of learning mathematics. Understanding is the basis for achieving the expected abilities in mathematics. A learner who understands mathematical concepts will easily accept new material and solve math problems. Students will strengthen their mathematical understanding skills through experiences in solving mathematical problems. According to Sariningsih (2014) The ability to understand mathematics is important for students to have, because this ability is a prerequisite for a person to have mathematical problem solving abilities, when a person learns mathematics in order to be able/able to understand concepts, then that's when that person begins to pioneer thinking abilities. other mathematics, one of which is the ability to solve mathematical problems. This is in accordance with the opinion of Sumarmo (2003) which states that mathematical understanding is important for students because it is needed to solve mathematical problems, problems in other disciplines, and problems in everyday life, which is the vision of developing mathematics learning to meet current needs. And mathematical understanding is absolutely understood by students because it is the main requirement for fulfilling other abilities, namely representation (Tandilling, 2012).

In addition to developing cognitive aspects, learning mathematics also aims to develop affective aspects, one of which is self-confidence. According to Yates (in Yeni, 2017) Self-confidence is very important for students to be successful in learning mathematics. Confidence will strengthen the motivation to achieve success, because the higher the confidence in one's own abilities, the stronger the enthusiasm to complete the work. His will to achieve what is the target of the task will also be stronger. It means that he also has a strong commitment to work well, so that the completion of his work goes perfectly. Compared to other people, usually this kind of person will also finish his work more quickly and more easily accept views that are different from his own point of view. People who are always suspicious or unable to accept opinions that are different from theirs are usually worried that their opinions will be worse than those of others.

According to the Ministry of Education and Culture in 2006 (in Budiyanto & Rohaeti, 2014) the goals of learning mathematics in the national education goals in the affective aspect are healthy, independent, and self-confident; tolerant, socially sensitive, democratic and responsible, appreciating the usefulness of mathematics; attitude of curiosity, concern, and interest in learning mathematics; as well as a tenacious and confident attitude. The goal of developing the 2013 curriculum put forward by Mulyasa (2013) is that through the development of the 2013 curriculum, this nation forms productive, creative, innovative, affective people; through the strengthening of integrated attitudes, skills, and knowledge. In the 2013 curriculum at the elementary school level, there are 6 characters that must be owned by students after completing their education at elementary school. These characters include honesty, discipline, responsibility, courtesy, caring, and self-confidence.

According to Hanula, et.al. 2004 (in Mustika. R, 2018) suggested that there is a strong relationship between self-confidence and students' mathematical abilities. This is in line with

what Hendriana, H. (2014). stated that self-confidence is something important in building understanding. that confidence comes from himself, as well as believes that he has a good understanding

To build understanding and shape student character as described in the previous paragraph, it is necessary to have innovative and varied learning. Cooperative learning is a learning model in which students work in small groups and help each other. Students in cooperative learning are grouped heterogeneously, seen from different levels of ability, and if possible come from different races, cultures, ethnicities. In cooperative learning students discuss and exchange opinions with others, as well as complement each other on the deficiencies of the knowledge they have. This was stated by Slavin (in Rosmanita, 2014) as follows:

> *cooperative learning refers to a variety of teaching methods in which students work in small groups to help one another learn academic content. In cooperative classroom, students are expected to help each other, to discuss and argue with each other, to assess each other's current knowledge and fill in gaps each other's understanding*

Jarolimek & Parker (in Isjoni, 2012) said the advantages gained in cooperative learning are: 1) Positive interdependence, 2) Recognition in response to individual differences, 3) Students are involved in class planning and management, 4) Relaxed class atmosphere and fun, 5) The establishment of a warm and friendly relationship between students and teachers, and 6) having the opportunity to express pleasant emotional experiences. It can be said that cooperative learning is group learning and fun that trains thinking skills as well as social skills.

To improve students' mathematical understanding abilities and self-confidence, a learning design is needed. Of the various alternative strategies that can be carried out, the author has two alternative choices, namely by implementing Think Pair Share (TPS) cooperative learning or with the Problem Based Learning (PBL) model. However, the authors prefer and are interested in using Think Pair Share (TPS) cooperative learning because of the advantages of this model, namely 1) There is interaction between students through discussion to solve problems which will improve students' social skills. 2) Both students who are smart and students who are less intelligent both benefit from cooperative learning activities. 3) It is possible for students to more easily understand concepts and draw conclusions. 4) Provide opportunities for students to develop skills in asking questions, discussing, and developing leadership talents. If there are advantages there must be weaknesses, cooperative learning type Think Pair Share (TPS) has a weakness, namely the grouping of students requires different seats and takes time.

Based on the background of the problems described above, the formulation proposed in this research to obtain an overview of the effect of Think Pair Share (TPS) Cooperative learning on students' mathematical understanding abilities and self-confidence is as follows. (1) Are there differences in the achievement of mathematical understanding abilities between students who receive Think Pair Share (TPS) cooperative learning and those who receive direct learning. (2) Is there a difference in self-confidence achievement between students who receive Think Pair Share (TPS) cooperative learning and those who receive direct learning. (3) Is there a difference in increasing the ability of mathematical understanding between students who receive Think Pair Share (TPS) cooperative learning and those who receive direct learning. (4) Is there a difference in increasing self-confidence between students who receive Think Pair Share (TPS) cooperative learning and those who receive direct learning.

Based on the formulation of the problem described above, the research hypothesis is as follows (1) There are differences in the achievement of mathematical understanding abilities between students who receive Think Pair Share (TPS) cooperative learning and those who receive direct learning. (2) There are differences in self-confidence achievement between students who receive Think Pair Share (TPS) cooperative learning and those who receive direct learning. (3) There is a difference in increasing the ability of mathematical understanding between students who receive Think Pair Share (TPS) cooperative learning and those who receive direct learning. (4) There is a difference in increasing self-confidence between students who receive Think Pair Share (TPS) cooperative learning and those who receive direct learning.

METHOD

This research used a quantitative approach with quasi-experimental research methods. This research aims to determine the effect of Think Pair Share (TPS) cooperative learning on students' mathematical understanding abilities and self-confidence. In this research, researchers did not randomly select subjects, but researchers used classes that had been formed. Researchers used two groups of participants, namely the experimental group and the control group. The experimental group was given treatment in the form of Think Pair Share (TPS) cooperative learning and the control group was given treatment in the form of direct learning. In other words, an experimental research can in principle be defined as a systematic method to build causal-effect relationships. The experimental design in this study is the nonequivalent control group design. The two groups both received the pretest and posttest. The research design is illustrated as follows:

Experimental group	:	O	X_1	O
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Control group	:	O	X_2	O

O : Pretest or posttest students' mathematical understanding abilities
X1 : TPS type Cooperative Learning
X2 : Direct learning
--- : Subjects are not randomly grouped

The subjects in this study were fifth grade students at an elementary school in Sukabumi Regency. With a total of 60 students consisting of 2 classes with 30 students each. This research instrument is arranged based on the indicators of each variable. To get the validity of the construct is done through definition and literature study. Instruments for each indicator are prepared in the following steps: 1) making a grid based on variable indicators, 2) compiling statement items according to variable indicators, 3) conducting rational analysis to see conformity with indicators and accuracy in compiling question of the aspect being measured. In the preparation of the statement items refer to the research instrument grid.

The research instruments that have been prepared must be tried out beforehand. The trial implementation is carried out to find out the weaknesses and deficiencies that may occur, both in terms of editorial, available alternative answers, as well as in the statements and answers. Testing was carried out for analysis of the instrument so that the contribution of the statement items to the indicators that had been set for each variable was known. Furthermore, to obtain valid and reliable statement items, validity and reliability tests were carried out.

Testing the validity of the instrument can be determined through calculations using the Pearson Product Moment formula for values between variables X and variable Y. As expressed by Sugiyono (in Heryanto, 2014):

$$rcount = \frac{n(\sum XY) - (\sum X)(\sum Y)}{[n.\sum X2-(\sum X)2]\ (n.\sum Y2-(\sum Y)2]}$$

Description :
N = Number of respondents
∑XY = Total multiplication of X and Y
∑X = Total Score of Each Item
∑Y = Total Score
∑X2 = Total Score X squared
∑Y2 = Total Score Y squared

Then calculated by t test or significance test. This test is to determine whether the X variable is significant to the Y variable. This significance test uses the formula proposed by Arikunto (in Heryanto, 2014).

$$tcount = rn\text{-}21\text{-}r2$$

Description :

r = Correlation Coefficient
n = Number of Respondents
t = Significance Test

Distribution (t table) for α = 0.05 and degrees of freedom (dk = n -2), with a decision if tcount > ttable table means valid, otherwise if tcount< ttable means invalid.

The results of the validity test of the mathematical understanding questions were tested using the pearson product moment, and by using the SPSS 17.00 software for windows, the results were obtained as shown in the following table:

Table 1. Result

Question Number	Corrected Item-Total Correlation	Description
1	.668	Valid
2	.383	Valid
3a	.542	Valid
3b	.317	Valid
4	.392	Valid
5	.528	Valid
6	.435	Valid
7	.569	Valid
8	.697	Valid
9	.563	Valid
10a	.532	Valid
10b	.390	Valid

From the results of the validity test of the mathematical understanding questions in the Item-Total Statistics table, the correlation value of each item, the total score shows that it is greater than the minimum standard criterion for the validity test of 30 samples, which is 0.3494. So it can be concluded that all items on students' mathematical understanding are valid.

To obtain relevant results, the data collection techniques used in this study are:

1. Students' Mathematical Understanding Ability Test
   The test is a series of questions or exercises that are used to measure the skills, knowledge, intelligence, abilities or talents possessed by individuals or groups. (Arikunto, 2007). So the researchers used this test method in the form of a description of 12 questions. In this study the test method was used to collect data regarding student achievement on the subject of geometric shapes (cubes and blocks).
2. Attitude Scale
   The attitude scale is used to collect data regarding students' level of self-confidence. The scale used is a Likert scale which consists of four answer choices, namely: always, often, sometimes and never. This scale consists of a series of thoughts, feelings and activities that have positive and negative values regarding students' self-confidence in mathematics. The attitude of self-confidence that will be measured in this study includes the following aspects:

a. Confidence in self-ability.
b. The ability to realistically determine the goals to be achieved in preparing an action plan as an effort to achieve the goals.
c. Ability to communicate.

The data obtained from the results of students' mathematical understanding ability tests is processed through the following steps (1) Determine the score based on the answer key and the

scoring guidelines used (2) Make a table of pretest, posttest and N-gain values of experimental and control students (3) Calculating descriptive statistics from the data obtained, including making tables, graphs, averages and standard deviations. (4) Processing of pre-test, post-test, and N-gain data was first tested for normality and homogeneity to see the similarity or average difference of the data collected. The author uses SPSS 17.0 for Windows to carry out the test.

RESULTS

Hypothesis 1 which states "There are differences in the achievement of mathematical understanding abilities between students who receive Think Pair Share (TPS) cooperative learning and those who receive direct learning". Hypothesis 1 was tested using the t distribution and using SPSS software.

		t-test for Equality of Means						
							95% Confidence Interval of the Difference	
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
PemahamanMatematis	Equal variances assumed	-2.694	58	.009	-11.200	4.157	-19.520	-2.880
	Equal variances not assumed	-2.694	57.837	.009	-11.200	4.157	-19.521	-2.879

The results obtained with sig. is 0.009 and this is smaller than α = 0.05, which means that hypothesis 1 in this research is accepted or there is a difference in the attainment of mathematical understanding abilities between students who receive cooperative learning type think pair share and students who receive direct learning.

The second hypothesis in this research states "there are differences in the achievement of Self Confidence between students who receive Think Pair Share (TPS) cooperative learning and those who receive direct learning". Hypothesis 2 is tested using the t distribution and using SPSS software.

		t-test for Equality of Means						
							95% Confidence Interval of the Difference	
		T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
SelfConfidence	Equal variances assumed	-4.183	58	.000	-4.667	1.116	-6.900	-2.433
	Equal variances not assumed	-4.183	57.951	.000	-4.667	1.116	-6.900	-2.433

The results obtained with sig. obtained is 0.000 and this is smaller than α = 0.05 , which means that hypothesis 2 in this research is accepted or there is a difference in the attainment of mathematical understanding abilities between students who receive cooperative learning type think pair share and students who receive direct learning.

The 3rd hypothesis in this research which states "There are differences in the increase in mathematical understanding abilities between students who receive Think Pair Share (TPS) type cooperative learning and those who receive direct learning". Hypothesis 3 is tested using the t distribution and using SPSS software.

		t-test for Equality of Means						
							95% Confidence Interval of the Difference	
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
PemahamanMatematis	Equal variances assumed	-2.371	58	.021	-.11614	.04898	-.21417	-.01810
	Equal variances not assumed	-2.371	54.892	.021	-.11614	.04898	-.21429	-.01798

The results obtained with sig. obtained is 0.021 and this is smaller than α = 0.05 , which means that hypothesis 3 in this research is accepted or there is a difference in the increase in mathematical understanding ability between students who receive cooperative learning type think pair share and students who receive direct learning.

The 4th hypothesis in this research which states "There are differences in increasing Self Confidence between students who receive Think Pair Share (TPS) cooperative learning and those who receive direct learning". Hypothesis 4 is tested using the t distribution and using SPSS software.

		t-test for Equality of Means						
							95% Confidence Interval of the Difference	
		t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
SelfConfidence	Equal variances assumed	-4.817	58	.000	-.19900	.04131	-.28169	-.11631
	Equal variances not assumed	-4.817	47.419	.000	-.19900	.04131	-.28208	-.11592

The results obtained with sig. (2-tailed) obtained is 0.000 and this is smaller than α = 0.05 , which means hypothesis 4 in this research is accepted or there is a difference in increasing self-confidence between students who get cooperative learning type think pair share and students who get direct learning .

DISCUSSION

1. Discussion of Achievement and Improvement of Mathematical Understanding Ability

   This discussion is based on pretest, posttest and self confidence questionnaire scores that have been analyzed and the findings obtained in the field. This research was conducted in fifth grade at a public elementary school in Cidahu District, Sukabumi Regency in the second semester. This research used two learning models, namely the think pair share cooperative type and the direct learning model. After analyzing the class with the cooperative learning model type think pair share and direct learning model. The results of the analysis show that there are differences in the achievement and improvement of students' mathematical understanding abilities in the class by learning using the think pair share cooperative model and students by direct learning models. This can be seen from the normalized gain analysis of the results of the pretest and posttest on students' mathematical understanding abilities. From the results of the analysis of normality tests, homogeneity and n-gain hypothesis testing of mathematical understanding abilities, the data is normally distributed, has homogeneous variance, and there are differences between students with cooperative learning models of the think pair share type. The difference in achievement and improvement shows that students' mathematical understanding ability with cooperative learning model type think pair share is higher than using direct learning.

   Research on cooperative learning to increase student understanding has been studied by several other researchers including Siti Apsoh (2016) in her research on the effect of group investigation and direct instruction type cooperative learning on increasing mathematical understanding abilities in terms of the level of confidence. Based on the results of the research conducted, it is proven that cooperative learning can improve students' mathematical understanding skills and self-confidence. Maria Emanuela (2008) in her research stated that the application of cooperative learning can help improve student understanding. In another study conducted by Masjudin (2017) regarding cooperative learning to increase student understanding, it was stated that cooperative learning can increase student understanding.

   Thus, the think pair share cooperative learning model can be used as an alternative model in learning mathematics in elementary schools.

2. Discussion of Achievement and Improvement of Student Self-Confidence

   Based on the results of data analysis on students' self-confidence scale, there are differences in achievement and improvement between students who study cooperative

learning models of the think pair share type and direct learning. This can be seen from the results of the analysis of normality tests, homogeneity and differences in self-confidence score tests, the data obtained are normally distributed, have homogeneous variance, and there are differences. Self confidence in the class with cooperative learning type think pair share is better than students with direct learning. This is because in cooperative learning think pair share students study together, discuss with their group mates, learn to be more courageous in expressing their opinions, exchange information, grouped based on different student abilities so that students can learn from each other and students who have higher cognitive abilities High students can be used as peer tutors, when presenting in front of the class indirectly students' self-confidence arises, students are more interested in mathematics, and curiosity arises. When students learn cooperatively when there are problems or problems that are difficult to solve together so that confidence and self-confidence arise. According to the research results of Syam & Amri (2017) states that self-confidence affects learning achievement. Suryobroto explained more clearly that without having good self-confidence, a person will not be able to achieve high achievements. Because there is a relationship between achievement motives and self-confidence (yulianto, et al: 2006). In line with the results of Fitriani's research (2014) which states that good self-confidence will give students success in learning mathematics. This is shown in the attainment and improvement of students' mathematical understanding skills with cooperative learning model type think pair share better than students who learn with direct learning.

Based on the above opinion, it can be concluded that self-confidence can improve student learning outcomes because there is a relationship between achievement and self-confidence, and having a confident attitude will give students success in learning mathematics. From the percentage increase in students' self-confidence based on the results of self-confidence, it showed that the class increased with the think pair share cooperative learning model by 15.97%, while students with direct learning were 23.39%. That is, with cooperative learning the think pair share type can increase the self-confidence that students already have.

CONCLUSION

From the results of research conducted on two groups of fifth grade elementary school students on the implementation of learning with the think pair share cooperative model and direct learning with geometric material (cubes and blocks) it can be concluded that:

There is a difference in the achievement and increasing of students' mathematical understanding abilities in geometric material (cubes and blocks) between students who receive learning using the think pair share cooperative model and students who receive direct learning. Based on the average ability of students' mathematical understanding of geometric material (cubes and blocks) who learn with the think pair share type cooperative model is higher than students who receive direct learning.

There are differences in the achievement and increasing of self-confidence between students who receive learning with the think pair share cooperative model and students who receive direct learning. Based on the average self-confidence of students who study with the think pair share type cooperative model is higher than students who receive direct learning.

REFERENCES

Apsoh, S. (2016*). Pembelejaran Kooperatif Tipe Group Investigation dan Direct Intruction Terhadap Peningkatan Kemampuan Pemahaman Matematis Ditinjau Dari Tingkat Kepercayaan diri*. (Tesis). Universitas Pendidikan Indonesia, Bandung.

Budiyanto & Rohaeti, E. (2014*). Mengembangkan kemampuan berpikir kreatif dan kemandirian belajar siswa SMA melalui pembelajaran berbasis masalah*. Jurnal pengajaran MIPA, Vol. 19, No. 2, hlm. 166-172.

Depdiknas. (2003). Undang-Undang Sistem Pendidikan Nasional Nomor 20 tahun 2003. Jakarta: Depdiknas.

Fitriani, N. (2014). *Hubungan Antara kemampuan Pemecahan Masalah Matematis dengan Self Confidence Siswa SMP yang Menggunakan pendekatan Pendidikan Matematika Realistik*, Jurnal Euclid, 2(2), 341-351.

Hendriana, H. (2014). Membangun kepercayaan diri siswa melalui pembelajaran matematika humanis. *Jurnal Pengajaran MIPA*, *19*(1), 52-60.

Irmayanti. (2017). *Upaya Meningkatkan Prestasi Belajar Dengan Menggunakan Cooperative Learning Pada Mata Pelajaran Ipa Kelas IV Sekolah Dasar Negeri Gedongkiwo*. Universitas Negeri Yogyakarta, Yogyakarta.

Mulyasa, E. (2013). Pengembangan dan Implementasi Kurikulum 2013. Bandung: PT Remaja Rosda Karya.

Mustika, R. (2018). Hubungan self confidence dan adversity quotient terhadap kemampuan pemecahan masalah matematik siswa. *Jurnal Penelitian Pendidikan*, *18*(2), 220-230.

Oktariani. (2016). Pengaruh Strategi REACT Terhadap Kemampuan Pemahaman Matematis Siswa Kelas VIII SMPN 1 Siak Hulu. UIR.

Rosmanita. (2014). *Pengaruh Model Pembelajaran Kooperatif Tipe The Power Of Two Terhdap Peningkatan Kemampuan Pemahaman Matematis dan Penurunan Kecemasan Matematika Siswa SMP*. (Tesis). Sekolah Pascasarjana, Universitas Pendidikan Indonesia, Bandung.

Sariningsih, R. (2014). *Pendekatan Kontekstual Untuk Meningkatkan Kemampuan Pemahaman Matematis Siswa Smp.* Jurnal Ilmiah Program Studi Matematika STKIP Siliwangi Bandung, Vol.3, No.2, 150-163.

Sidik, G.S. (2014). *Analisis Proses Berpikir Dalam Pemahaman MatematisSiswa dengan Pemberian Scaffolding*. (Tesis). Sekolah Pascasarjana, Universitas Pendidikan Indonesia, Bandung.

Sumaryati, E. & Sumarmo, U. (2013). *Pendekatan Induktif-Deduktif Disertai Strategi Think-Pair-Square-Share Untuk Meningkatkan Kemampuan Pemahaman Dan Berpikir Kritis Serta Disposisi Matematis Siswa Sma.* Jurnal Ilmiah Program Studi Matematika STKIP Siliwangi Bandung, Vol.2, No.1, 26-42.

Syam, A & Amri. (2017). *Pengaruh Kepercayaan Diri (Self Confidence) Berbasis kaderisasi IMM terhadap Prestasi Belajar mahasiswa.* Jurnal Bioyek, Vol.5, No.1, 87-102.

Tandilling. (2012). *Pengembangan instrument untuk mengukur kemampuan komunikasi matematik, pemahaman matematik, dan self-regulated learning siswa dalam pembelajaran matematika di sekolah menengah atas.* Jurnal Pendidikan. Vol.13, No.1.

Wahyudin. (2013). *Matematika dasar pengetahuan bermuatan pedagogis. Bandung*: Mandiri.

Wahyudin. (2012), *Filsafat dan model-model pembelajaran matematika. Bandung*: Mandiri.