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To cite this article: Dwi Yan Nugraha *et al* 2018 *J. Phys.: Conf. Ser.* **1028** 012142

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# The Influence of Cooperative Learning Model Type Think Pair Share in Improving Self Efficacy of Students Junior High School on Mathematics Subjects

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**Abstract:** This research was purposed to see the influence of cooperative learning model type think pair share in improving self efficacy of students on mathematics subjects This type of research was a quas experiment with the design of The One Group Pre Test-Post Test Design Participants in this research amounted to 25 students of grade VIIIC junior high school 1 Ajangale event obtained by using simple random sampling technique The data from this research was obtained by using self efficacy scale containing 16 items of question The data obtained from participants' answer were analyzed by One Way Anova using SPSS 2200 The results of this study reveal that the pretest score was obtained  $M = 48,08$ ,  $SD = 8,046$ , while posttest score was obtained  $M = 60,76$ ,  $SD = 5,600$  The result of hypothesis testing on self efficacy scale on pretest and posttest obtained  $F = 41,827$  with significance value  $p = 0,000$  ( $p < 0,05$ ) So, it can be said that cooperative learning model has a positive effect in improving self efficacy students on mathematics subjects.

## 1. Introduction

Education is a very significant thing in a life of state and nation A country will advance and develop if education sector is being prioritized The country realizes that development of the education sector is really needed to be put first Education process cannot be separated from the development process The process refers to the development of qualified and potential human resources because the main factor of a strong country is to have qualified human resources.

There are so many efforts that the government has done to enhance the quality of education which are through curriculum changes, enhancement of the teacher quality, the application of various learning methods, and also provision of educational facilities and infrastructure In the process of studying the new curriculum is expected to involve sensory observation, persuade the students to ask, think, experiment and communicating an opinion By using an appropriate learning method, students are expected to be able to compete in a global era Learning methods that focus on the students is more capable to enhance the learning quality that can be seen in the result of affective, cognitive, and psychomotor abilities.

Learning outcome is a benchmark of students' success to reach certain goals through a learning process When achieving a maximum learning outcome so he has achieved the desired learning objectives The teacher should be able to choose an appropriate learning method to be used in teaching and learning process in order to motivate students to follow the learning process and be able to reach



the desired standard of completeness Students' low confidence about their ability will affect the achievement of a good learning outcome.

According to the first data based on the questionnaire made by Luifeto [1] that distributed to 30 students of SMPN 1 Ajangale, the result is that there are 10% of students have self efficacy in a very high category, 20% of students have self efficacy in a high category, 30% of students in a medium category, 36666% of students have self efficacy in a very low category Based on the first data, it shows that students of SMPN 1 Ajangale's self efficacy are still low.

The learning process should be a medium to develop students' potential through their active roles for a better change Other than that, with a self efficacy by a student can enhance their learning quality which in the end can improve the result of their students' learning process

Nuyami, Suatra, and Sadia [2] find out that the main point of Bandura social cognitive theory is self efficacy that is self confidence towards self skill of an individual Thereby, self efficacy would become a solution in handling student's indecisive in improving their identities.

Self efficacy concept refers to students' confidence which can finish a specific task and confidence about the result that will be achieved Schunk [3] states that self efficacy is the most influential factor for motivation and achievement Santrock [4] states that self efficacy really influence activity choice Students with low self efficacy may avoid many assignments, especially when it has to deal with a difficult assignment In the other hand, students with high self efficacy are very eager to do their assignment Students with high self efficacy would possibly put so much effort and stay longer in doing their assignment.

Fauzan [5] states that self efficacy is an individual confidence that himself can carry out a certain assignment successfully Wade and Tavis [6] states that with self efficacy, an individual can be successful to master a material because the confidence they have where that confidence come from the level of self-confidence towards their self-skill.

Subaidi [7] states that self efficacy is one of the most important dimensions in math problem solving Subiadi [7] states that the importance of the development of students' self efficacy in math problem solving caused by a learning process of math in the classroom is really influenced by students' self efficacy towards math subject and can form students' ability in solving math problems

Based on that, self efficacy becomes an important factor to be studied in developing student's self confidence One of the learning models that can be applied in the classroom learning and theoretically able to develop students' self-beliefs and allow students to interact with each other is the model of cooperative learning type think pair share (TPS).

Komalasari [8] states that the think pair share (TPS) model is an effective way to create variations in the atmosphere of class discussion patterns Trianto [9] states that the thinking pair share model (TPS) is a type of cooperative learning designed to influence the pattern of student interaction Elhefni [10] states that the thinking pair share model (TPS) has the advantage that students can have plenty of time to think, respond, and help each other.

From the data presented above, it shows that the research about think pair share learning model needs to be done In this research, the researcher wants to see the influence of thinking pair share learning model in improving student self efficacy.

## 2. Methodology

This research is a quasi experiment with the design of The One Group Pre-Test Post Test Design This research consist of one independent variable that is model of cooperative learning type *think pair share* and one dependent variable that is self efficacy *Think pair share* learning model is one kind of cooperative learning designed to create and change the pattern of discussion in the classroom Self efficacy is an individual's self-confidence in the ability of self-owned in completing a job Self efficacy measured in this study is students' self efficacy related to math subjects.

This research was conducted at SMP Negeri 1 Ajangale The population in this study was all students of class VIII SMP Negeri 1 Ajangale The sample in this research was the students of class VIII C amounted to 25 people obtained by using simple random sampling technique.

The procedure in this research consists of 3 following stages: 1) Distribution and filling the scale of self efficacy to grade VIII students C to know the level of self efficacy before given the model of learning think pair share 2) Provision of learning model think pair share to the students of class VIII C The stages of the cooperative learning model of think pair share are given: a) Thinking (Think): The researcher gives reading assignments to the students about the math material they have not studied and the researcher asks questions related to the material The Researcher gives 10 minutes to think about the question independently b) Couple (Pair): Researcher ask students to pair up and discuss what they have been thinking Interactions during this period may produce a shared answer if a question has been raised The researcher gives 40 minutes c) Share (Share): In the final step, the researcher asks the couple to share and cooperate with classmates as a whole about what they have been talking about In this step the researcher will instruct some groups of students to present the results of their discussion This stage lasts for 30 minutes 3) Distribution and replenishment of self efficacy scale back to grade VIII students C to know the level of self efficacy after given the model of learning think pair share.

The instrument used in this research was a self efficacy scale consisting of 16 items of statement The data obtained then analyzed by One Way Anova test using SPSS 2200.

### 3. Result and Discussion

Finding of the research is presented descriptively Average score of *self efficacy* which is obtained from pre test and post test show different score and there are changes *Self efficacy's* average score is obtained from the pre test result is 48,08 is smaller from *self efficacy's* average score which is obtained from the post test result 60,76 The amount of standard deviation score obtained from the pre test is 8,046 compared to standard deviation score obtained from the post test result is 5,600, indicating that score of self efficacy in the post test Finding of quantitative descriptive report can be seen in table 1 below

**Table 1** Research Data Description

	N	Mean	Std Deviation	Std Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Pre Test	25	48,08	8,046	1,609	44,76	51,40	32	72
Post Test	25	60,76	5,600	1,120	58,45	63,07	50	69
Total	50	54,42	9,385	1,327	51,75	57,09	32	72

Data that obtained from this research, later it is analyzed by *One Way Anova* test

Result of hypothesis test is presented on table 2 below

**Table 2** One Way Anova Test

	Sum of Squares	Df	Mean Square	F	Sig
Between Groups	2009,780	1	2009,780	41,827	,000
Within Groups	2306,400	48	48,050		
Total	4316,180	49			

Based on the result of data analysis that conducted in this research, it is obtained score of  $F = 41,827$  with score of significance  $p = 0,000$  is less than 0,05 It indicates  $H_0$  is rejected and  $H_a$  is accepted Thus, it can be concluded that there is an influence of cooperative learning model of *think pair share* type in improving student *self efficacy* in math subject

The results of this study seem to be consistent with a research conducted by Isaacson and Fujita [11] The study shows that students who have *self efficacy* in learning will be more accurate in estimating test results, more realistic in achieving goals, more confident to adjust beliefs that are in line with result of test and more effective in selecting questions in tests that they have previously

believed to be the answer Coutinho (2008) in his research shows that the relations between metacognition and performance are fully mediated by *self-efficacy*. This indicates students with effective metacognition strategy also have strong confidence in their ability to do a task.

Research conducted by Ahmadian, Amerian, and Lavasani [12] shows that cooperative learning techniques dicto gloss can affect student self efficacy. Students who receive cooperative learning models have better self efficacy and can do a task well. Manafe, Setyosari, Kuswandi, and Ulfa [13] in their research showed that group collaboration strategy proved to help students with low self efficacy to gain improved learning outcomes.

Research conducted by Subaidi [7] shows that Self-efficacy plays an important role in everything, especially for students who solve math problems. Students with high self efficacy succeed in solving mathematical problems compared to students with low self efficacy. In addition, self efficacy also affects other subjects. This is proved by research that conducted by Iklima, Marzal, and Damris [14] shows that there is a significant influence between students' self-efficacy on the ability of solving physics problems.

Research conducted by Hammond and Feinstein [15] shows that 1) perceptions of achievement in self-learning enhance *self-efficacy*, 2) adult learning leads to challenges in working, which increases *self-efficacy*, 3) resistance in participating in adult learning decreases over time the increasing of *self-efficacy*, and 4) learning during working can build *self efficacy*. Mari and Gumel [16] in their research shows that students' *self efficacy* improve after being given a jigsaw type of cooperative learning model and affected to success in student academic achievement. In addition there are also other cooperative learning models that can improve student *self efficacy* which is *thinking pair share model* (TPS).

Nuyami, Suastra, and Sadia [2] argue that think pair share type (TPS) of cooperative learning model is a learning model that uses paired discussions and follows by plenary discussions so that students are trained to express opinions and learn to appreciate other opinions. This thinking pair share type (TPS) of cooperative learning model provides an opportunity for students to interact more with other friends so as to enhance their self-reliance and self-confidence.

Nuyami, Suastra, and Sadia [2] argue that the advantages of think pair share type (TPS) of cooperative learning model is to improve students' self-efficacy because in the think pair share type (TPS) of cooperative learning model there are elements inquiry, knowledge, and dynamic of learning group. Inquiry element is a way of learning by examining material critically, analytically, and argumentatively. The knowledge element is a process conducted by the student continuously to try various ways to see an experience. The dynamic element of learning group is the depiction of atmosphere by a group of interacting individuals in studying a discourse which involves ideas, opinions, and exchanges experiences.

Marlena, Dwijayanti, and Dewi [17] suggest that responses that given by individuals on think pair share (TPS) learning is very positive, because individuals are required to be active therefore learning process is not saturated and are more comfortable with think pair share (TPS) learning because it can make individuals to interact with another individual, to practice in giving opinion better, to relieve egoistic, also willing to accept others opinion or idea.

In addition Marlena, Dwijayanti, and Dewi [17] argue that with thinking pair share (TPS) can cause positive dependence because the appreciation given to the group who has achievement and encourage other group members to learn, train social skills, feel themselves to be part of the success or failure of the group, to cultivate mutual need, and to share knowledge, and be responsible for the discourse they understand and be able to communicate it to other group members.

#### 4. Conclusion and Suggestions

Based on the research that has been conducted, it can be concluded that there is influence of think pair share type of cooperative learning model in improving student self-efficacy in mathematics subject.

Based on the findings of research think pair share type of cooperative learning model become one of the dominant factor influential in improving student self-efficacy in math subjects. In order for self-



efficacy to be accommodated in the learning process, it is suggested to the mathematics teacher to choose the right learning model in improving the self-efficacy of the students, one of ways by using thinking pair share learning model In the next study, it is suggested to use on different subjects Similarly, it is suggested that the next researcher to develop this research by combining one of the other learning models and can also involve other variables such as attitude, learning style, cognitive ability, motivation, and others to see the effect of this learning model

## References

- [1] Luifeto S E 2012 Efikasi Diri (Self Efficacy) Dan Motivasi Belajar Sebagai Prediktor Prestasi Belajar Matematika Pada Siswa SMP Negeri 1 So'E Kelas VIII Salatiga: Tesis Program Pascasarjana Universitas Kristen Satya Wacana
- [2] Nuyami N M S, Suastra I W, Sadia I W 2014 Pengaruh Model Pembelajaran Kooperatif Tipe Think-Pair-Share Terhadap Self-Efficacy Siswa Smp Ditinjau Dari Gender *Jurnal Program Pascasarjana Universitas Pendidikan Ganesha Program Studi IPA* **4** 1-11
- [3] Schunk D H 2012 *Teori-teori Pembelajaran: Perspektif Pendidikan (Edisi Keenam)* Yogyakarta: Pustaka Pelajar
- [4] Santrock J W 2007 *Perkembangan Anak Edisi Kesebelas Jilid 2* Jakarta: Erlangga
- [5] Fauzan A 2013 Keefektifan Pembelajaran MEAs dengan Mengintegrasikan NKB Terhadap Kemampuan Representasi Matematis Dan Self-Efficacy Pada Siswa Kelas X Semarang: Skripsi Jurusan Matematika Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Negeri Semarang
- [6] Wade, C, & Tavis, C 2007 *Psikologi Jilid 2* Jakarta: Erlangga
- [7] Subaidi A 2016 *Self-Efficacy* Siswa Dalam Pemecahan Masalah Matematika *Jurnal SIGMA* **1**(2) 64-68
- [8] Komalasari K 2011 *Pembelajaran Kontekstual: Konsep dan Aplikasi* Bandung: PT Refika Aditama
- [9] Trianto 2010 Mendesain Model Pembelajaran Inovatif-Progresif: Konsep, Landasan, dan Implementasinya pada Kurikulum Tingkat Satuan Pendidikan (KTSP) Jakarta: Kencana
- [10] Elhefni 2011 Model Pembelajaran Kooperatif Tipe *Think Pair Share* Dan Hasil Belajar Di sekolah *Jurnal TA'DIB* **16**(2) 303-319
- [11] Isaacson R M, Fujita F 2006 Metacognitive Knowledge Monitoring and Self-Regulated Learning: Academic Success and Reflections on Learning *Journal of the Scholarship of Teaching and Learning* **6**(1) 39 - 55
- [12] Ahmadian M, Amerian M, Lavasani E, 2015 The Effect of the Dicto-gloss as a Cooperative Learning Technique on EFL Learners' Self-efficacy in Writing *Journal of Language Teaching and Research* **6**(6) 1357-1364
- [13] Manafe Y Y, Setyosari P, Kuswandi D, Ulfa S 2016 Pengaruh Strategi Kerjasama Kelompok dan Efikasi Diri terhadap Hasil Belajar Keterampilan Teknikal *Jurnal Pendidikan Humaniora* **4**(3) 152-162
- [14] Iklima I, Marzal J, Damris M 2016 Pengaruh Model Pembelajaran Kooperatif Tipe *Team Assisted Individualization* dan *Self-Efficacy* terhadap Kemampuan Pemecahan Masalah Fisika Siswa di MTs N Kota Jambi *Jurnal Edu-Sains* **5**(1) 46-55
- [15] Hammond C, Feinstein L 2005 The effects of adult learning on self-efficacy *London Review of Education* **3**(3) 265-287
- [16] Mari J S, Sani Abdullahi Gumel, S A 2015 Effects of Jigsaw Model of Cooperative Learning on Self-Efficacy and Achievement in Chemistry among Concrete and Formal Reasoners in Colleges of Education in Nigeria *Journal of Information and Education Technology, Vol* **5**(3), pp 196-199
- [17] Marlina N, Dwijayanti R, Dewi R M 2015 Penerapan Pembelajaran Think Pair Share (TPS) Untuk Meningkatkan Hasil Belajar Dan Respon Mahasiswa Pada Materi Konsep Diri Mata Kuliah Pengembangan Kepribadian *Prosiding Seminar Nasional* 309-321

- [18] Coutinho S 2008 Self-Efficacy, Metacognition, and Performance *North American Journal of Psychology* **10**(1) 165-172