AN ANALYSIS OF JIGSAW COOPERATIVE EFFECTIVENESS TO IMPROVE THE SELF-CONFIDENCE AND LEARNING RESULT OF VOCATIONAL HIGH SCHOOL STUDENTS

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ABSTRACT

This research aims to know rather Jigsaw cooperative is effective to improve self-confidence and learning result students of SMK N 1 Batang Toru. This research was held in the second semester 2016/2017Academic Year involving 30 students. The method used in this research was descriptive analysis. The data gotten in the first test of passed students were 9 persons (30%) and not passed 21 students (70%). And in the second test of passed students were 18 students (60,0%) and not passed 12 students (40%). In the third test the passed students were 26 students (86%) and not passed 4 students (13,3%). While for the students' self-confidence there was an improvement with the mean 72,42 became 75,39.

Keyword : *Cooperative Jigsaw, Self-confidence, Learning Result.*

1. PRELIMINARY

Mathematic teaching-learning process will be meaningful if the material that's given by the teacher to the students can be understood. It needs correct process and way so that the learning given can be understood by the students, one of them is by creating an effective learning. NCTM (2000) stated that "*effective mathematics teaching requires understanding what students know and need to learn then challenging and supporting them to learn it well.*" According to Arends (2008), an effective mathematic learning can be reached if it's done based on a good plan to achive the expected goal based on the citeria and indicator firmed.

Kyriacou (2009) stated that the most important learning result for students can be seen from: (1) the improvement of knowledge and skill; (2) the intention improvement of learning material; (3) the improvement of intelectual motivation; (4) the improvement of self-confidence in academic; (5) the improvement of otonomy ability; and (6) the improvement of social development.

Based on the opinion above so it can be concluded that learning effectiveness is achievement level of learning goal or students' learning completeness that's stated in the students' mean that's related with the assigned criteria and indicator.

According to Hasratuddin (2015) stated that learning effectiveness indicator can be based to the learning completeness achievement (if having absorption minimally 65% while the classical completeness is achieved if 85 % students had been complete), the achievement of learning completeness goal (at least 75% learning goal that's formulated can be reached by the students at least 65%) and the time used in efficiency learning or not over that usual learning, and students' respond to the learning.

Students' inside factor can influences students' learning result, one of them is confident. It is related with Hamdan's research (2009, p.14) concluded there is a positive and significant relation between self-confidence with achievement motivation to the students. Beside that, learning model that can be used in learning process is influenced to studens' self-confidence.

The implementation of cooperative learning can be made one of effort to improve students' learning achievement and self-confidence in learning mathematic. Jhonson, Jhonson & Stane (2000, p.1) stated that "*all eight cooperative learning methods had a significan positive impact on student achievement.*"

Cooperatif *Jigsaw* is a model learning that uses group in its application. In *Jigwaw* cooperative learning students are devided into two kinds of group, namely native group from expert group. As explained by Widyastuti (2015:55) stated that in cooperative *Jigsaw*, students work in group twice namely in their group and "expert group". After each parts explain their part to their friendsin group, they start to be tested individually.

1.1 Self-Confidence

Self-confidence is the ability of self it self in finishing the task and choose the good and effective way to solve the problem and self-confidence on the ability having by the students and take a decision seen by self ability, optimism, objective, responsibility, rational, and realistic. Self-confidence really influence students' success in studying mathematic if they have high self-confidence. They will not be affraid to give their opinion, submit the questions, and explain the discussion result in front of the classs. Majaila, & Pehkonen (2004) stated that, "*self confidence is another variable that seems to be an important predictor for future development. A pupil's self-confidence predicts largely the development of self confidence in the future, but also the development of success orientation and achievement.*"

Do not all students who have same self-confidence. There are students' who have high, medium, and low self-confidence. The low self-confidence is someone obstacle to develop the potential she/he has. Affraid to be false feeling, affraid, shy to another friend can be an obstacle in her/his learning process because they'll feel that they're not able and sure with the skill and ability they have and cause less-confident.

Someone self-confidence is not harwired, but it's formed by the ineraction and development through individually or group learning process . the former of students' self-confidence characteristic in learning process is the condition in learning process. It'd supported by the argument of Jurdak (2009) that's stated that, *student self confidence in learning mathematics is primarily formed as a result of student's interactions with the math teacher and with classroom peers during math instruction.*" While Nunes, et al. (2009) stated that "*children's self confidence in maths is predicted most strongly by their own competence, but also by gender and by the ability group in which the child is placed.*"
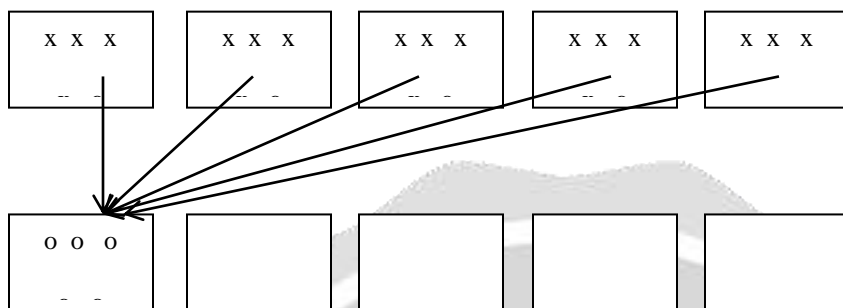
1.2 Cooperative *Jigsaw*

Cooperative learning type *Jigsaw* is developed by Elliot Aronson on 1978 (Slavin, 1995, p.6). In cooperative learning type *Jigsaw*, students learn in small group consist of 4-6 people as heterogen and cooperative in positive interdependence and also be responsible independently. Every group member responsibles to another group members in material delivering and the problem solving gotten. The students also cooperative with another group member from native group nor expert group. Beside that, the students' cooperative with their friends in mutual cooperation nuance and having auch chance to process the information and improve students' communication skill (Lie, 2008, p.69).

Boorich (2007, p.389) stated, "*the cooperative learning activity called Jigsaw II, you assign student to 4 to 6 member teams to work on an academic task broken into several subtask, depending on the number of group. You*

assign students to teams and then assign a unique responsibility to teach team member." The teacher decided member teams and explain every member's responsibility to teach one group frens.

The model of cooperative team type *Jigsaw* forming is as below:
Home Teams (Native Team)

(5 or 6 members heterogeneously Grouped)

(Each Expert teams has 1 members from each of the home

Picture -1: *Jigsaw* Cooperative Forming (Arends, 1997)

The steps of *Jigsaw* cooperative learning is as follow:

Table-1: The Steps of *Jigsaw* Cooperative Learning

Fase	Kegiatan
Fase 1 :Delivering students' goal and motivation	The teacher gives learning indicators that want to achieve on the learning and motivate the students.
Fase 2 :Presenting an information	The teacher delivers informations to the students by demonstrating and reading material.
Fase 3 :Organizing into learning group	The teacher explains to the students how to form learning group and help every group to make a communication efficiently, determining home group and forming expert group.
Fase 4 :Guiding learning group and study	The teacher guides expert group and give the responsibility of learning result and teaches to home group.
Fase 5 :Evaluation	Each groups presentate their working result and the teacher evaluates learning result, about the material learned.
Fase 6 :Giving rewards.	The teacher gives a praise to the best group and giving direction to another group, finding way to appreciate the test nor individual group result.

Ariends Adaptation, 1997

2. RESEARCH METHOD

Research method that's used is descriptive analysis. Because the goal of this research is to know rather cooperative *Jigsaw* is effective to improve students' self-confidence and learning result. This research was done in SMK Negeri 1 Batang Toru 2016/2017 Academic Year. The sample in this research was a class namely X-1 Building Picture Technology consist of 30 students.

The technique of data collection that's done by test is as big as 4 questions in linear program material and self-confidence questioner. The research instrument was validated by the validators namely the magister lecturers and Vocational High School teacher. Next, to know the Minimum Completeness Criteria is 75 (Permendiknas, No.5 year of 2015).

3. RESEARCH RESULT

Descripted data in this part was the students' learning result data and quetionary of self-confidence. Data of mathematic learning test result used three times of meeting and three times tests.

Table -2: Students' Score List

No.of Absent	Completeness Score		
	I	II	III
1	50	70	71
2	60	75	78
3	45	45	75
4	55	55	75
5	60	60	73
6	58	58	77
7	80	80	82
8	60	60	77
9	50	80	82
10	60	78	82
11	63	63	77
12	80	80	82
13	78	78	82
14	78	78	78
15	73	78	82
16	70	78	78
17	80	80	83
18	80	80	82
19	73	78	80
20	80	80	83
21	83	83	87

22	80	80	80
23	70	80	83
24	63	73	77
25	65	73	77
26	63	78	80
27	70	70	82
28	70	70	80
29	63	80	80
30	58	79	79
Mean	67,27	73,33	79,47
Percentage	30 %	60%	86,7%
Explanation	Not completed	Not completed	Not completed

In the first meeting by using test I, the completed students were 9 students (30%) and not completed were 21 students (70%) with the minimum score 45 and the maximum 83 while the average 67,27. For the second meeting by using test II, the result having improvement where the completed students were 18 students (60%) and not completed were 12 students (40%) with minimum score 43 and maximum score 83 while the average 73,33. And the third meeting is done test III, and the completed students were 26 students (86,7%) and not completed 4 students (13,3%) with minimum score 71 and maximum score 87 while the average 79,47.

The questioner of self-confident consist of 20 items involve the data that's given and after the treatment in sample class. The data is presented in Table-3 as:

Tabel -3: The Description of Self-Confidence Questionaries Restult

	BeforeLearning	After Learning
The meaanscore	72,42	75,39
Ideal MaximumScore	100	100
MaximumScore	86	87
Ideal Minimum Score	20	20
MunimumScore	59	59
Variaty	46,14	42,24
StandartDeviation	11,05	14,18

Based on Table 3, there was an improvement of self-confidence mean score to the learning namely 72,42 becomes 75,39.

4. RESEARCH DISCUSSION

Cooperative *Jigsaw* application can be made as an effort to improve students' result and self-confidence in learning mathematic. Vigotsky (in Ansari: 2009) said that learning is done in the interaction with social environtment or someone's physical. Cooperative *Jigsaw* is a learning orientated by process, so the learning ia more meaningful and improve the students' understanding to the learning material that can improve the learning result and students' self-confidence at last.

Zakaria, et al. (2013, p. 98) said that cooperative learning especially *Jigsaw* type can improve mathematic learning result and students' self-confidence. And supporting by Naomi's research (2013) that's done in Laikipia District East of Kenya School, concluded that the students' thought with mathematical topic using *Jigsaw* learning perform better that them who's thought by using conventional teaching method.

Cooperative learning model type *Jigsaw* has the diffrentiation with another teaching model. The advantages of *Jigsaw* is the efficient and effective learning. It's caused by besides students' academic achievement will be better, it's like cooperation, familiarity, good communication between the students and teacher will be better as the improvement of students' self-confidence. It is supported by Tran & Lewis' research (2012, p.15) stated that cooperative learning especially *Jigsaw* give a positive result with student' attitude in studying. The students' will more understand , and independent, studying much and more confident. The students feel so confident in delivering the opinion and explain what the students' know to their group friend.

5. CONCLUSION

Looking the research result that's stated above, showing that a learning with cooperative *Jigsaw* is effective with the self-confidence and learning result in X Grade of SMK Negeri 1 Batang Toru that can be seen from the students' learning completeness with the tests that had been given.

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