

## **JIGSAW IMPLEMENTATION OF COOPERATIVE LEARNING MODEL: A STUDY ON INDONESIAN ELEMENTARY SCHOOL**

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### **ABSTRACT**

*Jigsaw cooperative learning model is a learning environment in which students learn together in small heterogeneous groups to complete learning tasks. The research was conducted among fourth grade students studying at Elementary School 028229, Western District of Binjai, North Sumatra province of Indonesia with Social Sciences subject during the Academic Year, 2015-2016. The result showed that there is an increase in achievement of learning objectives and can increase the students' interest in participating in cooperative learning. At the end of the study, the value of activity and completeness of student learning outcomes in classical reaches 75% of the total number of 40 students or it has reached the Minimum Completeness Criteria specified at 65.*

**Keywords:** Cooperative Learning, Jigsaw, Minimal Completeness Criteria, Social Sciences.

## INTRODUCTION:

Education is a community need to develop one's own potential to have the spiritual power of religion, self-control, personality, intelligence, noble character, and skills needed by themselves towards the upliftment of society, nation and the state. Indonesian education system is one of the largest education system in Asian region and fourth largest in the world with over 50 million students and 2.6 million teachers in more than 250,000 schools (World Bank, 2014). But a study by Network for Education Watch Indonesia (JPPI) reveals the index of education services in Indonesia in 2016 ranks lower than the Philippines and Ethiopia (The Jakarta, 2017). Education and teaching can be managed in line with expectations, if influenced by factors that are interrelated and mutually supportive. For students, especially primary school students, it is very important to achieve education through the student's activity during the learning process.

One success indicator students learning process is obtaining the value of good learning outcomes. Learning outcomes are results obtained by students after participating in learning whereas the learning outcomes are usually expressed in the form of numbers, letters or words (Arikunto, 2006). In Indonesian national education system learners' achievement towards educational success is expressed through a Minimum Completeness Criteria (MCC). MCC is the minimum criterion to declare learners that they have achieved mastery called Minimum Completeness Criteria (Sudrajat, 2008).

MCC is determined prior to the beginning of the school year. Education requires a reference criterion for actions that remain on the assessment results that provide remedial services to those who have completed or enrichment services for those who are beyond MCC. MCC is set by the education unit on the basis of results of the deliberations of subject teachers in educational units who possess similar characteristics.

Jigsaw cooperative learning, the strategy was first developed by Elliot Aronson (1971) in Texas University and California University (Marhamah & Mulyadi, 2013). Jigsaw cooperative learning is one type of cooperative learning that encourage students to actively help each other in mastering the subject matter to achieve maximum performance (Indrawati, 2009). In jigsaw learning model, there are two learning groups such as the original group and the group of experts. The home group is the parent group of students consisting of students by ability, origin, and their family backgrounds are diverse, whereas the expert group is a group of students consisting of members of different origins who are assigned to study, explore the specific topics and complete the tasks related to the topic for later purposes as explained to the members of the original group. In Jigsaw strategy, cooperative learning is emphasized by active participation and helping by one set of students to that of the other to build comprehension (Marhamah & Mulyadi, 2013).

Jigsaw learning model is applied in learning process to achieve competencies that have been defined and known to students by distributing complete teaching materials (Roestiyah, 2001). This technique can be used in some subjects such as science, social science, mathematics, religion, and language. Aronson (1980) opined that Jigsaw is a good method to encourage students of large group to study a specific type of content.

Social Science is a field of study that study, examine and analyze the symptoms and social problems in the community while reviewing the various aspects of the variety of life. The main focus of the social science program is to make individuals understand the social life in the human world, its activities and interaction aimed at generating community members who are free, who have a sense of responsibility to preserve, continue and expand the values and ideas of the community for generations future (Supriatna, 2007). The instruction of Social Science is designed in such a way to create and enhance the capability of students towards social living that evolves in a continuous manner (Miaz, 2015). To complete these objectives, social science program should focus on providing an experience that can help each and individual student. Some studies (Miaz, 2015) have been conducted earlier in the areas of social science and some in economics (Chu., 2014), while some in mathematics (Zakaria, Solfitri, Daud, & Abidin, 2013) and jigsaw activities for not using the appropriate methods and instructional media.

## LITERATURE REVIEW:

### Cooperative Learning:

Cooperative learning is a teaching and learning activity in small groups where the students learn and work together to arrive at an optimal learning experience in terms of individual and group experiences (Nurhadi, 2003). Various researchers proved that cooperative learning has extensive effects on the outcome, especially among the school education (1-4) for which they list out various reasons such as idea that students learn more by doing something active than by simply watching and listening has long been known to both cognitive psychologists and effective teachers (Felder. & Brent., 2017). In cooperative learning, student motivation and retention of the learning material is visible through the outcome (Adams, 2013).

**Jigsaw Cooperative Learning:**

Jigsaw cooperative learning model was developed by (Aronson, Blaney, Stephan, Sikes, & Snapp, 1978). According to Indrawati (2009), Jigsaw cooperative learning is one of the cooperative learning types that encourage students to help each other in an active manner to master the subject matter for achieving the maximum performance. Researchers such as (Hedeem, 2013, pp. 325-332) reported that irrespective of the subject matter involved, those students who are working small groups usually can learn more than what is being taught by the teacher. They can also retain the same knowledge for a long term than when the same content is presented in other instructional formats. Based on the experiences of the students who receive jigsaw cooperative learning the teachers proposed preparing jigsaw lessons aimed at improving the students' skills in condensing information and explaining them to others (Eilks, Markic, & Witteck, 2010)

**Minimal Completeness Criteria (MCC):**

Minimal completeness criteria is the minimum criteria set to certify learners that they have achieved mastery (Sudrajat, 2008). MCC is determined by referring to the criteria set by the Ministry of National Education of Indonesia which contains complexity of the material, carrying capacity of the school and intake (ability) students among the other criteria

**Social Sciences:**

Social Sciences is an integrated study material that encompasses simplified, adapted, selected and modified organized skills as history, geography, sociology, anthropology, and economics. The overall aims of social science education in primary schools is as follows (Ischak, 2003):

1. Equipping students with socially useful knowledge in their life through class in society.
2. Equipping students with the ability to identify, analyze, and develop alternative solutions for social problems that may occur in life.
3. Equipping students with the ability to communicate with fellow citizens and share scientific fields and areas of expertise.
4. Equipping students with awareness, a positive mental attitude and the skills to use environment to be a part of that life. Equipping students with the ability to develop scientific knowledge and social sciences in accordance with the development of life.

**METHODOLOGY:**

The research model used in this study is a model of class action, which is research activities carried out in the class. This classroom action research conducted in the fourth grade, Elementary School 028229, Western District of Binjai North Sumatra Province of Indonesia, amounting to 40 students consisting of 20 girls and 20 boys whose level of absorption as students is quite varied. The research is conducted among elementary school fourth grade students for social sciences subject during the academic year, 2015 - 2016.

The process activities of students and teachers is done through observation sheet. In data collection about the student and teacher performance, the study used sheets of observations in which a score range of one to five is given where if the observed activity is carried out by teachers and students and if the observed activity is not carried out by teachers and students, they are scored 0 (zero). The assessment aspects of student learning activity observed in this study are,

1. Worksheets Implement discussion group
2. Work in teams
3. Actively ask questions / feedback
4. Presenting the results of discussions

The activities of students and teachers are assessed through two cycles of observation. The first cycle activities comprises of drafting and designing lesson plans, developing learning scenarios, designing the observation sheet of students as well as designing the first cycle and a final test answer key. The second cycle is implemented by making changes to certain sections based on the reflection of the first cycle with the same research procedures being implemented as in Phase I.

The student learning outcomes are assessed by calculating the value of individual mastery learning, the value of the average student and student grades classical completeness.

**Value completeness Individuals:**

Individual student mastery value calculated as follows;

$$NP = \frac{R}{SM} \times 100$$

NP = Value Sought

R = The scores obtained by students

SM = The maximum score

When the results obtained are  $\geq 65$ , then the categorized is completed, whereas if the results obtained are  $<65$ , then the categorized is incomplete (Purwanto, 2008).

**Average Value Entire Students:**

The average value of all of the students is calculated as follows (Purwanto, 2008):

$$\bar{X} = \frac{\sum fi \cdot xi}{\sum fi}$$

**Complete Classical Values:**

The Classical Completeness Value is calculated as follows (Aqib, 2009)

$$P = \frac{\sum \text{Siswa yang tuntas belajar}}{\sum \text{Siswa}} \times 100\%$$

**FINDINGS AND DISCUSSION:**

The study results on learning outcomes among the fourth grade elementary school students studying at 028229 Western District of Binjai North Sumatra Province of Indonesia, with Social Sciences subject for the academic year, 2015 - 2016 is presented in Table 1.

**Table 1: Results 1<sup>st</sup> Test Cycle and 2<sup>nd</sup> Cycle**

Criteria	Results 1 <sup>st</sup> Test Cycle	Results 2 <sup>nd</sup> Test Cycle
Average	59.48	72.12
Classical Completeness	57.5%	75%

From Table 1, it can be inferred that there is an increase in the value of tests in 2<sup>nd</sup> Cycle. In the 1<sup>st</sup> cycle, there are some areas that still need improvement, so that the average results of the test scores in the 1<sup>st</sup> cycle reached 59.48 only whereas the classical completeness reached 57.5% only. Classical jigsaw cooperative learning method is said to be not yet achieved as only 23 students out of the 40 have obtained scores  $\geq 65$ . In the 2<sup>nd</sup> cycle, the student activity got increased and reached an average value of the test on the 2<sup>nd</sup> cycle of 72.12 and classical completeness 75%. Classical jigsaw cooperative learning method is said to be complete because, of total 40 students, 30 have obtained scores  $\geq 65$ .

**CONCLUSION:**

Based on the results, the study concluded that the Jigsaw cooperative learning model can produce an effective contribution in the achievement of learning objectives in the subject of social sciences at the elementary school where teachers have the creativity of professional performance in developing learning in the classroom. This is in line with the previous studies conducted by Miaz, Chu and various other researchers. The Jigsaw cooperative learning model could improve the students' learning outcomes with regards to the understanding of the material, the development of attitudes and social skills. The Indonesian education system must be improved through such cooperative learning models since the recent reports said that its ratings are far behind Philippines as stated earlier. Improving student learning outcomes obtained from an atmosphere of openness and concerned teachers in developing learning climate of democratic, open, cooperative and collaborative academic in the climate partnership.

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