

## The Effectiveness of Jigsaw Method in Improving Students Reading Comprehension

Nurbianta, Hana Dahlia

[ita\\_bianta@ymail.com](mailto:ita_bianta@ymail.com) [hanadahlia948@gmail.com](mailto:hanadahlia948@gmail.com)

Sekolah Tinggi Ilmu Tarbiyah Muhammadiyah

Tanjung Redeb, East Kalimantan

### Abstract

Reading comprehension is a major objective of language instruction in English learning concept teaching in senior high school. As one of macro skill of English it is being important part in English Language Teaching. So, the teacher should teach actively to help students get the ultimate goal of reading instruction. Jigsaw is one of cooperative learning which is interesting to be applied to boost students' motivation in learning English especially to reading skill. The activities is centered to the students, so it can stimulated students activeness because they involved in active learning. Based on the tittle, the formulation of the problem was: 1) Is the prepared test curricularly valid and reliable?, 2) What are the results of pretest and posttest using jigsaw method?, 3) Is there any significant difference result of pretest and posttest using jigsaw method? Design of this research was pre-experimental design by *pretest-posttest one group*. Research subject was students in SMPN 13 Berau while object of the research was the use of jigsaw method in reading instruction. The population of this research was 100 students of seventh grade of SMPN 13 Berau, and the sample was 30 students taken by random sampling technique. The instrument was test then analyzed by scoring, normality, homogeneity, mean, t test and hypothesis testing. The results of this research are; 1) The test instrument used in this research was appropriate in term of the objective and applicable in this particular situation because the prepared test curricularly valid and reliable, 2) The result of posttest slightly higher than pretest in conducted jigsaw method in SMPN 13 Berau, 3) There is significant difference of jigsaw method used that exists on respondents specifically students in SMPN 13 Berau during learning English as Second Language (ESL) specifically for reading instruction. The hypothesis of this research is accepted because there is significant effect of Jigsaw Method in Improving Students Reading Comprehension to the First Grade At SMPN 13 Berau 2017/2018.

**Keywords:** *Jigsaw Method, Reading Comprehension.*

## Introduction

English is considered as the first foreign language and taught formally from elementary school up to the university level in Indonesia. The *Kurikulum Tingkat Satuan Pendidikan* (2006) on English curriculum states that the basic competence of English at SMP must be learned by the students to master this competence as the result of learned English. Four of these competences are reading, writing, speaking, and listening.

Among the four skills above, reading is the most difficult one. Reading is also something crucial and indispensable for the students because the success of their study depends on the greater part of their ability to read. If their reading skill is poor, they are very likely to fail in their study or at least they will have difficulty in making progress. On the other hand, if they have a good ability in reading, they will have a better chance to succeed in their study.

Jigsaw technique

Jigsaw technique is a type of cooperative learning and actively

encourages students to help each other in the mastery subject matter to get maximum achievement. This is a cooperative learning technique that reduces racial conflict among school children, promotes better learning, improves student motivation, and increases enjoyment of the learning experience. The jigsaw classroom is a research-based cooperative learning technique invented and developed in the early 1970s by Elliot Aronson and his students at the University of Texas and the University of California. This work refers to Robert Slavin theory, cooperative learning is one form of learning based on constructivist ideology. Cooperative learning is a learning strategy with some students as members of small groups with different levels of ability. In completing the task of the group, each student group member must work together and help each other to understand the subject matter. In cooperative learning, learning is said to be unfinished if one of the friends in the group has not mastered the subject matter. Meanwhile, the goals of cooperative learning according to

Slavin cooperative learning is differ from those of conventional groups who apply the competition system, where individual success is oriented to the failure of others. While the goal of cooperative learning is to create situations where individual success is determined or influenced by the success of the group (Slavin, 1994).

In this learning method there are stages in its implementation. Teacher act as facilitator who direct and motivate students to learn independently and foster a sense of responsibility and students will be pleased to discuss about English in the group. They can interact with peers and teachers as well as mentors. In the method regular or traditional learning teacher become center of all activity in the class. Otherwise, in jigsaw method, although teachers still control rules, they are no longer the center of classroom activity. Motivation peers can be used effectively in class to improve both students' cognitive learning and affective growth of students. One of the biggest challenges facing teachers is to motivate students. Teachers tend to use competencies to motivate students and often ignore their strategy in which there is cooperation and motivation of peers

that can be used to help students focus to academic achievement.

In jigsaw method, the classes are divided into small groups, many members of the group coinciding with the number of problems has to offer teachers, these groups are called to a home group. Each member of the home group was given a different problem, but each home group were given the same question in accordance with the indicators. With a certain time limit of each member of the discussion group completed the problem individually. A home group will split and form a new group that brings the same issues, the group is called expert group. In this group they are talking to the same perception of their answers. After finished, they returned to the home group and its members must socialize the results/answers from the experts through presentations per group. Discussion with jigsaw method is a development of innovative and cooperative learning in which students are very big role.

### **Review of Related Theories**

#### **Reading Comprehension**

Reading skill is important in language skills. Every students must

study and become master on it. Reading is a basic tool of learning. Reading is an accurate tool in promoting life-long learning. By mastering reading skill, learners have a technique to explore "world" and a chance to achieve their goals in life. There are many definitions of reading. Reading is the cognitive process of understanding a written message. Reading is a process of retrieving and comprehending from of stored information or ideas are usually some sort of representation of language, such as symbols to be examined by sign or by touch. Reading is approached as thinking – a process of infraction with textual material and sorting, evaluating and reacting to its organization and context ( M.c Whortr, 2005 : 1). Reading is the ability to draw meaning from the printed page and interpret this information appropriately. Reading is a receptive language process. It is psycholinguistic process in that it starts with a linguistic surface representation encoded by a writer and ends with meaning which the readers construct. There is thus as essential interaction between language and thought reading. The writer encodes thought as language and the reader

decodes language to thought( Homby. 1995: 1225). To summarize, reading is an ability of cognitive process or interaction between the graphic symbols and the language skills of a reader. Reading is also a process of communication between a writer and a reader.

There are three general theoretical perspectives that have guided research on jigsaw method as one of cooperative learning; firstly, it is anchored by **Piaget** theory on *cognitive-developmental*. The work of Piaget and related theorists is based on the premise that when individuals cooperate on the environment, sociocognitive conflict occurs that creates cognitive development, which in turn stimulates perspective-taking ability and cognitive development. Secondly, Piaget would likely agree with **Vygotsky's Social Developmental Theory** that knowledge is social, constructed from cooperative efforts to learn, understand, and solve problems. In other word, Vygotsky strengthen that social interaction with member of group more over a skilful teacher is meaningful way to develop students' competence. So, students who learn

reading skill in a group through jigsaw method will highly boost their learning motivation because student can share and negotiate to build the way of thinking, by having development competence will effect to students' reading comprehension.

Lastly, this study is rooted on *social interdependence theory* by Kurt Koffka quoted in Deutsch, M. (1949). According to Koffka's theory, *Social interdependence* exists when individuals share common goals, and each person's success is affected by the actions of the others. It may be differentiated from *social dependence* (i.e., the outcomes of one person are affected by the actions of a second person, but not vice versa) and *social independence* (i.e., individuals' outcomes are unaffected by each other's actions). There are two types of social interdependence: cooperative and competitive. The absence of social interdependence and dependence results in individualistic efforts. Social interdependence is one of the most fundamental aspects of being a human being and it affects all aspects of lives.

Koffka's theory is quite appropriate with the current study considering that groups (i.e. Jigsaw

method) were dynamic wholes in which the interdependence among members could vary. Koffka notions that: (a) The essence of a group is the interdependence among members (created by common goals), which results in the group's being a "dynamic whole," so that a change in the state of any member or subgroup changes the state of any other member or subgroup; and (b) an intrinsic state of tension within group members motivates movement toward the accomplishment of the desired common goals. For interdependence to exist, there must be more than one person or entity involved, and the persons or entities must have impact on each other in that a change in the state of one causes a change in the state of the others. Thus can be concluded that it is the drive for goal accomplishment that motivates cooperative and competitive behavior.

Refer to the above theories, researcher believes that reading instruction thought jigsaw method is able to improve the students' reading skill because students involved actively in discussion to comprehend reading text. By active interaction in leaning second language (L2) which is

English, and practice a lot through jigsaw guided by the teacher in learning can help the students proficient in English specifically reading skill.

### Research Methodology

In this research, the researcher used pre-experimental design by *pretest-posttest one group*. According to Arikunto (2006:85) states that "in this design the observation will be done for twice". They are before treatment which is called pre-test and observation after treatment which is called post-test. This study was conducted on Junior High School student in SMPN 13 Berau in academic year 2017. It is located at Jl. Pembangunan Bebanir Bangun, Regent of Berau, East Kalimantan Province, specifically student at seventh grade. The subject was all personal in SMPN 13 Berau and it took 30 students in second semester of the seventh grade students on SMPN 13 Berau. The specific object of this research is the use of jigsaw method in reading instruction. The research assessed students' achievement in reading comprehension through the use of jigsaw. In obtaining the data, the researcher used the test instrument

in this research. The researcher administered the two test, they are pretest and posttest. Technique of data analysis is activity to analyze and calculate the collected data. The data collected by the means of the test instrument have been analyzed differently based on specific purposes. In this work the data collected was analyzed using t-test, the steps are as follow: Scoring the students correct answer of pre-test and post-test. Scoring the students' answer sheet and the writer used formula stated by Arikunto (2006: 235) to scoring the test.

$$S = \frac{R}{N} \times 100 \%$$

Where:

S = The score

R = The number of correct answer

N = Total number of the test item.

- a. Classifying the students' scores.
- b. Normality

Normality was used to know whether data sample/population has normal distribution or not. To compute normality the data was analyzed by one sample Kolmogorov-

Smirnov with level of significant 0.05, it is mean that data has normal distribution if signification is more than 5% or higher than (>) 0.05.

- c. Homogeneity  
Homogeneity was used to demonstrate whether several sample/population variance have similarity (homogenous) or not. Researcher used ANOVA as s statistical tool to compute the data by the assumption that several sample/population variance is homogenous if the significant computation shows more than (>) 0.05

- d. Finding out the mean score by applying the formula :

$$X = \frac{\sum x}{N}$$

Where:  $\bar{X}$  = Mean Score

$\sum x$  = The sum of all score

N = The total number of subjects

The Researcher made a table for grouping the Mean performance in Pre-Test and Post-Test of Experimental Class based on the verbal scale By Antonio S. Broto below.

Table 1.1. Rating Scale

Scale	Verbal Interpretation
80-100	Excellent
60-79	Very Good
40-59	Good
20-39	Fair
0-19	Poor

- e. T-Test computation using computation with SPSS version 21.0 for windows.
- f. The hypothesis testing by comparing the significance

value with the level of significance(0.05).

**Finding and Discussion**

**Results finding of pretest and posttest using jigsaw method**

results of the pre-test. Here is the report of concerning the data

The score distribution of the description. The following table shows score of the test

**Table 1.2: Score of Students**

No	Student	Gender	Pretest	Pretest
1	Student 1	M	56	68
2	Student 2	M	60	72
3	Student 3	F	64	76
4	Student 4	F	64	80
5	Student 5	F	64	80
6	Student 6	F	68	84
7	Student 7	M	64	72
8	Student 8	F	68	76
9	Student 9	F	68	76
10	Student 10	F	64	76
11	Student 11	F	56	72
12	Student 12	F	68	80
13	Student 13	F	72	72
14	Student 14	F	68	80
15	Student 15	F	72	95
16	Student 16	F	56	76
17	Student 17	F	64	76
18	Student 18	M	64	76
19	Student 19	M	68	76
20	Student 20	M	64	76
21	Student 21	M	64	80
22	Student 22	F	64	80
23	Student 23	F	64	68
24	Student 24	M	60	68
25	Student 25	M	72	80
26	Student 26	M	76	92
27	Student 27	F	68	72



28	Student 28	F	68	72
29	Student 29	F	64	72
30	Student 30	F	64	80
Summation			2100	2451

**Table 1.3 The score of Pre test and Post test****Descriptive Statistics**

	N	Minimum	Maximum
Pre-Test	30	56	76
Post-Test	30	68	95

Based on computing SPSS program, It found score maximum and minimum of pre- test (The analysis before treatment) it was score of maximum was 76.00, and score of minimum was 56.00. (The analysis before treatment) and after treatment the score of maximum and minimum of post-test (The analysis after treatment) it was score of maximum was 95.00 and score of

minimum was 68.00 (The analysis after treatment). It was tell us that score maximum, minimum of post-test is higher than pre-test, after they are given a treatment using jigsaw method in the process of English teaching learning. The table below shown the result of students' score. It was included the students scores in qualification.

**Table 1.4 : The result of students score**

No	Descriptions	Qualification
1	Excelent	< 84 – 100

2	Good	< 72 – 83
3	Average	< 64 -71
4	Poor	< 60 -63
5	Very Poor	< 60

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The writer used scale 1 to 100 from 25 items with compare score of maximum, minimum and mean of pre-test and post test. And maximum pre-test show 76 and minimum show 56. It means include category fair and good. And score of maximum,minimum, of post-test show 95,and minimum 68.It means include category average and excelent.

#### Normality Distribution

The normal distribution test was used to check whether the tests were normally distributed. The analysis used Kolmogorov-Smirnov formula through SPSS 21.0 for windows. It used significant criteria 0.05. The data was stated in normal distribution if significant point bigger than 5% or 0.05 (i.e.  $\alpha > 0.05$ ). The following table was the result of normally distribution on pretest.

		Pretest
N		30
Normal Parameters <sup>a,b</sup>	Mean	12.9677
	Std. Deviation	2.020954
Kolmogorov-Smirnov Z		1.032
Asymp. Sig. (2-tailed)		.114
a. Test distribution is Normal.		
b. Calculated from data.		

In the test, the level of significance was set up 0.05. Based

on table 4.3, it shows the Asymp. Sig. (2-tailed) pretest of data is 0.114. Because significance  $0.114 > 0.05$ , so it can be concluded that the test has normal distribution. The succeeding on the output, the computation result shown as the data was distribute normally.

#### a. Homogeneity of Variance

The homogeneity of variance test was accomplished after

LeveneStatistic	df1	df2	Sig.
.011	1	29	.417

The level of significance in the test was established at 0.05. Moreover in the table 4.3 the Significant value was 0.417, it is higher than the level of determined significance 0.05 (i.e.  $0.417 > 0.05$ ). The point in LeveneStatistic show the smaller point is, the bigger homogeneity is. It draws a conclusion that the variances data is homogenous.

Refer to the current finding, it can be concluded that the students were not vary, they almost have the

conducted normal distribution test. LeveneStatistic test on SPSS 21.0 for windows was employed to analyze the data and to find out the homogeneity of variance. To find samples variant were homogenous, the significant of the data must be higher than 0.05, and the output as shown the following table:

same variant or homogenous. The existing this condition because the researcher gave treatment spread to the sample. During the research, all sample got the same proportion in reading instruction. Student who has difficulties in learning got emphasized treatment such as give intention guide and motivation, so, they were easier in learning. Whereas student who was smarter also got appreciation in their collaboration and participation.

#### **1. Finding of significant difference result of pretest and posttest using jigsaw method**

a. The result of paired sample correlations

After getting the scores of the student on pre-test and post-test, the data were statistically

While the table 4.9 (paired sample correlations) above shows the result of correlations between the pre-test and post-test, that is 0,557 and Sig.

computed to find the correlation between the pre-test and post-test.

The following table presents the result of the computation of correlation coefficient.

or probability was 0,001. Because Sig. is lower than the level of significance ( $0,000 < 0.05$ ). It means there is a good correlations between pre-test and post-test on

<b>Table 1.7. Paired Samples Correlations</b>			
<b>Test</b>	<b>N</b>	<b>Correlation</b>	<b>sig.</b>
<b>Pre Test &amp; Post Test</b>	<b>30</b>	<b>.557</b>	<b>.001</b>

sample of group.

b. The mean of pre-test and post-test performance

<b>Table 1.8 Paired Samples Statistics</b>				
		<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
	Pre-test	30	70	5.30216
	Post Test	30	81.666	6.45456

Based on computing SPSS program, it found mean of pre-test was 70, after treatment the of post-test was 81.666. It was tell us that mean of post-test is higher than pre-test, standard deviation from 30

students 5.30216 (Pre-test) and 6.45456 from 30 students (Post-test) It means that students can get higher score after they are given a treatment using jigsaw method in the process of English teaching learning.

- c. The result of paired sample test

After getting the scores of the student on pre-test and post-test, the data were statistically computed to find  $t$ -obtain with compare  $t$ -table. The following table presents the result of the computation of paired sample test.

<b>Table 1.10 Paired Samples Test</b>						
<b>Test</b>	<b>Mean</b>	<b>std.deviation</b>	<b>t-obtain</b>	<b>Df</b>	<b>t-table</b>	<b>Alpha</b>
<b>Pre-test&amp; Post-test</b>	<b>11,21875</b>	<b>5,14772</b>	<b>12,328</b>	<b>29</b>	<b>1.699</b>	<b>&lt; 0.05</b>

From the result above that the t-obtained was 12,328 higher than t-table 1.695, it showed that “jigsaw method” applying by the writer in the intervention process was effective in teaching reading comprehension.

#### d. Hypothesis testing

Finally, the calculation of the pre-test and post-test would be compared with the t-table. If the value of the t-test was higher than the t-table, the null hypothesis ( $H_0$ ) was rejected and the alternative hypothesis ( $H_a$ ) was accepted. On the other hand, if the value of the of the t-test was lower than t-table the null hypothesis ( $H_0$ ) was accepted and the alternative hypothesis ( $H_a$ ) was rejected.

By found t statistic value, the writer found 12,328 in paired sample. In the other side t table is 1,695. Because of  $12,328 > 1,695$ , it can be said that zero hypothesis ( $H_0$ ) is rejected and alternative hypothesis

( $H_a$ ) is accepted or prove that: “There is significance effect of effect of Jigsaw Method Jigsaw Method in Improving Students Reading Comprehension to The First Grade at SMPN 13 Berau.

#### **Findings and Discussion**

There were factors which influence the success of the study. The technique of presenting the materials which was used must be varied by means to attract the students’ motivation and more active in learning process. Here, the writer used jigsaw method in teaching reading comprehension.

The teacher supported the students to participate actively in class. In addition, most of students agreed and enjoy that use of jigsaw method could motivate them and they realized their ability improved. The outcome of this research verified that when individuals cooperate on the environment, socio-cognitive conflict occurs that creates

cognitive development, which in turn stimulates perspective-taking ability and cognitive development as Piaget's theory on Cognitive Developmental.

Practice jigsaw method in teaching and learning process promotes students to interact in peers or groups, it is able to occur experiential learning as Vygotsky's theory on Social Developmental explained that that knowledge is social, constructed from cooperative efforts to learn, understand, and solve problems. Teaching and learning process through jigsaw method is relevant with the theory because happening social interaction with member of group more over a skilful teacher is meaningful way to develop students' competence. So, students who learn reading skill in a group through jigsaw method will highly boost their learning motivation because student can share and negotiate to build the way of thinking, by having development competence will effect to students' reading comprehension. Therefore, all agreed that jigsaw method gave highly motivation to them in

learning and could encourage the student's interest in English lesson.

### **Conclusions**

In the light of the finding, the following conclusions were drawn:

1. The test instrument used in this research was appropriate in term of the objective and applicable in this particular situation because the prepared test curricularly valid and reliable.
2. The result of posttest slightly higher than pretest in conducted jigsaw method in SMPN 13 Berau.
3. There is significant difference of jigsaw method used that exists on respondents specifically students in SMPN 13 Berau during learning English as Second Language (ESL) specifically for reading instruction.

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