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The Influence of Using Jigsaw as a Method on Students' Reading Comprehension at the Seventh Grade of SMPN 7 Kota Serang

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Abstract

This research's objective was to find out the influence of using jigsaw on students' reading comprehension. The research was conducted in quantitative research by using true experimental design. The sampling technique used cluster random sampling which was divided into two classes. The experiment class was VII B and VII F as control class with 38 students in each class. The instrument of this research was test divided into two parts; pre-test and post-test given to both classes. The researcher used content validity and inter-rater reliability in order to make the instruments valid and reliable. The researcher used T-test formula to know the result. The result of the research showed that experiment class got means score 59.34 in pre-test and 67.53 in post-test. Meanwhile, students in control class got mean score 58.39 in pre-test and 64.29 in post-test. It shows that mean score of pre-test and post-test in experiment class is higher than control class. The calculation showed the result of t_{count} is higher than t_{table} (8.76 ≥ 1.99) with the significance 0.05. It can be concluded that there was influence of using jigsaw as a method on students' reading comprehension at the seventh grade of SMPN 7 Kota Serang.

INTRODUCTION

Reading is essential in target language. Students should have the initiative to read because many books are written in English. They can get some information and knowledge from many sources such as magazine, newspaper, brochures, or direction for electronic tools, and so on, written in English. Alyousef (2005:144) defined, "reading as an interactive process between the reader and the text which leads the reader to comprehend any information from the text." When students are reading, they are doing thinking process by comprehending all the

words, sentences, and paragraphs in order to get meaning of the text as a whole. In other word, reading is one of the most important skills to English language learner.

Teachers always do their best to achieve the learning goal through methods, models, or techniques of language teaching by improving their methods of teaching in every teaching learning process. Up to now, English teachers in Indonesia are often disappointed because of the students less satisfying scores in the examination. According to Progress in International Reading Literacy Study (PIRLS) in 2011, the International study about reading children in the World, Indonesia is on the 41st of 45 countries in the world. In addition, PISA 2009 database shows that Indonesia students' score is below the OECD average and on the 57th of 65 countries (OECD, PISA 2009 Database) (in Andriani, 2017: 34)

Considering the importance of reading skill, teachers of English in Indonesia must improve the teaching of reading comprehension. The teachers can use some methods of teaching reading that can make the students enjoy and stimulated to learn English especially in reading comprehension. One of them is by using Jigsaw. "Jigsaw is a method that emphasizes peer learning by dividing the labor of learning among small groups of students" (Aronson & Patnoe in Amador & Mederer, 2013: 90). In this case, jigsaw allows students to help each other understand information about corresponding topic by apportioning the work of learning – each student in a small group is responsible for acquiring expertise about a different topic, theory, or reading, and sharing their expertise with others in the group. The use of jigsaw to solve the problem in a group also developed skill especially in learning reading comprehension.

Based on the result of previous teaching program (PPLK) in the 13th September 2016 until 2nd December 2016, the researcher got an experience about English teaching and some information from English teacher. The English teacher at the seventh grade of SMPN 7 SERANG said that students had difficulties in comprehending words, sentences, and text. It was shown by the students' average score of English that under the minimum standardized score of the school (KKM) which was 75. In other word, in daily teaching reading, the teacher had done great effort to solve the students' reading comprehension problem. She had tried not only to use the English textbook and students' worksheet (LKS) but also some materials from internet, newspaper, and others. However, it still needs to be

enriched since the students' reading comprehension achievement scores were less satisfying yet. Therefore, giving various materials was not the only way to overcome the problem. Teacher can use appropriate teaching method to improve students' reading comprehension achievement.

THEORETICAL FRAMEWORK

General Concept of Reading Comprehension

Reading is one of the major language skills. Reading skills play an important role in facilitating the reader to comprehend the written materials. They can get a lot of information from various resources in order to enrich their knowledge by reading. So, they also should know that there are three skills in reading; skimming, scanning, and reading for detailed comprehension.

Skimming

Skimming is a way to find main idea quickly. Harmer (2007: 202) stated,

"Students also need to be able to skim a text if they were casting their eyes over its surface to get general idea of what the film is about (for example, when we look quickly at a report to get a feel for the topic)."

Scanning

Scanning is a way to find specific information quickly. Harmer (2007: 202) stated that the students need to be able to scan the text for particular hits of information they are searching (for example, when we search quickly an article to looking for author or other detail).

Reading for Detailed Comprehension

In reading for detailed comprehension, reader can more concentrate of what they are reading. So, they are looking for detail information of the text. Harmer (2007: 202) stated, "Reading for detailed comprehension, whether looking for detailed information, must be seen by students as something very different from the reading skills mentioned above; skimming and scanning."

Reading Comprehension

Reading comprehension is a process of understanding the information in the text by using reader's background knowledge. Duke & Pearson (2001: 423) stated, "Reading comprehension is a process in which the reader constructs meaning as the building materials the information on the knowledge stored in the reader's head." Moreover, Snow (2002: 11) stated, "Reading comprehension is a process of

simultaneously extracting and constructing meaning through interaction and involvement with written language."

Based on all the theories above, the readers save the information from the text in their head when reading and they comprehend it through interaction and involvement with written language. In conclusion, reading can help the readers to increase their comprehension.

Teaching Reading Comprehension

According to Gear (2006: 16), "There are three equally important stages in teaching reading process; pre-reading, during reading, and post-reading." In during Reading, teacher helps students how to think while they are reading. In pre-reading, teacher helps students focus on the text prior to reading. In post reading, teacher helps students to response the text in a meaningful way. From those theories it can be concluded that teaching reading comprehension must be engaged with all the things that can support either for teacher or text can be comprehend by students easier.

Definition of Jigsaw

In jigsaw, academic materials are presented to the students in the text form, and each student is responsible for learning a portion of material (Rusman in Shoimin, 2014: 90). So, the purpose of jigsaw is to influence comprehension in a large amount of material.

The Procedure of Jigsaw

There are many kinds of implementing jigsaw especially in relation with the teaching of reading. According to *The Master Teacher* (2010), students are assigned to investigate different aspects of the same problem or issue. Members of each group then disperse during class among home groups and members of other group explain about what they have learned in expert groups. The detailed procedure is as follows:

Step 1: Selects an appropriate text that has the same number of paragraphs as members of each group. For example, there are nine students in the class. So, there are three groups of three students. Then, select the text that has three paragraphs long.

Step 2: Prepares a chart that includes all three paragraphs and will be appropriate for the content. For example, the following chart can be used for main idea and details:

Table 1

	Paragraph A	**Paragraph B**	**Paragraph C**
Main Idea			
Details			

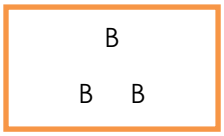
Step 3: Makes three copies of the selected reading. Label the first paragraph A, the second paragraph B, and the third paragraph C. Then, cut the text into three pieces.

Step 4: Put the students into groups, and distributes copies of the chart. Then, the students read the text that has been labeled.

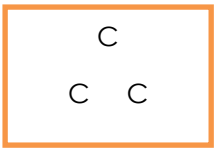
Step 5: Put students with paragraph A together, students with paragraph B together and students with paragraph C together. This groups named "Home Group", the groups look like this:

Table 2

Group1



Group 2



Group 3

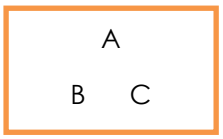
Step 6: Remind students of pre-reading strategies. They should look for text features and text structures.

Step 7: Students discuss about the text.

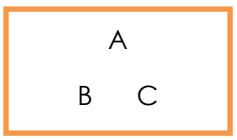
Step 8: Students fill in the main idea and details in the column of their chart that corresponds to their paragraph (i.e., students with paragraph A fill in column A, etc.).

Step 9: Re-group the class into three new groups. New group named "Expert Group". In here, the group should have different paragraph and groups look like this:

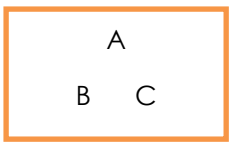
Table 3



Group 1



Group 2



Group 3

Step 10: Students share the main idea and details about their paragraph to each other.

Step 11: Students fill in the column after discuss about their paragraph.

Step 12: Students come back to home groups and discuss again.

Step 13: Students answer the reading test consisting of five items of multiple choices.

Advantages of Jigsaw

There are some advantages of jigsaw. Students can ask question, listen, respond, and explain.

1. Ask question

Questions are "a potent device for initiating, sustaining and directing conversation" (Dickson & Hargie in Edmunds & Brown, 2010: 4). By asking questions, students can arouse interest and curiosity in a topic, assess the extent of the students' knowledge also encourage critical thought and evaluation.

2. Listen

Listen is very important to hear the explicit and underlie implicit meanings of what is said. All members of the group have a responsibility to listen. Doing this can increase continuity in the discussion (Brookfield & Preskill in Edmunds & Brown, 2010: 6).

3. Respond

In respond, students can keep their mind as encouraging as possible. Students' are often nervous about speak in a group, but from positive responses, the tutor can develop an atmosphere where students feel safe to answer without fear of being criticized and this will facilitate the discussion (Hattie & Timperley in Edmunds & Brown, 2010: 7).

4. Explain

Explain is an attempt to provide understanding of a problem to others' and understanding in this situation involves 'seeing connections which were not seen' (Brown in Edmunds & Brown, 2010: 8). For discussion, as well as knowing how to give a good explanation, it is also necessary to think about when to use explanations. If used too early in a session, explanations can induce passivity in a group. It is usually better to leave explanations until after the group has attempted the task for the session; including the explanations as part of the session summary can be effective. It is useful to plan explanations of the key topics that expect to cover during the session and any related concepts which are particularly difficult for the group of students to understand.

RESEARCH METHODOLOGY

This research used quantitative method and true experimental design in order to find out whether there is any influence of using jigsaw as method on students' reading comprehension. Therefore, the researcher used Post-test only Control Design. The researcher collects two classes consisting of experimental and control class. According to Sugiyono (2009: 73), Post-test only Control Design is described as follow:

Table 4

R	X	O_2
R		O_4

There are two groups in this design; experimental (R) and control (R). Experimental group is given treatment (X) by using jigsaw, while control group is not given treatment. Both groups received pre-test to get the first data; it is done before the implementation of the treatment. Then, both groups received post-test to get the second data. Finally, researcher should find the influence of having treatment (O_2) and the influence of not having treatment (O_4).

Finding and Discussion

Findings

The first, researcher made validity sheet then compared it to Curriculum 2013 at the seventh grade of SMPN 7 Serang. The researcher asked to English teacher as expert to help analyzing whether the concept of the test was valid or not. Thus, the validity did not need a trial and statistic. Here is the validity of the research:

Table 5

Basic competence	3.5 Understand the social function, structure of the text, and linguistics characteristic of descriptive text by stating and asking about description of people, animal, and thing in a very simple way, and in accordance with the context. 4.5 Arrange a very simple oral and written descriptive text, to describe the people, animal, and thing, by focusing on social function structure of the text, and linguistics characteristic accurately and in accordance with the context.
Indicator	Identify information and structure in the descriptive text and

	answer the questions in the simple descriptive text accurately.
Method	Jigsaw
Instrument of Test	Pre – Test and Post – Test Students answer multiple choices test about descriptive text.
Time Allocation	2 X 40 Minutes

The second, researcher used inter-rater reliability to measure the reliability. The researcher cooperated with the English teacher of SMPN 7 Kota Serang in scoring students' reading comprehension tests. Here are the results between the two raters by interpreted the value of Cohen Kappa; pre-test in experimental class showed 0.51 agreements, pre-test in control class showed 0.53 agreements. Post-test in experimental class showed 0.61 agreements and post-test in control class showed 0.54 agreements. From the results above, it can be concluded that the data of pre-test and post-test in experimental and control classes were reliable.

The third, researcher used graphical method of Hatch and Anne (2000) for normality of distribution test. The test of normality focused on pre-test and post-test. In pre-test of experimental class, the highest score is 76 and the lowest score is 40. Calculated the range (R) is the highest score – the lowest score (76-40=36). Calculated the sum of classes (BK) and the sum of students (N) is BK = 1 + 3.3 log N. So, BK = 1 + 3.3 Log 38 = 1 + 3.3 (1.57) = 1 + 5.18 = 6.18 = 6. Calculated the interval of class (I) is I= R/ BK = 36/6 = 6. Calculated the mean (X ̄) is $\bar{X} = \frac{\sum f X_i}{\sum N} = \frac{2235}{38}$= 58,8. Determined the standard of deviation (S) is $= \sqrt{\frac{N\left(\sum f.X_i^2\right)-\left(\sum f.X_i\right)^2}{N\,(N-1)}} = \sqrt{\frac{38\,(134833.5)-(2235)^2}{38\,(38-1)}} = \sqrt{\frac{5{,}123{,}673-4{,}995{,}225}{1406}} = \sqrt{\frac{128448}{1406}} = \sqrt{91.36} =$ S9.55 .

In post-test of experimental class, the highest score is 83 and the lowest score is 46. Calculated the range (R) is the highest score – the lowest score (83-46=37). Calculated the sum of classes (BK) and the sum of students (N) is BK = 1 + 3.3 log N. So, BK = 1 + 3.3 Log 38 = 1 + 3.3 (1.57) = 1 + 5.18 = 6.18 = 6. Calculated the interval of class (I) is I= R/ BK = 37/6 = 6.18. Calculated the mean ($\bar{X}$)is $\bar{X} = \frac{\sum f X_i}{\sum N}$ $=\frac{2530}{38}$ =66.57. Determined the standard of deviation (S) is S$= \sqrt{\frac{N\left(\sum f.X_i^2\right)-\left(\sum f.X_i\right)^2}{N\,(N-1)}} = \sqrt{\frac{38\,(173288)-(2530)^2}{38\,(38-1)}} = \sqrt{\frac{6{,}584{,}944-6{,}400{,}900}{1460}} = \sqrt{\frac{184{,}044}{1640}} = \sqrt{130{,}899} =$ 11,44. In pre-test of control class, the highest score is 76 and the lowest score is 40. Calculated the range (R) is the highest score – the lowest score (76-40=36).

Calculated the sum of classes (BK) and the sum of students (N) is BK = 1 + 3.3 log N. So, BK = 1 + 3.3 Log 38 = 1 + 3.3 (1.57) = 1 + 5.18 = 6.18 = 6. Calculated the interval of class (I) is I= R/ BK = 36/6 = 6. Calculated the mean ($\bar{X}$)is $\bar{X} = \frac{\sum f X_i}{\sum N} = \frac{2199}{38}$= 58,53. Determined the standard of deviation (S) is $S = \sqrt{\frac{N\left(\sum f X_i^2\right)-\left(\sum f X_i\right)^2}{N\,(N-1)}} = \sqrt{\frac{38\,(1306215)-(2199)^2}{38\,(38-1)}} = \sqrt{\frac{4,963,617-4,835,601}{1460}} = \sqrt{\frac{128,016}{1640}} = \sqrt{91.04}$ =9.54.

In post-test of control class, the highest score is 83 and the lowest score is 46. Calculated the range (R) is the highest score – the lowest score (80-46=34). Calculated the sum of classes (BK) and the sum of students (N) is BK = 1 + 3.3 log N. So, BK = 1 + 3.3 Log 38 = 1 + 3.3 (1.57) = 1 + 5.18 = 6.18 = 6. Calculated the interval of class (I) is I= R/ BK = 34/6 = 5.6. Calculated the mean ($\bar{X}$)is $\bar{X} = \frac{\sum f X_i}{\sum N} = \frac{2368}{38}$ = 62,31. Determined the standard of deviation (S) is $= \sqrt{\frac{N\left(\sum f X_i^2\right)-\left(\sum f X_i\right)^2}{N\,(N-1)}} = \sqrt{\frac{38\,(151279.5)-(2368)^2}{38\,(38-1)}} = \sqrt{\frac{5,748,621-5,607,424}{1460}} = \sqrt{\frac{100,424}{1640}} = \sqrt{61,23} =$ $S^{10.02}$.

Based on the result, it can be concluded that the pre-test and post-test of both classes was normally distributed.

The fourth, researcher used homogeneity test by comparing the value of two variants (biggest and smallest variant) with the level of significance 0.05 (5 %). Calculated the value of F_{count} by using the formula is $F_{count}=\frac{BV}{SV}$. In pre-test, $F_{count} = \frac{9.8}{9.7}$ = 1.01. Calculated the value of $\mathbf{F_{table}}$ by using the formula is F_{table} = F (1 – a)(dk = k)(dk = N – k – 1). F_{table}= F (1 – 0.95)(dk = 1)(dk =35). F_{table}= 1 (as numerator) and 35 (as denominator). The value of F_{table} with the level of significance 0.05 (5 %) is 4.121. The criteria of test as follow, if $F_{count} \leq F_{table,}$ it was calculated $F_{count} \leq F_{table}$ or 1.01 ≤ 4.121. It can be concluded that the data of pre-test in experimental and control class was homogenous. In post-test, $F_{count} = \frac{10.00}{9.5}$ = 1.05. Calculated the value of $\mathbf{F_{table}}$ by using the formula is F_{table} = F (1 – a)(dk = k)(dk = N – k – 1). F_{table}= F (1 – 0.95)(dk = 1)(dk =35). F_{table}= 1 (as numerator) and 35 (as denominator). The value of F_{table} with the level of significance 0.05 (5 %) is 4.121. The criteria of test as follow, if $F_{count} \leq F_{table,}$ it was calculated $F_{count} \leq F_{table}$ or 1.05 ≤ 4.121. It can be concluded that the data of post-test in experimental and control class was homogenous.

The fifth, researcher used t-test hypothesis by using formula as follow,

$t_{count} = \frac{M_x - M_y}{\sqrt{\left(\frac{\sum x^2 + \sum y^2}{N_x + N_y - 2}\right)\left(\frac{1}{N_x} + \frac{1}{N_y}\right)}} = \frac{67.53 - 64.29}{\sqrt{\left(\frac{94.81 + 97.41}{38 + 38 - 2}\right)\left(\frac{1}{38} + \frac{1}{38}\right)}} = \frac{3.24}{\sqrt{\left(\frac{192.72}{74}\right)\left(\frac{2}{38}\right)}} = \frac{3.24}{\sqrt{(2.60)(0.05)}} = \frac{3.24}{0.37} =$ 8.76. T is T-value. M is sum of deviation on each group. $\sum x^2$ is sum of deviation quadrate on experiment group. $\sum y^2$ is sum of deviation quadrate on control group. N is subject of quantity. Calculated the value of t_{table}, the researcher used the formula as follow, d.f = (N_x+ N_y – 2) = (38 + 38 – 2) = 74. t_{table} with the level of significance 0.05 (5 %) was 1.99. The criteria of testing as follows, if $t_{count} \leq t_{table}$, it means that the null hypothesis (H_0) is received. Based on the result of test of mean difference significant (independent t_{test}), it was Calculated $t_{count} \geq t_{table}$ or 8.76 ≥ 1.99. The alternative hypothesis was received. It can be concluded that there was an influence of using jigsaw as a method on students' reading comprehension at the seventh grade of SMPN 7 Kota Serang.

Discussion

This research involved experimental and control group with implementation of pre-test, teaching and posttest in two weeks. The research was conducted on 4th April-13th April 2017. The population was students at the seventh grade of SMPN 7 SERANG that consist of nine classes. The population from the classes was 353 students and each class that consist of 38-40 students. This research used cluster random sampling technique and the researcher took 76 students as samples by using lottery. The result showed that VII B as experimental class while VII F as control class. The researcher used test as the instrument to know the influence of using jigsaw as a method on students' reading comprehension. The tests were pre-test and post-test. The tests were conducted to get the data of students' reading comprehension. The data were collected in four meetings of the research. The pre-test was given to the both of the group at the first meeting. Then, the researcher did treatment (jigsaw) twice in experimental class and non-treatment (discussion) in control class. Finally, the post-test was given at the last meeting. After collecting the data, the researcher calculated and analyzed the students' score of both classes in pre-test and post-test.

CONCLUSION and SUGGESTION

The result of the research showed that experiment class got means score 59.34 in pre-test and 67.53 in post-test. Besides, students in control class got mean

score 58.39 in pre-test and 64.29 in post-test. It shows that mean score of pre-test and post-test in experiment class is higher than control class. The calculation showed the result of t_{count} is higher than t_{table} (8.76 ≥ 1.99) with the significance 0.05. It can be concluded that there is influence of using jigsaw as a method on students' reading comprehension at the seventh grade of SMPN 7 Serang and it was proven.

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