THE USE OF DISCOVERY METHOD IN TEACHING READING COMPREHENSION ON NARRATIVE TEXT

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Abstract
The purpose of this research is to investigate the effectiveness of discovery method in teaching reading comprehension. The design of research used is a pre-experimental research, and the data were collected by using measurement technique with multiple-choice reading test as the tool of collecting data. The obtained data were analyzed by using t-test. The results of data analysis showed that discovery method has the effect on the students’ ability in reading comprehension. The mean score of the students’ pre-test was 58.2 whereas the mean score of post-test was 64.8. The effect size of the treatment was 0.98 which is categorized as moderate effect. Thus, the alternative hypothesis that the use of discovery method in teaching reading comprehension on narrative text is effective to the eighth-grade students of SMP Kartika Kubu Raya in academic year 2016/2017. Therefore, the researcher believes the teachers can use the discovery method in their teaching learning process, especially in reading comprehension on narrative text.

Keywords: Discovery, Narrative Text, Reading Comprehension.

INTRODUCTION

Reading is one of the most important skills in English. It is where reader and author interact through written language. The skill’s process involves decoding the letters that form a word that lead to sentences into an understanding mind. Reading is productive to increase students’ knowledge if they are able to understand the text they read. However, it is becoming less productive when the students have difficulty in understanding the idea in text.

Through reading activity, the students will be able to get a lot of things from the text. The most important thing is the knowledge. From this point, the students will be able to learn new things through reading. In addition, they can also be entertained by tales, poems, or funny stories.

Based on an interview with a teacher at the eighth grade of SMP Kartika Kubu Raya, the method used was only reading the whole text together, and then sometimes they stopped when facing difficult vocabulary. The monotonous techniques provided by the teacher made the students faced the same way of teaching-learning process for most of the English classes. As the result, the students’ achievement in reading was not significantly developed.

In specific, the writer found that most of the students were having difficulty in understanding the content of the text. The students often forced to understand every word of a text, whereas in some cases they actually only need to focus on the reading purpose to make them effectively gather the information from the text.
According to Alfieri et al (2011, p. 4), who conducted an analysis of 360 comparisons between discovery-based teaching and direct teaching, discovery-based learning led to greater learning than the other method of instruction in comparison. In another research to fifty-seven seventh graders involving 24-item test, Balim (2009, p. 7) showed that the application of discovery-based learning compared to traditional instruction had a significant difference with the average final score of experimental group (Discovery-based learning), i.e. 14.84, and control group (traditional instruction), i.e. 9.95. It shows discovery-based learning has a positive effect upon the success of students. In connection with the previous research that has been conducted, discovery method is worth being applied in teaching reading.

The research was conducted to investigate the effectiveness of discovery method in teaching reading comprehension to the eighth grade students of SMP Kartika Kubu Raya in academic year 2016/2017.

According to Birch (2002, p. 2), reading is an activity of understanding the message in the text. Blachowicz & Ogle (2008, p. 1) stated that “reading is comprehending-making sense of what is read.” In respect of these standpoints, it can be concluded that reading is an activity of understanding and making sense of the message in the text.

In the terms of reading comprehension, Blachowicz & Ogle (2008, p. 28) saw it as a process which does not happen in one point, but takes place over time. In addition, Long & Chong (2001) as cited in Willis (2008, p. 127) stated that “comprehensive understanding of reading can only be achieved by the ability to connect each new word, sentence, or page that came before.” From these notions, reading comprehension can be seen as a process of comprehensive understanding of reading which can only be achieved through the ability to connect every word, sentence, or page.

To be successful at reading comprehension, according to Willis (2008, p. 127), “students need to be actively process what they read. That processing skill requires that students have automatic reading skills and fluency, necessary vocabulary, and text-appropriate background knowledge.” In addition, (Mikulecky, 2008, p. 3) says that “automatic reading skills and fluency implies the comprehension of ideas rather than for individual words.” She further says that “reading comprehension depends on vocabulary knowledge and vice versa, the more students read, the better their vocabulary becomes. And the more vocabulary they know, the more they can read.” At last, the prior knowledge is one of essential factors in constructing meaning from the text.

In building a strong foundation of reading comprehension, Chesla (2009, p. 17) suggested four aspects, they are: (1) Getting the essential information from the passage; (2) Determining the main idea; (3) Determining the meaning of unfamiliar words; and (4) Distinguishing between facts and opinions.

Teaching reading comprehension to EFL (English as Foreign Language) students is not an easy way to do because the learners not only use the reading strategies but also use their English knowledge such as vocabulary and grammar. Nuttal (1982, p. 21) states that “the aims of teaching reading comprehension are to develop the students’ ability to extract the message from the content. In teaching
reading comprehension, the teachers are trying to put something in the students’ mind to take the information by them”.

In teaching reading comprehension, the students have to develop the ability to read by themselves. An independent reader must be able to tackle text that she/he never seen before. The reading teachers have to equip the students to do so. The teachers’ role is to make the students have their own ability to read, especially to understand the text well. It is necessary for the teachers to motivate and help the students comprehend the reading based on students’ learning. Reading is a good way to improve general English. It also gives the chance to learn new vocabulary.

Teale & Yokota (2000) in Westwood (2001, p. 9) states that “comprehension must be the central focus of teaching children to read and not something to be emphasized only after children have learned how to decode and identify words”. The goal of teaching reading according to Bamberg (1975, p. 13) is to encourage the full use of individual’s capacities in reading. It can be concluded that comprehension is an important aspect in reading, not merely decode and identify words.

In teaching reading, especially to comprehend the text, there are three important factors in the effective teaching of reading comprehension; they are vocabulary, text comprehension, and teaching strategy for reading comprehension (Karmil et al., 2000, p. 345; Rini, Sada, dan Salam, 2014). Those factors are important in teaching reading comprehension because they are not only engaged with students’ ability that the teacher should be aware of, but it also about teaching strategy used by the teacher in the classroom.

Learning about the vocabulary in this case refers to the vocabulary development and vocabulary instruction which play an important role in the understanding about what has been read from the text. Text comprehension is an active process that requires interaction between the students and the text in understanding about what is the main idea of the text, and what has been discussed in the description. Teaching strategies is essential to make the students have a better progress in their reading. The teacher has to be creative enough to provide a direct instruction and to design or implement activities that support the students’ understanding.

Teaching reading, indeed, needs strategies to make the teaching process successful. Pang et al (2003, p. 14) said that there are some practical applications in teaching reading comprehension as follows: (1) Focusing on concept and vocabulary used to express them; (2) Building on students’ background knowledge, e.g. by having a group discussion before trading; (3) Guiding the students by modeling the actions they can take to improve comprehension. These actions include: asking question about a text while reading; identifying main ideas; using prior knowledge to make predictions; (4) Teaching a combination of different strategies is better than focusing on one; and (5) Using different methods in teaching text comprehension.

Teachers can use combination of the following: (1) Co-operative or group learning; (2) Graphic organizers; (3) Asking and answering questions; (4) Story structure; (5) Summarizing; and (6) Focusing on vocabulary.
In particular, this research emphasized the students to be able to get the essential information, determine the main idea, and determine the meaning of unfamiliar words. In order to achieve these objectives, different strategies are used, such as cooperative and group learning, questions, and summarizing. While for the method, which is discovery, will be described in the next section.

The root of discovery method is the theory of constructivism, with the commonsense where human learn best through their own experience (Westwood, 2008, p. 5). Further, he explains that constructivism theory is described as student-centered approach. Later on, specific terms under the approach emerged, such as inquiry-based method, project-based learning, and computer-assisted learning. Discovery method, along with problem-based learning, project work, and resource-based learning fall under inquiry-based method.

According to Ormrod (2000) as cited in Westwood (2008, p. 23), “Discovery learning requires students to investigate topic, issue, or problem by active means, obtain pertinent information, interpret causes and effects where relevant, and arrive at conclusions or solutions”. He further says that “discovery is a part of constructivism theory about human learning, where the learners involve in hands-on discovery, problem solving, inductive thinking and reasoning.” These early theorists also recognized that learning can only occur to the extent that new information links successfully with a learner’s prior knowledge and experience. In applying discovery method, according to Westwood (2008, p. 28), there are three general consensuses regarding to discovery learning where it will be effectively applied when: (1) The process is carefully structured; (2) Students have prerequisite knowledge and skills; (3) Teachers provide any necessary support during the investigations.

Alfieri et al (2011) explained that in general, discovery learning can be in form of assisted or unassisted learning. In assisted learning, the students will be provided minimal guidance and conceptual understanding about the material contingent on the difficulty of the target information, while the unassisted learning, on the other hand, expects the students to be able to understand independently the material provided to them. In addition, Westwood (2008, p. 28) also divides discovery method into open-ended and guided discovery. Furthermore, he stated that open-ended discovery, similar with unassisted learning, sometimes provides unsatisfying result, particularly to students with poor study skills and difficulties with inductive reasoning. While on the other hand, guided or assisted discovery provides the student with lesson objective, initial explanation, suggestions for procedure, and assistance in the learning process. These aids in learning ensure that the understanding is achieved.

The application or the concept of discovery method, especially the guided discovery, has been described Schmidt et al (2007) as cited in Westwood (2008, p. 36) as a motivating method which is enjoyed by the learners. Guided discovery learning takes following format: (1) Topic or issue is identified or posed in form of questions; for example, what can we find out about magnets? How can magnet be made; (2) Teacher and students work together to brainstorm ideas for ways of investigating the topic; (3) Students work individually, in pair or in small groups to obtain and interpret data (4) Inferences and tentative conclusions are drawn,
shared across groups and modified if necessary; (5) Teacher clears up misconception; the teacher also summarizes the findings and helps to draw conclusions.

The use of question in discovery learning is underlined by Westwood (2008, p. 29), “during the discovery activities, the teacher may give suggestions; raise questions; or provide hints.” In connection with reading comprehension, Nation (2009, p. 29) argues that “comprehension questions is one form of the language teaching techniques that most frequently used to train learners in reading.” Based on these points of view, the role of question is broadly used in term of teaching reading.

Asking question is important to make students active in learning. According to Westwood (2008, p. 62), questioning is used to: “(1) Facilitate students’ participation and communication during the lesson; (2) Focus attention on key aspects of a topic; (3) Evaluate students’ understanding; (4) Stimulate particular types of thinking; (5) Review essential content; and (6) Control the group of students and hold attention.”

Brown (2008, p. 171) divides question into two broad categories, display questions and referential questions. A display question is related to the information that is already known by the teacher. It is used to elicit the prior knowledge and to check comprehension, while referential question is used to request of information that is not known by the teacher, i.e. to know the opinion, explain, or clarify. In the simplest form, questions can either be closed-ended or open-ended form. According to Dornyei (2003), closed-ended question is provided with ready-made response options to choose from. It can be effectively used in early conversations to encourage participation. While on the other hand, open question elicits longer and richer answers, because it permits greater freedom of expression. Hart (1996, p. 1) suggested “five W’s” question in order to gather enough information for the audiences to understand what happened, they are who; what; when; where; and why.

During the learning process, a guided question sheet, which consists of who; what; when; where; and why is used to gather information from the subject learned. The sheet helps the students to investigate the topic which is being learned.

METHOD

This research used pre-experimental research methodology with group pretest-post-test design. The tests were administered to find out the interval score between these two tests.

In SMP Kartika Kubu Raya, there are two classes for the eighth grade, i.e. A and B class. The A class consists of 25 students while the B class consists of 24 students which make the population of this research is 49 students. The sampling technique used was purposive-cluster sampling. Therefore, B class which had better score of achievement, according to the teacher’s data, was chosen as the sample of this research.

In order to make good instrument, the writer analyzed the data gathered from the try out test. This analysis was to ensure that the tool is valid and reliable.
This analysis was also to ensure the level of difficulty and the discriminating power of the test items.

After constructing the table of specification of the test, the test items should be analyzed by using item analysis of difficulty and discriminating power. The form of the test is multiple choice which consist of twenty items. The table of specification of test items are described in table 1 below.

**Table 1. Table of specification of test items**

<table>
<thead>
<tr>
<th>Indicators of Students’ Achievement</th>
<th>Form of the items</th>
<th>Remarks</th>
<th>Number of the Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Identifying facts and details in the text</td>
<td>Multiple Choice</td>
<td>Focus on retrieve Explicitly Stated Information</td>
<td>3 items (1,6,15)</td>
</tr>
<tr>
<td>b. Identifying main idea from the text</td>
<td>Multiple Choice</td>
<td>1. Finding the main idea 2. Looking for specific Ideas (details) 3. Searching for definition of word vocabulary</td>
<td>10 item (3,4,7,8,11,12,13,16,17,18)</td>
</tr>
</tbody>
</table>

While to measure the overall reliability of the test, Kuder Richardson formula 21 was used.

After the test items were tested in the pretest and posttest, the data must be analyzed to calculate the effect size of the test. The effect size measured the effectiveness of the treatment given. The sequence to calculate the effect size is calculating the mean of difference score; standard deviation of the difference scores; estimated standard error; test significant of the students’ score, and the effect size analysis.

**RESULT AND DISCUSSION**

**Result**

After conducting the research in Teaching Reading Comprehension on Narrative Text to the Eighth Grade Students of SMP Kartika Kubu Raya in Academic Year 2016/2017, the writer obtained the substantial data for the sake of research findings and hypothesis testing. Then, to answer the research problem, the writer analyzed the data by using t-test and effect size formula.

The number of participants both in pre-test and post-test were 25 students. In the pre-test, the highest score was 90 and the lowest was 35. While in the post-test,
the highest score was 90 and the lowest was 45. Comparing the two test scores, overall, there were 17 students’ whose score increased, 7 students unchanged, and 1 student decreased.

The sums of all the pre-test scores were 1,455 while the sums of the post-test scores were 1,625. From these scores, it was found that the difference of each pair of score of pre-test and post-test was 165.

Based on the data above, the calculation was conducted to measure the effect size of the treatment. Then, the proceeding calculation:

1. The analysis of the mean of the difference score

\[ \bar{D} = \frac{\sum D}{n} \]
\[ \bar{D} = \frac{165}{25} \]
\[ \bar{D} = 6.6 \] …………..(1)

After calculating the mean of each score, the next step was calculating the mean of difference score. The mean of difference score can be calculated by dividing the mean of each score with the number of students. The mean of each score was 165 and the number of students was 25. From the calculation, it was found that the mean of difference score was 6.6.

2. The analysis of standard deviation of the difference scores

\[ S_D = \sqrt{\frac{\sum D^2 - \frac{\sum D^2}{n}}{n-1}} \]
\[ S_D = \sqrt{\frac{2176 - \frac{165^2}{25}}{24}} \]
\[ S_D = 6.72 \] …………..(2)

3. The analysis of estimated standard error

\[ S_{\bar{d}} = \frac{S_D}{\sqrt{n}} \]
\[ S_{\bar{d}} = \frac{6.72}{\sqrt{25}} \]
\[ S_{\bar{d}} = 1.34 \] …………..(3)

4. The analysis of test significance of the students’ score

\[ t_{obtained} = \frac{\bar{D}}{S_{\bar{d}}} \]
5. The effect size analysis

\[
ES = \sqrt{\frac{1}{N}}
\]

\[
ES = 4.92 \sqrt{\frac{1}{25}} 
\]

\[
ES = 0.98
\]

From the result of pre-test and post-test, there is a different achievement. The mean of the student’s score in post-test (64.8) is higher than the mean of the student’s score in pre-test (58.2). The result of the \( t \)-test shows that the obtained \( t \)-value is 4.92 which is higher than \( t \)-table value with the 25 degree of freedom which is 2.060 at the 0.05 level. It is also strengthened by the result of the computation of the effect size of the treatment which is 0.98 or categorized has the moderate effect.

Based on the computation, the alternative hypothesis which stated that the use of Discovery Method in teaching reading comprehension on narrative text to the eighth grade students of SMP Kartika Kubu Raya in academic year 2016/2017 is accepted and the effect is categorized as “moderate effect.

Table 2. The Criteria of Effect Size

<table>
<thead>
<tr>
<th>Effect Size</th>
<th>Qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–0.20</td>
<td>Weak effect</td>
</tr>
<tr>
<td>0.21–0.50</td>
<td>Modest effect</td>
</tr>
<tr>
<td>0.51–1.00</td>
<td>Moderate effect</td>
</tr>
<tr>
<td>&gt;1.00</td>
<td>Strong effect</td>
</tr>
</tbody>
</table>

The finding, therefore, confirms the suggestion from previous researchers, Alfieri et al and Balim A.G, who stated that discovery method is an effective method compared to traditional style. It can be concluded from the results that the use of discovery method is effective in teaching Reading Comprehension on Narrative Text to the Eighth Grade Students of SMP Kartika Kubu Raya in Academic Year 2016/2017.

Discussion

In this research, the writer used discovery method as an alternative solution to help students to see whether if it is effective in teaching reading comprehension on narrative text. The method helps to improve the students’ understanding in narrative text because it provides the students the experience to work by themselves. In the learning process, the 5 W’s questions were applied in form of
discovery sheet as a guidance to help the students to find out the information in the narrative text. In this way, students were asked to work in individual, pair, and group within the three meetings respectively.

Besides providing the self-experience in understanding the text, the students also enjoy practicing by using discovery sheet. It provides the chance for the students to interact to their friends by using English rather than only listening to the teacher’s explanations all the time. Therefore, it increases the students’ enthusiasm during the learning process and ultimately brings more success to their achievement.

However, there were some problems found in the implementation of the discovery method in teaching reading comprehension on narrative text. The first problem was that some of the students were still confused about how to answer the discovery sheet because the writer only explained the procedure of writing the answer orally in front of the class. Therefore, the writer had to explain the procedure for several time to ensure all the students follow the directions correctly and lastly, the writer also write the procedure on the blackboard.

The second problem was the English subject schedule which was precisely on national examination. Therefore the meeting had to be postponed for e week. Even though the writer was able to reschedule the meeting in the next week, a week off made the writer had to explain all the procedures in the first meeting all again because most of the students were difficult to remember the procedures explained in the last meeting. Fortunately, the explanation did not take a lot of time because the students were still be able to memorize some parts of the material explained and given in the previous meeting.

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Number of Correct Answer</th>
<th>Number of Students</th>
<th>Level of Difficulty</th>
<th>Qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>22</td>
<td>0.91</td>
<td>E</td>
</tr>
<tr>
<td>2</td>
<td>17</td>
<td>22</td>
<td>0.31</td>
<td>D</td>
</tr>
<tr>
<td>3</td>
<td>17</td>
<td>22</td>
<td>0.77</td>
<td>M</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>22</td>
<td>0.54</td>
<td>M</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>22</td>
<td>0.68</td>
<td>M</td>
</tr>
<tr>
<td>6</td>
<td>18</td>
<td>22</td>
<td>0.81</td>
<td>E</td>
</tr>
<tr>
<td>7</td>
<td>11</td>
<td>22</td>
<td>0.50</td>
<td>M</td>
</tr>
<tr>
<td>8</td>
<td>16</td>
<td>22</td>
<td>0.72</td>
<td>M</td>
</tr>
<tr>
<td>9</td>
<td>5</td>
<td>22</td>
<td>0.22</td>
<td>R</td>
</tr>
<tr>
<td>10</td>
<td>6</td>
<td>22</td>
<td>0.27</td>
<td>R</td>
</tr>
<tr>
<td>11</td>
<td>20</td>
<td>22</td>
<td>0.90</td>
<td>E</td>
</tr>
<tr>
<td>12</td>
<td>7</td>
<td>22</td>
<td>0.31</td>
<td>D</td>
</tr>
<tr>
<td>13</td>
<td>14</td>
<td>22</td>
<td>0.63</td>
<td>M</td>
</tr>
<tr>
<td>14</td>
<td>0</td>
<td>22</td>
<td>0.0</td>
<td>R</td>
</tr>
<tr>
<td>15</td>
<td>6</td>
<td>22</td>
<td>0.27</td>
<td>R</td>
</tr>
<tr>
<td>16</td>
<td>11</td>
<td>22</td>
<td>0.50</td>
<td>M</td>
</tr>
</tbody>
</table>
As the initial activity, the writer must conducted the test items according to the table of specification in Table 1. The form of the test is multiple choice which consist of twenty items which was tested to the other classes with the same grade. The results then validated by using item analysis of difficulty and discriminating power.

Based on the level of difficulty analysis result, test item number 9, 10, 14, 15, 19, and 20 are too difficult that need to be revised. Then, discriminating power formula also applied to see the difference between upper, middle, and lower group of the population. Based on the discriminating power analysis result, the test item number 2, 8, 14, 15, 19, and 20 need to be revised.

The items then validated and revised according to the analysis result. After the process done, the writer conducted the pre-test to the students from the sample class to see their prior knowledge.

After analyzing the result of the pre-test, the writer gave treatments to the students. The treatments was teaching reading comprehension on narrative text by using Discovery Method. The treatment was given three times with the time allocation for each meeting is 2 x 30 minutes.

The first meeting was on Monday, April 24th, 2017. The procedures of applying the Discovery Method were adapted from the discovery procedures suggested by Schmidt et al. where firstly, the writer and the students discussed about narrative text and its characteristics. Secondly, the students were grouped in five, and then the narrative texts and discovery sheets were distributed. After that, the procedures were explained. The students had to discuss the text and answer the discovery sheet in their own group. After finishing the explanation, the writer monitored the students while the students were filling their discovery sheet. The writer also helped the students who were still confused about how to answer the sheet. After the students had finished, the writer and the students discussed the questions together.

<table>
<thead>
<tr>
<th>Item</th>
<th>Difficulty (LD)</th>
<th>Discriminating Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td>18</td>
<td>8</td>
<td>22</td>
</tr>
<tr>
<td>19</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>20</td>
<td>5</td>
<td>22</td>
</tr>
</tbody>
</table>

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The second meeting was on Wednesday, April 26th, 2017. In the second meeting, the writer taught with almost similar procedures as in the first meeting. First, the writer explained the procedure of answering the sheet. This time, the students worked to answer the question in a pair. During this meeting, students started to be familiar with the discovery sheet and they answered it more enthusiastically. In pair, they worked together to answer the questions. After finishing the sheet, the writer and the students discussed the questions together.

In the last meeting, which was held on Wednesday, 3rd 2017, the similar procedures were exercised as the first and second treatment. This time, they had to work individually. In this meeting, the students had a better understanding in answering discovery sheet. The writer only gave little reminder and guidance on how to answer the discovery sheet because they were already familiar with the working steps.

After the treatment was done, the writer gave the post-test to the students. The post-test was given on Wednesday, May 10th, 2017. The result showed that the mean score of post-test is 64.8. Then, the writer computed the $t$-value and the effect size. The result of the $t$-value is 4.92 which is higher than $t$-table value for 25 degree of freedom and at the level of 0.05, that is 2.060. The result of the effect size is 0.98 and it is categorized as ‘moderate effect.

### CONCLUSIONS AND SUGGESTIONS

#### Conclusions

From the result, it could be found that the students’ reading comprehension was low, and soon, they moved to the moderate level. It means that the alternative hypothesis is proved, that is the use of discovery method in teaching reading comprehension on narrative text is effective to the eighth-grade students of SMP Kartika Kubu Raya in academic year 2016/2017.

#### Suggestions

Discovery Method can be an alternative solution for the teachers to teach the students since it can help them in comprehending the text on Narrative Text. In using the method, the teacher is suggested to set up the classroom both in the supporting tools and materials. In the supporting tools, special classroom equipped with face to face desk may help the students enjoy the learning better and create a better learning process. The use of LCD-projector may be also helpful to enhance the students’ understanding about the procedure of answering the Discovery Sheet. For the material support, the use the vocabularies learned by the students in the previous classes or the vocabularies used in their daily life may be beneficial in learning activities.
REFERENCE