CHAPTER IV
RESULT AND DISCUSSION

A. Result

In order to reveal the effectiveness of Sentence Race game for teaching vocabulary at the seventh grade students of SMP Negeri 1 Kalibagor in academic year 2015/2016, the researcher provided the result of data analysis by using two methods. The first method was experimental and control group class mean based, and the second method was t-test based.

1. Students’ Pre-Test and Post-Test Results in Experimental and Control Group

a. The Result of Experimental Group

In experimental group, the students were given pre-test before they got treatment. After they got treatment by using Sentence Race game, they had to do post-test.

Individual competence of experiment class. The formula to know the students’ competence as follows:

\[ P = \frac{F}{N} \times 100\% \]

Where:

P = the percentage of correct answer
F = the frequency of correct answer
N = Total number of items
For example, the students’ number 5 of post test in the experimental class.

\[ F = 25 \]

\[ N = 30 \]

\[ \frac{25}{30} \times 100\% = 83.33\% \]

Therefore individual score for student number 5 of post test in the experimental class was 83%, and it belonged to category “very good”. The complete result can be seen in appendix A.

The category of individual score of experimental class

<table>
<thead>
<tr>
<th>Percentage (%)</th>
<th>Category</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>81 – 100</td>
<td>Very good</td>
<td>15</td>
</tr>
<tr>
<td>61 – 80</td>
<td>Good</td>
<td>14</td>
</tr>
<tr>
<td>41 – 60</td>
<td>Fair</td>
<td>3</td>
</tr>
<tr>
<td>21 – 40</td>
<td>Bad</td>
<td>0</td>
</tr>
<tr>
<td>0 – 20</td>
<td>Very bad</td>
<td>0</td>
</tr>
</tbody>
</table>

Based on the table above, it can be seen that most of the individual competence in the experimental class is in category “very good”. There were 14 students in category good and 3 students in category fair. It can also seen that there are no student with bad category, and no student who got very bad category.
The percentage of students in pre-test and post-test who got score range between 0-20, 21-40, 41-60, 61-80 and 81-100 could be seen in Figure 1.

Figure 1 shows the results of pre-test and post-test in experimental group. Both in pre-test and post-test, none of the students got score in the range between 0 and 20. Then, in pre-test, there were 6.25% who got score in the range between 21 and 40, but in post-test none of them got score in this range. Therefore, it could be known that the number of students who got score in this range decreased in post-test which meant that the percentage of students who got bad category decreased by 6.25% from the pre-test.
Furthermore, in pre-test, there were 46.87% who were in the score range between 41 and 60, but in post-test there were 9.38%. This result showed that the number of students who got score in this score range also decreased in post test and it also showed that the percentage of students who got fair category decreased by 37.5% from the pre-test. Then, in pre-test, the students who got the score range between 61 and 80 were 43.75%, and in post-test there were 43.75%. Moreover, in pre-test, there were 3.13% who got score in the range between 80 and 100 while in post-test there were 46.87%. This result showed that the number of students who got score between 81 and 100 increased in post-test. It also meant that in post-test, the percentage of students who got very good category increased by 43.78% from the pre-test. Then, the sum of pre-test score in experimental group was 1934 while in the post-test was 2613, and the average score of students in experimental group got better from 60.4 to 81.6. In this case, in experimental group, the post-test had the better result than that of the pre-test result.

b. The Result of Control Group

The students in control group did not get any treatment. Before the students in this group was taught, they were given pre-test. Then, they was taught the material which was appropriate with the lesson plan without using Sentence Race game as a treatment in...
experimental group. After they got the material, they had to do post-test.

Individual competence of control class. The formula to know the students’ competence as follows:

\[ P = \frac{F}{N} \times 100\% \]

Where:

\( P \) = the percentage of correct answer
\( F \) = the frequency of correct answer
\( N \) = Total number of items

For example, the students’ number 8 of post test in the control class.

\( F = 18 \)
\( N = 30 \)

\[ = \frac{18}{30} \times 100\% \]
\[ = 60\% \]

Therefore individual score for student number 8 of post test in the control class was 60%, and it belonged to category “fair”. The complete result can be seen in appendix A.

The category of individual score of control class
<table>
<thead>
<tr>
<th>Percentage (%)</th>
<th>Category</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>81 – 100</td>
<td>Very good</td>
<td>8</td>
</tr>
<tr>
<td>61 – 80</td>
<td>Good</td>
<td>19</td>
</tr>
<tr>
<td>41 – 60</td>
<td>Fair</td>
<td>5</td>
</tr>
<tr>
<td>21 – 40</td>
<td>Bad</td>
<td>0</td>
</tr>
<tr>
<td>0 – 20</td>
<td>Very bad</td>
<td>0</td>
</tr>
</tbody>
</table>

Based on the table above, it can be seen that most of the individual competence in the control class is in category “good”. There were 8 students in category very good and 5 students in category fair. It can also seen that there are no student with bad category, and no student who got very bad category.

The percentage of students in pre-test and post-test who got score range between 0-20, 21-40, 41-60, 61-80 and 81-100 could be seen in Figure 2.
Figure 2 illustrates the result of pre-test and post-test in control group. Both in pre-test and post-test, none of the students got score in the range between 0 and 20. Then, in pre-test 6.25% who got score in the range between 21 and 40, but in post-test none of them got score in this range which meant that the percentage of students who got bad category decreased by 6.25% from the pre-test.

Furthermore, in pre-test, the students who were in the score range between 41 and 60 were 40.63% while in post test there 15.63%. It meant that the number of students who got score in this range decreased in post-test and it also meant that the percentage of students who got fair category decreased by 25%. Then, in pre-test, there were 46.87% who were in the score range between 61 and 80 while in post-test there were 69.37%. From this results, it could be seen that the number of students in this range increased by 22.5%.
Moreover, there were 6.25% who were in the score range between 81 and 100 in the pre-test, but there were 25% in the post-test which means that in post-test, the number of students who got very good category increased by 18.75% rather than in pre-test. Furthermore, the sum of the pre-test score was 2033 while in the post-test was 2339, and the average score of control group got better from 63.5 to 73. Therefore, it could be concluded that in control group, the post-test had the better result than that of the pre-test result.

2. Class Mean

After the data of pre-test and post-test in both experimental and control groups were analyzed, the result is showing in figure 3.
Figure 3 shows the mean score of pre-test and post-test in experimental and control groups. The mean score of experimental group was 60.4 in pre-test, and it was 81.6 in post-test. Meanwhile, the mean score of control group was 63.5 in the pre-test, and it was 73 in the post-test. It could be concluded that the mean score of post-test in experimental group was higher than control group.

3. The Result of T-test

After the researcher got the data from experimental and control class, the researcher analyzed the data to find out the effectiveness of Sentence Race game for teaching vocabulary, the steps were as follows:

a. Finding the mean of deviation of experimental class (Mx)

The post-test score of each student in experimental class was subtracted by the pre-test score. Then, the total deviation (X) was computed. The total of students’ deviation in experimental class was divided by the number of the students (Nx) in the class.

The formula of Mx was as follows:

\[ Mx = \frac{\sum x}{N} \]

The calculation was as follows:

\[ Mx = \frac{\sum x}{N} \]

\[ Mx = \frac{662}{32} \]

\[ Mx = 20.7 \]

Thus, the mean of deviation of experimental class (Mx) was 20.7.
b. Finding the mean of deviation of control class (My)

The post-test of each student in control class was subtracted by the pre-test score. Then, the total of deviation (Y) was computed. The total of the students’ deviation in control class was divided by the number of the students (Ny) in the control class.

The formula of My was as follows:

\[ My = \frac{\sum Y}{N} \]

The Calculation of My was as follows:

\[ My = \frac{\sum Y}{N} = \frac{298}{32} \]

\[ My = 9.3 \]

Thus, the mean of deviation of control class (My) was 9.3.

c. Finding \( \sum x^2 \)

The deviation score of each student in experimental class was squared. Then, \( \sum x^2 \) was computed. The result was subtracted by the total of squared deviation (\( \sum x^2 \)) that had been divided by the number of the students.

The formula of \( \sum x^2 \) was as follows:

\[ \sum X^2 = \sum x^2 - \frac{(\sum x)^2}{N} \]

The calculation of \( \sum X^2 \) was as follows:

\[ \sum X^2 = \sum x^2 - \frac{(\sum x)^2}{N} = 16427 - \frac{(662)^2}{32} \]
d. Finding $\sum y^2$

The deviation score of each student in control class was squared. Then, $\sum y^2$ was computed. The result was subtracted by the total of squared deviation ($\sum y^2$) that had been divided by the number of the students.

The formula of $\sum y^2$ was as follows:

$$\sum y^2 = \sum y^2 - \frac{(\sum y)^2}{N}$$

The calculation of $\sum y^2$ was as follows:

$$\sum y^2 = \sum y^2 - \frac{(\sum y)^2}{N}$$

$$= 3654 - \frac{(289)^2}{32}$$

$$= 3654 - 2610$$

$$= 1044$$

e. The last step of the analysis was the application of the t-test formula

The data above was applied into t-test formula:

$$t\text{-test} = \frac{M_x - M_y}{\sqrt{\frac{\sum x^2 + \sum y^2}{N_x + N_y - 2} \left( \frac{1}{N_x} + \frac{1}{N_y} \right)}}$$

$$= \frac{20.7 - 9.3}{\sqrt{\frac{2732 + 1044}{32 + 32 - 2} \left( \frac{1}{32} + \frac{1}{32} \right)}}$$

$$= \frac{11.4}{\sqrt{\frac{3776}{62} \cdot 0.031}}$$

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\[ \sqrt{60.90 \times 0.031} = \sqrt{1.88} \]

\[ \frac{11.4}{\sqrt{1.88}} = \frac{11.4}{1.371} = 8.315 \]

After the researcher got the result of t-test, the researcher computed \(d.f\).

\[ df = N_x + N_y - 2 \]

\[ df = 32 + 32 - 2 \]

\[ df = 62 \]

After the researcher computed the t-test value, the researcher compared the result with t-table using one tail at the significant level 0.05 for \(d.f\) 62. If the t-test result was higher than t-table, the hypothesis was accepted (Arikunto, 2010:354). Based on the t-test computation, the t-test result was 8.315 and the value of t-table was 1.669. The summary of t-test data could be seen in the table below:

<table>
<thead>
<tr>
<th>N</th>
<th>T-test</th>
<th>T-table</th>
<th>d.f</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>8.315</td>
<td>1.669</td>
<td>62</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Table 3

The Result of T-test
Based on the Table 1, the t-test result 8.315, and the value of t-table was 1.669. Thus, the t-test result was higher than the value of t-table (8.315 > 1.669), and it shows that the hypothesis was accepted or using Sentence Race game gave positive effect for teaching vocabulary.

**B. Discussion**

Based on the result of the data analysis, it was found that there was different result of students’ vocabulary achievement in experimental and in control group. Although both of the group got better result in post-test, the post-test result of experimental group was better than in control group. Furthermore, there were higher progress in experimental group rather than in control group. The average score of experimental group in post-test increased by 21.2 point (60.4 to 81.6) from the pre-test. However, the average score of control group in post-test just increased by 9.5 point (63.5 to 73) from the pre-test. Thus, it was found that the result of students’ vocabulary achievement in experimental group was better than in control group.

The experimental group got better result because the students in experimental group were taught by Sentence Race game. Sentence Race game could facilitate the students to recycle their vocabulary. By using this game, the students could easily memorize the words which had been learned before. Therefore, the students could easily recalled those words when they needed it and it made them get better score in post-test rather than that in control group.
Furthermore, the using of Sentence Race game could also make the students interested in learning vocabulary. When the researcher implementing this game in experimental class, the students looked very excited and fun to work cooperatively. Sometimes, they even laughed each other and yelled when they played this game. Thus, by using this game the students could get new interesting experience in learning vocabulary.

In conclusion, it could be known that Sentence Race game gave positive effect toward the students’ vocabulary competence and the hypothesis was accepted which meant that Sentence Race game was effective for teaching vocabulary at seventh grade students of SMP Negeri 1 Kalibagor in academic year 2015/2016.