The Effect of Using Digital Storytelling on Students’ Reading Comprehension and Listening Comprehension

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ABSTRACT

The purpose of this study was to find out the effect of using digital storytelling strategy on students' reading comprehension and listening comprehension. The design of this study was Quasi-Experimental with pretest and post-test. Thus, two classrooms containing the total of 60 students of level II at Language Development Center of UIN Suska Riau were selected as the sample based on their similar characteristics and were assigned into an experimental and a control group. In collecting the data, reading and listening tests as well as observations were utilized to assess participants’ comprehension abilities prior to and after the treatment. In analyzing the data, the t-tests (paired sample, and independent sample) were run in SPSS. In addition, Cohen D formula was applied to determine the effect size. The results showed that there were no significant differences (p > 0.05) between the means of the pretests scores, and there were significant differences (p < 0.05) between the means of both groups post-tests scores, reading comprehension (p=0.02), and listening comprehension (p=0.04). In other words, the students’ comprehension levels were similar prior to the treatment, and the students of the experimental group outperformed the control group after the treatment. In addition, the values of the effect size obtained, reading (0.5), and listening (0.5), were categorized into the moderate effect size. Thus it was inferred that the use of digital storytelling had a significant effect on students’ reading and listening comprehension at Language Development Center of UIN Suska Riau.

KEYWORDS: EFL, digital storytelling, reading, listening, comprehension

1 INTRODUCTION

It is well known that the learners receive information as well as instructions through reading and listening. On the basis of that fact, the activities of English language teaching at various educational institutions in Indonesia focus on the comprehension of the written and the spoken texts. By comprehending those texts, learners are expected to obtain the variety of information and knowledge which later on assist them in developing their language competences as well as their language performances.

The preliminary study conducted at language development center of UIN Suska Riau revealed that the students of the level 2 encountered the problems in reading and
listening comprehension although they had learned English for a semester at level 1. This problem may be due to several causes, such as students’ motivation, minimum exposure to English outside the classroom, the amount of learning time which was 100 minutes a week, classroom facilities, or the teaching strategies implemented by the teachers. However, the main concern was addressed to the inefficient strategies implemented in the classroom. The strategies failed to assist the students’ comprehension improvement as well as to encourage the students to be more active. Above all, when a correct choice of strategies was applied in the classrooms, the other causes mentioned would be irrelevant.

Several teachers had a misconception of the teaching reading for the comprehension. Ideally, the reading activities should focus on developing students’ comprehension through bottom-up or top-down processing. Instead, the teachers forced the activities to word by word translation. In addition, listening comprehension activities were neglected in the classroom for several teachers relied on face to face communication which was frequently not applied in English. As a result, many students failed to have enough portion of listening comprehension practice.

The problems encountered by the students could inevitably be the hindrance to their success of English learning for reading and listening are the medium of instruction in EFL classroom. Moreover, the two skills are generally used in measuring students’ achievement on the examination as well as other English proficiency tests. As a result, they will definitely fail to complete the course, to pass the test, as well as to access the knowledge and information in learning. The appropriate strategy is needed to be implemented in teaching and learning to solve the problems. The correct choice of strategy will assist the students in their learning for comprehension.

Learning strategies deal with all aspects of the subject which are learned in all levels of education and become one of the essential aspect in achieving the learning objectives, including English proficiency and achievement. One of the strategies which has attracted many attention for its ability to support the learning of reading and listening comprehension is digital storytelling. Various studies display a positive relation between the use of digital storytelling and learners’ comprehension, (Choi, 2012; Bakar, & Zubir, 2104; Slikhord, Gørjian, & Pazhakh, 2013; Royer, & Richard, 2007) on reading comprehension as well as, (Sandarana, & Kiab, 2013; Ramireaz, & Alonso, 2007; Jafre et al., 2011) on listening comprehension. The studies conducted reveal the information to support the implementation of digital storytelling in the EFL classrooms, especially in aiding the students’ comprehension development.

However, minimum information, addressing the potential of digital storytelling toward the integration of the teaching and learning of those two skills simultaneously, is provided. Therefore, further investigation on its potential will provide information contributing on the development of students’ reading and listening comprehension. The present study relies on the quantitative data as well as classroom observations. By examining the implementation of digital storytelling as well as the learning activities involved in the classroom with its implementation, the essential information will be gathered which later on will assist the teachers to solve the problems on students’ reading and listening comprehension.

The purpose of this study was to find out the effect of using digital storytelling strategy on students’ reading and listening comprehension at Language Development Centre of UIN Suska Riau. Specifically, the study was conducted to investigate the following research questions:
1. Does the use of digital storytelling strategy affect students’ reading comprehension?
2. Into what extent does the use of digital storytelling affect students’ reading comprehension?
3. Does the use of digital storytelling strategy affect students’ listening comprehension?
4. Into what extent does the use of digital storytelling affect students’ listening comprehension?

2 LITERATURE REVIEW

2.1 DIGITAL STORYTELLING

According to the Digital Storytelling Association (2002), digital storytelling is the modern version of the traditional art of storytelling which uses digital media. For it is the modern version of storytelling using digital media, the definition of traditional storytelling and digital media are needed to be addressed. Behmer (2005) explained storytelling as the sharing of our or others ideas and experiences through words and actions with the purpose of transferring meaning. Behmer emphasizes that the essential element of storytelling is the transfer of meaning.

As many authors have already defined that media is a tool to store or to deliver the information, the term of digital is still a vague concept. The term means different things to different people. However, in this research the term digital refers to electronic or mechanical devices (Rouse, 2005). In other words digital media can be interpreted as an electronic or a mechanical tool that can be used to store or to deliver data and information.

Taking into account that definitions, what Digital Storytelling Association means can be interpreted as the sharing of information through words and actions using electronic or mechanical tools with the purpose of transferring meaning. As its name implies, digital storytelling uses digital devices, software applications and multiple types of media such as text, image, voice (narration), music, or video.

Along with the above definition, there are many other definitions of digital storytelling. Ohler (2008) describes digital storytelling as the use of personal technology in order to integrate a number of media into a coherent narrative. Oxford dictionary explains the term narrative as a representation of a particular situation or process in such a way as to reflect or conform to an overarching set of aims or values. In order to represent information and to convey the meaning, the combination of the number of digital medias is an essential element in digital storytelling. Thus, selecting the right digital media to be used, positioning them accurately, and combining them with a systematic arrangement of information are the gold standard of creating an effective digital storytelling.

2.2 DIGITAL STORYTELLING IN EDUCATION

Digital storytelling has been used in a variety of learning activities in education. For instance, it can be implemented in the curriculum as a medium of instruction applied by the teachers, or as the tools created by the students. Some educators may prefer the first mentioned and show them to their students as a way to present new material.
In this research, digital storytelling refers to the medium of instruction which is used by the teacher in the classroom. Burmark (2004) finds that integrating visual images with written text enhances and accelerates student comprehension. Digital storytelling is an especially good technology tool for collecting, creating, analyzing, and combining visual images with written text. Digital storytelling is a flexible and adaptable tool which can fit most purposes and can be used in almost all the subjects being taught (Signes, 2007). Its flexibility comes from the fact that it can be create by a range of tools from the simplest to more complicated ones depending on the purpose of the activity.

Robin (2008) implies that in education, digital storytelling is a medium to connect and to collaborate teachers and students. It helps them harness the power of voice and imagery by using technology that is relevant to the way of the modern live. It can be used not only as an anticipatory set or hook to capture the attention of students and increasing their interest in exploring new ideas, but also as a way to enhance current lessons within a larger unit, as a way to facilitate discussion about the topics presented, and as a way to make abstract or conceptual content more understandable. He adds by elaborating that digital storytelling allows students and teachers not only to help them to cultivate the ability to cooperate with others, but also to foster the information gathering and problem-solving skills.

3 Method

This research was an experimental research which examines the truth of a statistical hypothesis relating to the research problem proposed. Based on the consideration that it was impossible to randomly assign the students to groups, the quasi-experimental with a pretest and a post-test non-equivalent group design was applied. The non-equivalent group, as its name implies, indicated that the sample in both groups might not be identical for the sample was not randomly assigned.

In fact, to ensure the groups equivalence the sample were selected based on their similar characteristics from the population which were the group of students in each classroom who studied English level 2 at Language Development Center of UIN Suska Riau. Based on the investigation on the population, two classes of level 2 students which each classroom consisted of 30 students were selected and assigned into an experimental group and a control group. The two classes selected were considered similar based on their ability levels, the teacher whom they learned with, the subject which they studied, their number in each classroom including the portion of male and female, their classrooms facilities, and their learning schedule.

In this study, the independent variable, digital storytelling (the treatment), was manipulated and then the effect caused by the treatment on the dependent variables were measured. The test scores of both groups which had the information of reading and listening comprehension were considered as the dependent variables. The dependent variables of both groups were compared by applying the statistical analyses prior to and after the treatment implemented.

Prior to the treatment, the pre-tests were administered to both groups in order to determine the comprehension level of the dependent variables as well as to ensure groups equivalence. Furthermore, the treatment was implemented on the experimental group, while no treatment, usual teaching method, on the control group. Finally, after
the treatment implemented the post-tests scores of the dependent variables of the two groups was compared by the statistical analyses to determine the effect of the treatment.

The tests materials were obtained from TOEFL practice test. The tests were administered to measure both students reading and listening comprehension. They were multiple choice tests which contain several texts, spoken and written, followed by a number of questions for each of the texts. Each question was provided with four answer choices, one correct answer provided.

4 FINDINGS & DISCUSSION

In the pretests of both reading and listening, the means of the experimental group and the control group do not display differences. In contrast, the differences are displayed at the result of post-test. Based on the means displayed, the experimental group outperforms the control group in post-test. In addition, the gain (the result of subtracting pretest from the post-test scores) of the experimental group is higher than the control group.

Table 1. Students test scores

<table>
<thead>
<tr>
<th>Group</th>
<th>Reading Comprehension (100)</th>
<th>Listening Comprehension (100)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Post-test</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Experimental</td>
<td>52.40</td>
<td>8.81</td>
</tr>
<tr>
<td>Control</td>
<td>52.13</td>
<td>8.82</td>
</tr>
<tr>
<td>Difference</td>
<td>0.27</td>
<td>5.47</td>
</tr>
</tbody>
</table>

4.1 DATA ANALYSIS

To find out the significant effect of the treatment on students reading and listening comprehension, the analysis of t-test was run on SPSS. It was used to analyze the differences of means of the test scores of both groups. Independent Sample t-test determined the difference of means between the tests of the different groups, for instance, the analysis of means between the experimental group post-test scores and the control group post-test scores. In the other hand, Paired Sample t-test determined the difference of means between the tests of the same group, for instance, the analysis of means between pretest scores and the post-test scores the experimental group. Afterward, the information of the effect size of the treatment was gathered from the analysis of Cohen d formula. Furthermore, the result obtained was interpreted with the Cohen effect size guide.
### Table 2. Analysis of reading comprehension scores

<table>
<thead>
<tr>
<th>Group</th>
<th>Pretest M</th>
<th>Pretest SD</th>
<th>Post-test M</th>
<th>Post-test SD</th>
<th>df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>52.40</td>
<td>8.81</td>
<td>59.07</td>
<td>9.02</td>
<td>29</td>
<td>6.64</td>
<td>0.00</td>
</tr>
<tr>
<td>Control</td>
<td>52.13</td>
<td>8.82</td>
<td>53.60</td>
<td>9.37</td>
<td>29</td>
<td>1.5</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>df 58</td>
<td></td>
<td>df 58</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>t 0.11</td>
<td></td>
<td>t 2.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p 0.90</td>
<td></td>
<td>p 0.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p > 0.05 and t < t-table= No significant difference  
p < 0.05 and t > t-table= Significant difference  
t-table at significance 5%, df (29)= 2.04, df (58)=2.00

With the independent sample t-test, in the pretest, the t-value, 0.11, is lower than t-table at the significance level of 5%, 2.00. In addition, the value of p (0.90) is higher than 0.05. In other words, no significant difference is displayed between the mean of pretest scores. In contrast, in the post-test scores, the t-value, 2.30, is higher than the t-table at the significance level of 5%, 2.00, and the value of p (0.02) is lower than 0.05. In other words, a significant difference is displayed between the means of post-test scores.

With the paired sample t-test, the table displays that while significant difference (t=6.64, and p=0.00) appears between the mean of pretest and post-test scores of the experimental group, no significant difference (t=1.5, and p=0.12) appears on the control group. In other words, the participants of both groups had similar ability on reading comprehension prior to the treatment implementation, but they had difference ability after the treatment. Moreover, while the change appeared on the experimental group, no change appeared on the control group.

### Table 3. Analysis of listening comprehension scores

<table>
<thead>
<tr>
<th>Group</th>
<th>Pretest M</th>
<th>Pretest SD</th>
<th>Post-test M</th>
<th>Post-test SD</th>
<th>df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>53.33</td>
<td>10.36</td>
<td>59.83</td>
<td>8.85</td>
<td>29</td>
<td>4.79</td>
<td>0.00</td>
</tr>
<tr>
<td>Control</td>
<td>53.83</td>
<td>10.39</td>
<td>54.40</td>
<td>11.09</td>
<td>29</td>
<td>0.85</td>
<td>0.56</td>
</tr>
<tr>
<td></td>
<td>df 58</td>
<td></td>
<td>df 58</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>t 0.18</td>
<td></td>
<td>t 2.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p 0.85</td>
<td></td>
<td>p 0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p > 0.05 and t < t-table= No significant difference  
p < 0.05 and t > t-table= Significant difference  
t-table at significance 5%, df (29)= 2.04, df (58)=2.00

With the independent sample t-test, in the pretest the t-value, 0.18, is lower than t-table at the significance level of 5%, 2.00. In addition, the value of p (0.85) is higher...
than 0.05. In other words, no significant difference is displayed between the mean of pretest scores. In contrast, in the post-test scores, the t-value, 2.05, is higher than the t-table at the significance level of 5%, 2.00, and the value of p (0.04) is lower than 0.05. In other words, a significant difference is displayed between the means of post-test scores.

With the paired sample t-test, the table displays that while a significant difference (t=4.79, and p=0.00) appears between the mean of pretest and post-test scores of the experimental group, no significant difference (t=0.85, and p=0.56) appears on the control group. In other word, the participants of both groups had similar ability on listening comprehension prior to the treatment implementation. In contrast, they had difference ability after the treatment. Moreover, while the change appeared on the experimental group, no change appeared on the control group.

4.2 DISCUSSION

Results demonstrated that with digital storytelling, the experimental group had significantly higher scores on reading and listening comprehension post-tests compared to that of the control group, without digital storytelling. The results were discussed on the basis of the following research questions and hypotheses tests:

4.2.1 DOES THE USE OF DIGITAL STORYTELLING HAD A SIGNIFICANT EFFECT ON STUDENTS READING COMPREHENSION?

On the basis of the fact that no significant difference appeared on the mean of pretest scores, the group equivalence was secured before the introduction of the treatment. In other words, there was evidence indicating that the ability of students reading comprehension of the experimental group and the control group was similar before the treatment was implemented. Furthermore, upon administering the post-tests to measure the students’ comprehension ability after the treatment implementation, results indicated that the experimental group tests scores improved. In contrast no improvement was displayed on the control group scores. Moreover, the mean of post-test scores of the experimental group, 59.06, surpassed the control group, 53.60. Based on the comparison of the two means, a significant difference was displayed.

The above discussion highlighted an indication that the difference of means appeared between the post-test scores of both group was considered as the effect of the treatment implementation. On the account of that students reading comprehension ability of both groups was similar before the treatment was implemented, and scores improvement only appeared on the experimental group, then the difference of means displayed between the post-test scores of both groups was considered as the effect of the treatment implementation for the students of the control group were not exposed to the treatment. It was in line with the finding of the study conducted by Slikhord, Gorjian, and Pazhakh (2013). Thus, there was enough evidence to reject the null hypothesis. Therefore, it was inferred that the implementation of digital storytelling had a significant effect on students reading comprehension.
4.2.2 INTO WHAT EXTENT DOES THE USE OF DIGITAL STORYTELLING AFFECT STUDENTS READING COMPREHENSION?

On the account of the second research question, the Cohen d formula was applied. It was the analysis to obtain the value of the effect size of the treatment. Rather than relying on the statistical significance of the finding, the value of the effect size pointed out the strength and the direction of the treatment. The result, 0.5, was categorized as the moderate effect size. In other words, digital storytelling had a moderate effect on students reading comprehension. In other words, digital storytelling had successfully improved the ability of the average student in the experimental group into the extent that it was similar to the student ranked 5 in the control group.

4.2.3 DOES THE USE OF DIGITAL STORYTELLING HAVE A SIGNIFICANT EFFECT ON STUDENTS LISTENING COMPREHENSION?

On the basis of the fact that no significant difference appeared on the mean of pretest scores, the group equivalence was secured before the introduction of the treatment. In other words, there was evidence indicating that the ability of students listening comprehension of the experimental group and the control group was similar before the treatment was implemented. Furthermore, upon administering the post-tests to measure the students’ comprehension ability after the treatment implementation, results indicated that the experimental group tests scores improved. In contrast no improvement was displayed on the control group scores. Moreover, the mean of post-test scores of the experimental group, 59.83, surpassed the control group, 54.40. Based on the comparison of the two means, a significant difference was displayed.

The above discussion highlighted an indication that the difference of means appeared between the post-test scores of both group was considered as the effect of the treatment implementation. On the account of that students listening comprehension ability of both groups was similar before the treatment was implemented, and scores improvement only appeared on the experimental group, then the difference of means displayed between the post-test scores of both groups was considered as the effect of the treatment implementation for the students of the control group were not exposed to the treatment. It was in line with the finding of the study conducted by Ramireaz, and Alonso (2007). Thus, there was enough evidence to reject the null hypothesis. Therefore, it was inferred that the implementation of digital storytelling had a significant effect on students listening comprehension.

4.2.4 INTO WHAT EXTENT DOES THE USE OF DIGITAL STORYTELLING AFFECT STUDENTS LISTENING COMPREHENSION?

On the account of the second research question, the Cohen d formula was applied. It was the analysis to obtain the value of the effect size of the treatment. Rather than relying on the statistical significance of the finding, the value of the effect size pointed out the strength and the direction of the treatment. The result, 0.5, was categorized as the moderate effect size. In other words, digital storytelling had a moderate effect on students listening comprehension. In other words, digital storytelling had successfully improved the ability of the average student in the experimental group into the extent that it was similar to the student ranked 5 in the control group.
5 CONCLUSION & RECOMMENDATION

5.1 CONCLUSION

In this study, the results displayed that the ability of students’ reading and listening comprehension of the experimental group, with digital storytelling, was better than the control group, no treatment. On the basis of the fact that students reading and listening comprehension ability of both groups were similar before the treatment, then the differences that were displayed on the post-test scores of the experimental group was considered as the effect of the treatment implementation for the students of the control group were not exposed to the treatment. Thus, it was inferred that digital storytelling had a significant effect on students’ reading comprehension and listening comprehension. In addition, it affected both students’ comprehension abilities with the moderate effect size.

5.2 RECOMMENDATION

Digital storytelling would be a great help for the teachers to improve students reading comprehension and listening comprehension. Moreover, it is one of the strategies that can engage the students, and facilitated discussion which will result in the opportunity of students speaking practice. In addition, it can attract students’ attention, and entertain them. When teaching and learning process is fun, the learning objectives will be easily achieved. Above all, integrating the teaching of the four skills and optimizing the use of multimedia technology in the classroom should be continuously developed to build up the students capability of English in the modern era. Digital storytelling should be considered by the teachers to be implemented in the classroom.

The present study focuses more on quantitative in term of data collection and analysis and it uses a quasi-experimental research design. It is suggested that to further study and examine how well applying digital storytelling in integrating teaching and learning of the English four skills in the classrooms.

REFERENCES


