ENHANCING STUDENTS’ LEARNING OUTCOMES: BITS AND PIECES GAME

Sriati Usman*, Budi Budi, Abdul Kamaruddin, Ayu Faradila
Universitas Tadulako, Indonesia
(sriati_endro@yahoo.com)

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ABSTRACT

This research analyzes the implementation of the "bits and pieces" game on students' learning outcomes in writing English descriptive texts. A quasi-experimental design with Junior High School students as the population and a cluster random sampling technique used to draw the sample. Furthermore, two groups were administered pre- and post-test to collect the data. According to the data analysis, a noteworthy disparity existed in the post-test outcomes between the two groups. The experimental group had an average score of 86.60, whereas the control group had 62.43 score. By setting a significance level of 0.05 and degree of freedom (df) of 40 (21+21-2), the t-test demonstrated that the calculated t-value (6.487) surpassed the critical value (1.684), thereby indicating the acceptance of the research hypothesis. This implied that bits and pieces games have an effect on enhancing students’ learning outcomes. Therefore, the game can be a great contribution for English teachers in teaching English descriptive text, in terms of improving content, mechanics, organization, sentence structure, and grammar.

Key Words: Enhancing; bits; pieces; game

INTRODUCTION

In teaching and learning language, several methods, strategies, techniques, and games can help increase learners' writing skills, specifically in writing descriptive texts. Games can be used as methods or techniques to encourage learners in the instructional process. By applying games, learners are motivated, happy, and not bored during the teaching and learning process.

Engaging in games enables language learners to gain practical experience, as opposed to solely studying it in theory (Wright et al., 2006). In other words, they are useful mediums for learners in learning activities. They also motivate learners to communicate, work together, be creative, and use language appropriately and grammatically correctly. There are many games in the learning process: puzzles, tongue twisters, alpha-ball, as well as bits and pieces.

The advantages of games range from improving the cognitive aspects of language learning to promoting cooperative group work among learners. As a result, games encourage the learners by creating a good atmosphere that is both exciting and challenging.

This study aims to find out whether “Bits and Pieces” game can effect students’ learning outcomes or not. The game is an interesting game that can be played by learners of all levels, both individually and in groups. Teachers can use bits and pieces as a learning medium in the classroom which can be applied in various ways.

During gameplay, learners can exchange ideas, enabling them to enhance their descriptive text within their respective groups, bringing relaxation, fun, and more active learning. It also stimulates learners to enjoy their learning process, making it easier for them to understand the lesson and retain new words and ideas.

Several research teams have examined the effect of the game. For instance, Rojiayah (2017) found that the game was time-consuming and did not effectively capture students’ attention to the topic in the book. This statement illustrates us that not all game has a positive effect to English teacher. However, Binti (2018) stated that the game could motivate and increase students’ scores in writing Narrative Text.

The research on Enhancing learning outcomes through bits and pieces in writing English descriptive text is different from previous ones. Andayani, (2018) implemented the Bits and Pieces game to improve speaking skills, while Binti (2018) focused on
improving students’ learning outcomes in writing narrative text, and Rizky (2020) concentrated on writing report texts. Therefore, it is crucial to conduct further research to address this gap.

Mastering writing is one of the key skills in the English language that learners should acquire. It is considered a productive skill, along with speaking. Additionally, writing can be seen as an activity for interacting with others in written form, and it requires sources for generating ideas (Hamid et al., 2022). In this case, learners should be able to express their thoughts in a simple paragraph, since the curriculum mandates the learners in English language learning. One component of writing that learners should master is organization, which involves coherently arranging ideas to construct a good paragraph (Dhanya & Alamelu, 2019). However, it is crucial to note that writing a good paragraph requires a systematic, specific, and understandable approach. Therefore, it is considered challenging and difficult skills for learners to acquire (Usman et al., 2020, Sihes et al., 2014, Fareed, et al., 2016, Alamri, et al., 2021).

In supporting the goals of a good paragraph, the Curriculum 2013 stated that students should be able to comprehend and arrange short functional texts. Furthermore, basic competence points 3.1 and 4.1 explained that students need to understand the social function and structure of text, as well as elements of language including expressions of greeting, saying goodbye, thanks, and apologies, as well as respond accordingly to the context of use. The basic competence of point 4.1 stated that students should be able to construct simple oral texts for greetings, saying goodbyes, expressing gratitude, and using appropriate language elements based on the context. Therefore, according to the curriculum, every student has to possess good writing skills and be aware of the writing process and its aspect (Rizky, 2020 & Binti, 2018).

In order to write descriptive English text well, students need to possess knowledge of the writing elements: vocabulary, content, grammar, structure, and mechanics (Usman et al., 2020). As vocabulary constitutes a crucial aspect of language learning, it is imperative that it is both learned and taught. According to Anderson and Anderson (1997), vocabulary refers to the word number in a language that have clear meanings in a user’s mind. In other words, when students learn about a language, they should understand the meaning of every word, enabling them to use the words correctly.
The more words learners know, the better they understand what they listen to and read. Additionally, they are able to express themselves more effectively in both speech and writing. Richards and Renandya (2002) stated that vocabulary is essential for language proficiency, enabling learners to speak, listen, read, and write with greater skill. This means that people should have a rich vocabulary to articulate their ideas effectively.

To improve their writing performance, learners should also possess knowledge about the content they are writing about. According to Nik et al. (2010) content refers to the writer's understanding of the introduction, complications, resolutions and viewpoints presented vividly in their writing. In other words, content refers to the information in a text whether it is based on the writer’s imagination or facts.

Next is grammar, a set of rules governing how words are presented in a sentence, and it should be followed by writers or speakers when using a language (Deshpande, 2014). Without rules, the game would soon break down. It is the same with language; without rules, writers or speakers would not be able to interact with each other. According to Thornbury (2002), Grammar is a description of the rules that govern how sentences are formed in a paragraph, essay, or article. Grammar and writing are inseparable from each other because it helps to arrange sentences correctly.

Besides vocabulary, content, and grammar, organization is another crucial component that learners should include in their writing. Nik et al. (2010) argued that a good essay should be well organized with an introduction, body and conclusion. Organization is the process of arranging and developing a text from a general statement to a specific one and placing them in a logical order. It refers to how the texts are developed based on the generic structure and type of text. Learners should follow these guidelines while composing a text.

Another important aspect of writing is mechanics. Effective mechanics render a text easily comprehensible and draw in a larger readership. Writing mechanics, which encompass capitalization and writing conventions, are integral elements of written communication (Nik et al., 2010). Mechanics refers to how words are spelled, punctuated, and capitalized in a sentence. The function of mechanics is to convey meaning, show pause, and help writers pass their message clearly and understandably.
Therefore, learners need to understand the rules of using mechanics in writing.

Before learners start writing a text, they should first know about several text types, including descriptive, narrative, recount, and report text. This research focuses on writing a descriptive text, which is used to describe things, places, or people in detail. The descriptive text aims to provide the reader with information by describing persons, places, and things.

Based on the preliminary research, it was found that junior high school learners had some difficulty in writing texts, specifically English descriptive texts. For example, some students struggled to write because they were unsure of how to organize their ideas. As a result, their writing lacked cohesion and coherence. Another prominent problem that undeniably affected them was a lack of vocabulary which hindered their ability to choose and use appropriate words. Additionally, some students made spelling mistakes. In the end, writing became a boring activity for them because they lacked motivation. Hence, the research question is namely, does bits and pieces game affect enhancing students’ learning outcomes in writing English descriptive text?

METHOD

This is quasi-experimental research modified from true-experimental. It examined the hypothesis about the cause and effect of two variables (Degeng, 2000). According to Sugiono (2016) and Chamba et al. (2019), there are two quasi-experimental design forms: time series and non-equivalent control group model.

Research design

The research employed a non-equivalent control group design, where the sample was bifurcated into two: the experimental and the control groups. In a quasi-experimental design, both groups would receive a pre-test and a post-test (Cohen et al., 2007). However, in this design, the experimental group underwent the treatment after completing the pre-test and post-test was administered after the conclusion. During the treatment, the game was applied with procedures adapted from (Wright, 1989).

Research site and participants

The population is the object of the research, individual group with same characteristics Creswell, (2012) including grade seven of 16 State Junior High School in Palu. There were five classes in grade seven, and the total population comprised 105 students.
In research, a sample refers to a selected subset of the population under study. As proposed by Creswell (2012) it represents the target population subgroup that is investigated for the purpose of drawing generalizations about the entire target population. The technique used to select the sample was cluster random sampling. The names of classes were written on five small pieces of paper, rolled up, and two were drawn. As a result, The VII C class was selected as the experimental group while the VII D class as the control group.

This research comprises two types of variables: independent and dependent. According to Creswell (2012) a dependent variable is a quality or feature that is impacted by or reliant on the independent variable. Conversely, an independent variable is a quality or feature that affects the outcome or dependent variable. Following this assertion, this research dependent variable was the students’ learning outcomes, whereas the independent variable was the bits and pieces game.

**Data collection and analysis**

It is crucial to use an instrument to collect the data and has a certain method when conducting research (Arikunto, 2006).

In this research, a solitary instrument was employed - a writing test. The writing test was performed two times, once during the pre-test stage and again during the post-test stage to both groups.

The procedure for finding the result involved applying formula developed by Sutomo (1985) to determine individual scores which is as follows:

\[ Score = \frac{the \ obtained \ score}{the \ maximum \ score} \times 100 \]

Secondly, the formula from Hatch & Farhady (1982) was used to compute the mean score of both groups pre-and post-test, as shown below:

\[ \bar{X} = \frac{\sum X}{N} = \frac{\sum X}{N} \]

Where:
- \( \bar{X} \) = Mean score
- \( \sum X \) = Sum of each data
- \( N \) = Sum of data

Next, the mean score and squared deviation were computed for both groups to ascertain any significant differences. The formula from (Arikunto, 2006) was utilized, as illustrated below:

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

\[ \sum x^2 = \sum x^2 - \left( \frac{\sum x^2}{N} \right) \]
\[
\begin{align*}
\sum y^2 &= \sum y^2 - \frac{(\bar{y}^2)}{N} \\
\sum y^2 &= \sum y^2 - \frac{(\bar{y}^2)}{N}
\end{align*}
\]

Where:
- \( \sum x^2 \) = Experimental Group Deviation score
- \( \sum y^2 \) = Control Group Deviation score

Then, the data were examined applying the t-count formula by Arikunto (2006) to test the hypothesis and find any significant differences. It is as follows:

\[
t = \sqrt{\frac{(\bar{x}^2 + \bar{y}^2)}{N_x + N_y - 2} \left( \frac{1}{N_x} + \frac{1}{N_y} \right)}
\]

Where:
- \( \bar{x} \) = Experimental group mean
- \( \bar{y} \) = Control group mean
- \( \sum x \) = Experimental group Sum of Square
- \( \sum y \) = Control group Sum of Square
- \( N_x \) = Experimental group number of students
- \( N_y \) = Control group number of students

Once the data obtained, the individual pre- and post-test scores were inputted using Excel and applying formula from Arikunto (2006). To determine whether the game affects students learning outcomes, a hypothesis was conducted. The hypothesis was accepted when the t-counted value surpassed the t-table value. Conversely, when the t-counted value was lower, the hypothesis was rejected.

**FINDINGS AND DISCUSSION**

**Findings**

This research aims to determine whether the implementation of the bits and pieces game enhances students’ learning outcomes in writing descriptive texts. Specifically, the research aims to investigate a significant improvement in students’ learning outcomes before and after being taught using the game. In implementing the game, the research team utilized picture-strip story as the material and media, in addition to the theory and examples of English descriptive text.

The result indicated there was a significant improvement in students’ learning outcomes which was evident from the mean scores of the pre- and post-test results of the experimental and control groups. The results are as follows:

Graph. 1 Pre- and Post-test Result of the Experimental Group
The findings showed the mean score of students’ pre-test in the experimental group was 38.62, with the highest being 55.56 and the lowest being 11.1. On the other hand, the mean of students’ post-test in the experimental group was 86.60, with the highest being 100 and the lowest being 66.76. From the result of the analysis, there was a significant improvement, as the students’ scores increased from 38.62 to 86.60, which was a significant increase of 47.98 points from pre-test to post-test in the experimental group.

After analyzing the pre- and post-test scores of the experimental group, next is analyzing the control group. The control group scores are presented in Graphic 2.

Graph 2 Pre- and Post-test Result of the Control Group

Referring to the second graphic, the control group’s highest score in the pre-test was 55.56, and the lowest was 33.33. The pre-test mean score for the control group was 39.68. The highest score in the post-test was 77.78, and the lowest was 55.56. The post-test mean score for the control group was 62.43. Therefore, there was an overall improvement from the pre-test to the post-test in the control group, with 22.75 points increase.

Based on the normality and homogeneity tests on the pre-test scores in the experimental and control groups, both groups showed normal distribution and had equal variances, as indicated by the F-test. Data analysis of the pre-test scores in the control group revealed the learners’ writing skills in the experimental group were not superior to those in the control group. Hence, both could be subjected to different techniques.

The mean scores of both groups differed. Specifically, the mean score of the pre-test in the experimental group was 38.62, while that of the control group was 39.68. Meanwhile, the mean score of the post-test in the experimental group was 86.60, which was higher than that of the control group at 62.43. However, the experimental group showed a more significant improvement. Therefore, the game affect significantly on enhancing students’ learning outcomes in writing English descriptive text.

The mean scores of the pre- and post-test were analyzed for both the groups. Then, the deviation and square deviation scores were computed for each group. The total deviation score of
the experimental group was found to be 944.44, with a square deviation score of 454229.43. Meanwhile, the control group had a total deviation score of 477.78 and a square deviation score of 11982.93 which is shown in Table 2.

Table 2. Result of Deviation Score and Square Deviation

<table>
<thead>
<tr>
<th>Group</th>
<th>Deviation Score</th>
<th>Square Deviation Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>944.44</td>
<td>454229.43</td>
</tr>
<tr>
<td>Control</td>
<td>477.78</td>
<td>11982.93</td>
</tr>
</tbody>
</table>

The findings suggest that this game can effectively enhance students' learning outcomes. The acceptance of the hypothesis was supported by a higher t-counted value (6.847) compared to the t-table value (1.684).

Fig. 1. Standard Deviation of the Experimental Group

The mean score of the post-test in the experimental group was greater, with a deviation of 47.98. The variance value of post-test in the experimental group was also higher which was caused by the greater variance in the number of data for the post-test. The standard deviation, the square root of variance, revealed that the post-test data in the experimental group had a greater distribution.

The mean score of post - test in control group was greater than that of the pre - test, with a deviation was 22.75. The variance value of the post-test in the control group was also greater. This difference in variance can be attributed to the large number in the post-test. Similarly, the standard deviation, the variance root indicated that the post-test data distribution in the control group was wider.

In determining whether the hypothesis is accepted or rejected, the t-counted formula was used. When the t-counted value was higher, the hypothesis of this research was accepted; otherwise, it is rejected.

Furthermore, to determine whether the t-counted is greater than the t-table value, a degree of freedom (df) of 40 and a level of significance of 0.05 were
used for a two-tailed test, assuming equal variances. The analysis revealed that the t-counted value was (6.487) while the t-table value was 1.684. With the t-counted value higher, the hypothesis was accepted.

Table 3. T-test: Two-Sample Assuming Equal Variances

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>22.7566666</td>
<td>44.9771428</td>
</tr>
<tr>
<td>Variance</td>
<td>55.2754433</td>
<td>191.072441</td>
</tr>
<tr>
<td>Observations</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Pooled Variance</td>
<td>123.173942</td>
<td>4</td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Df</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>t Stat</td>
<td>6.48766759</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) one tail</td>
<td>4.8785E-08</td>
<td>9</td>
</tr>
<tr>
<td>t Critical one tail</td>
<td>1.68385101</td>
<td>3</td>
</tr>
<tr>
<td>P(T&lt;=t) two tail</td>
<td>9.75701E-08</td>
<td>2.02107539</td>
</tr>
<tr>
<td>t Critical two tail</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

This research examines the implementation of “Bits and Pieces” game to enhance the seventh graders’ learning outcomes at junior high school. Based on the result of t-test and two-samples assuming equal variances, the t-counted was greater than the t-table. It means that the hypothesis was accepted and it indicated that the game positively effect on enhancing seventh-graders’ learning outcomes in writing English descriptive texts. In other words, the game positively effect on students’ achievement, specifically in improving writing skills in organizing descriptive texts based on the generic structure, content, sentence structure, grammar, and mechanics.

These findings have great benefits for English teachers to improve their ability in implementing innovative learning in terms of using the game in instructional process and for seventh graders, their writing skills can improve specifically in writing English descriptive text. Knowing that the game helps students identify the bits and pieces of pictures that enable them to reconstruct and write a descriptive text based on the reconstituted pictures.

This research is in line with Dorozynsky and Dorozynska (2022) stated that game was enable the students to have better understand the material and helped them to create a narrative description and involve the students with the problem to be solved. This finding imply that the game is motivating and interesting for students to practice, fun, and it can encourage the students to engage in learning process. Vinter et al. (2022) and Kiili (2016) revealed that the games and online were more effective. It satisfies
the fundamental of learning environment and it can facilitate and engage learning experience. learning Most importantly, this study conveys us the interest of studying the effectiveness of digital games by considering cognitive process they mobilize and the learner’s level of development. While Kao (2020) confirmed that no significant difference was found between the digital game-based learning and cloze exercise group. This finding reveals that both of media have the same advantages on students’ learning outcomes.

Nafsah (2016), which used a quantitative After carrying out a pre- and post-test, the results obtained significant improvement in students’ achievement, and they became more curious to know everything.

Furthermore, Nurkhayatun (2011) Laili and Muflihah (2020); Said (2022) illustrated that in teaching writing to students, the teachers encountered problems in instructional process. Students struggled with writing a good descriptive text which is a genre. Nevertheless, following the intervention, their proficiency in nearly all five writing components (namely content, vocabulary, language use, structure, and mechanics) showed improvement. They exhibited enhanced writing skills in crafting and structuring descriptive texts effectively.

Moreover, Andayani (2018) suggested that bits and pieces game was effective and could be an alternative game to develop the eight graders’ speaking skills. Rizky (2020) confirmed that the bits and pieces game improve the skills in descriptive text. It was indicated by the improvement their mean in writing from 70.12 in cycle 1 to 79.75 in cycle 2, and they were also very motivated in the learning process.

Last but not least, it was quite different from Rojiayah, (2017) after applying the bits and pieces game, found that instructional process did not meet the target. Some challenges faced during the observation. The teacher had more credit hours, but could not provide interesting material, lacked competence in using games, and had a large number of participants in the classroom. Meanwhile the students had problems with all the components of writing. These evidences imply that the English teacher should be motivated and improved their knowledge and skills in implementing innovative learning and the school should consider a large number of students should be divided and placed at another room (Susanti et al., 2022 & Astuti, 2018).

Referring to the findings of the research above, “Bits and Pieces” game
had a positive effect on enhancing students’ learning outcomes. Therefore, it could be summarized that the bits and pieces were a great and exciting game that could be applied by teachers or lecturers in teaching not only language skills but also other subjects at different levels of students.

CONCLUSIONS AND SUGGESTION

This research aims to prove that the “Bits and Pieces” game has an effect on enhancing learning outcomes in writing English descriptive text. The game implementation significantly improved writing skills in terms of components of writing such as organization, content, mechanics, sentence structure and grammar (Oshima and Hogue, 2007). Besides that, it had an effect on enhancing the learning outcomes of State Junior High School students in Palu, Central Sulawesi, Indonesia, specifically in writing English descriptive text.

This is proved by the t-value (6.487), which was greater than the value of t-table (1.684). Therefore, bits and pieces can be a great and exciting game to apply when teaching students of different levels language skills, and genre types.

Therefore, the results of this research are expected to make a significant contribution to improve students’ writing skills, English teachers, lecturers, future researchers and institutions, both in schools and universities particularly, in implementing bits and pieces game for teaching writing English descriptive text.

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