

IMPROVING ENGLISH VOCABULARY MASTERY THROUGH THE USE OF LEARNING CIRCUIT MODEL

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Abstract

The aim of this study was to find out whether or not the use Circuit Learning Model is effective to improve students' vocabulary mastery of the first graders at SMP N 1 Kaliori in the academic year 2022/2023. The type of this study was a quasi-experimental research and the method was a quantitative method. The population of this study was the seventh graders of SMP N 1 Kaliori and the sample consisted of 30 students of VII 2 as the experimental class and 30 students of VII 6 as the control class. The try-out test for VII 1 class was done to know the validity and reliability of the instrument. Pre-test and post-test were given to the experimental and control class. The result was analyzed by using SPSS 26 version. The result of the pre-test for the experimental and control classes were 54.13 and 76.13. While the result of the post-test of the experimental and control class were 84.53 and 81.53. The post-test result from both classes were analyzed by using t-test. The result of the analysis shows that sig (2-tailed) 0.163 is ≥ 0.05 which means there was no significant difference in the result score between the control group and the experimental group. It was concluded that H1 was rejected and H0 was accepted. Therefore, the use of the circuit learning model to improve English vocabulary mastery for the seventh-grade students at SMP N 1 Kaliori was not effective. Some unpredicted factors which were out of control and need to be further researched can be the cause of the ineffectiveness.

Keywords: Vocabulary, Circuit Learning Model, Mastery

INTRODUCTION

Education has an essential role in improving the quality of human resources. Pustika (2021) said that English is used in many facets of modern life, including the economics, education, health, tourism, and technology. One of the foreign languages that will have a significant future impact is English. Mastering a foreign language is important in education because the higher the quality of education the more capable and reliable human resources will be in a nation. Therefore, teaching English is a major concern in the world. Teaching English covers macro and micro skills. Micro skills consist of vocabulary, grammar, spelling, and pronunciation. The most crucial skill that students must possess in order to understand English is vocabulary mastery.

The main complement in teaching a language is vocabulary. As quoted in (Alqahtani, 2015) who stated that vocabulary mastery is considered a skill or complete knowledge. Someone who has limited vocabulary will find it difficult to structure sentences, and expressing their idea. Vocabulary limitations will also cause students to lose interest in learning English. Proficiency in processing words of a language will depend on mastery of vocabulary (Susanto & Fazlinda, 2016). Most of teachers find it challenging to teach English, particularly when adding vocabulary in junior high school students.

The junior high school students have limited vocabulary knowledge, some of them think that learning English is difficult and boring. In fact, they also feel that the techniques in teaching English used by most teachers are very monotonous and difficult to attract their attention. However, the positive side from junior high school students tends to have very broad potential in learning and creative thinking. Their curiosity about new things is very big. Being an English teacher has a challenge as well as a big task in carrying out good and fun vocabulary teaching. The task of a teacher is to be able to prepare the teacher in the face of different classroom conditions. The teachers need to be aware of what students will learn and how it may affect or benefit them in the future (Derakhshan, 2015). A student will be easily negligent and bored in learning when they do not have a desire or goal in learning, therefore students do not get the advantages of learning itself. In addition, to prevent students from being quickly bored, teachers are supposed to be aware of each student's unique qualities and come up with innovative teaching strategies. There are many models for learning English vocabulary. And this study uses Circuit Learning as a model for learning English vocabulary.

One method for assisting students in strengthening command of vocabulary is the Learning Circuit Model. According to Huda (2013: 313), The learning circuit model is a kind of cooperative learning model that incorporates a thinking and problem-based approach in the form of a concept map and contains writing and pictures. By using patterns of addition and repetition, the learning circuit can help students maximize feelings and empower thoughts. This learning model can increase students' motivation and creativity in increasing vocabulary knowledge because this learning maximizes time in class. Students can also focus on the concepts presented by the teacher so that learning will be more meaningful and easy to remember.

Teaching vocabulary

Teaching English vocabulary is an activity that is not easy to do. Knowing the amount of vocabulary is very large and unlimited, a teacher must be able to determine the right

vocabulary teaching methods and techniques to achieve language teaching targets. According to Hatime (2009:2), the context of teaching vocabulary by showing the function and how to use words is significantly more meaningful than just asking students to look for meanings and definitions of vocabulary. Vocabulary acquisition cannot be done instantly and requires a long process to learn. Therefore teaching vocabulary will be more effective if it can be linked to students' daily lives and they can also practice it easily.

According Harmer as cited in (Yulianto, 2010) there are some method for teaching vocabulary that can be grouped into 2 parts, namely object and unobject. Unobject is a technique of teaching vocabulary by interpreting the meaning of words directly, such as in translation, enumeration, explanation, gesture, contrast, and mime techniques. While the object section is a technique for explaining the meaning of new words using objects or things that are around students (in class or at home), as in the case of picture and realia techniques.

Kinds of Vocabulary

According to Brown (2001:370) There are two categories of vocabulary: productive vocabulary and receptive vocabulary. Brown (2001:370) state that productive vocabulary is a set of words that students can readily understand and utter, enabling them to be used in writing and speech. Meanwhile, receptive vocabulary is words that are recognized by students but are rarely used and are not produced properly (Hatch & Brown, 2001:370). In addition, based on functional categories, Brown (2001:218) classify vocabulary into 2 parts including major class and closed class. Major class consist of noun, verb, adjective, and adverb. While closed class consist of pronoun, preposition, conjunction, and determiner.

Problem in Teaching Vocabulary at Junior High School

In Indonesia, teaching English is not the first learning activity carried out in junior high schools, but rather an advanced stage of learning in elementary schools even though the English material that students get is only basic and simple learning. During the process of learning English, some students face some difficulties, because each student has different abilities in English. Having a large vocabulary does not necessarily indicate that someone will succeed in learning English. On the other hand, someone who has a lack of vocabulary will not hinder someone's chances of success in learning English. Thornbury (2002) argues that there will not be much that can be said when speaking without grammar. Meanwhile, if people converse without using words, nothing at all can be said.

In fact, many students find it difficult to remember the vocabulary that has been learned, because English is a foreign language that is not applied in their daily lives. Every day they prefer to use their mother tongue in communicating with others. Every day they prefer to use their mother tongue in communicating with others. when the teacher evaluates the process of assessing the results of teaching English vocabulary, some students cannot understand the material 100%. Some students feel less confident during learning, therefore students do not have the courage to ask the teacher when facing difficulties. Students who aren't motivated to acquire English vocabulary also have a tendency to be passive and lazy when it comes to looking up new terms in dictionaries, which makes it difficult for teachers to teach vocabulary.

Several factors that cause problems in teaching vocabulary at junior high school are (1) lack of vocabulary mastery in students due to the lack of time for English subjects, (2) limited facilities and media in learning English, (3) students' difficulties in pronouncing and memorizing words correctly (4) Developing instructional practices that are inappropriate and inconsistent with students' qualities, (5) the class atmosphere is not conducive so that learning does not run smoothly

Concept of Learning Circuit Model

When learning English, most junior high school students have the same problems as when they were in elementary school. Students have limitations in acquiring vocabulary in English. With these problems, an effort is needed to create a higher-quality learning process. According to Joyce & Weil in Rusman (2014: 133), A pattern or plan can be used to create learning materials, which is the curriculum (long-term learning plan) that can be created using the learning model. The use of learning models is one of the goals in improving students' English vocabulary skills. Making instructional materials requires the use of learning models to ensure that the learning process follows the prescribed procedures. Therefore, a teacher must be smart in choosing the right learning model according to the character and condition of the students in the class, so that it can maximize students' abilities and minimize failures in the student learning process.

Miftahul Huda (2013:311), Circuit Learning Model is one sort of cooperative learning model that enhances the empowerment of feelings and mental power which used a pattern of addiction and repetition that encourages students to become more engaged in their learning in order to achieve the best result. This learning model can create a more focused and conducive classroom atmosphere, and make students have creative thinking patterns, innovative language concept maps, and end with reflection (Budiyanto, 2016:102).

An educator begins this learning process by making a concept map in explaining the material to students, then when the material wants to be continued at the next meeting, the teacher will add a new branch of the concept map studied previously, as well as for the next day until the material is finished. Therefore, the implementation of the Circuit Learning Model is expected to help students focus more on concept maps or pictures presented by the teacher in learning, it can also increase students' creativity in acquiring vocabulary so that the learning process can be more relevant and students don't get easily bored.

The Advantages and Disadvantages of Circuit Learning Model

The advantages in using the Circuit Learning Model according to Huda (2013: 313) are (1) students can increase their creativity and innovation when assembling words according to their own language (2) students independently can observe and compose their sentences about the explanation of the material from the teacher, so that learning will be more memorable, good for students because they have experienced it themselves (3) students are more focused and concentrated in studying the concept map that has been presented by the teacher. The advantages of circuit learning are being able to raise students' curiosity in learning new things. The learning process will also feel more exciting because it is done in groups and students can exchange ideas with one another. In addition there are the disadvantages of Circuit Learning Model are: this strategy

implementation process takes a long time, and not all of the discussion points may be used with this approach.

METHOD

Respondents

The respondents from this study were the first graders of SMP N 1 Kaliore in the academic year 2022/2023. This study used non-random sampling. Non random sampling consists of 3 types, namely convenience sampling, purposive sampling, and quotas sampling. Purposive sampling was decided to be used in this study based on recommendations from English teachers for 2 classes that have the same capability. This study took respondents from 2 classes. The 2 classes were VII 2 and VII 6. Below is a table of data from respondents:

Table 1. The Data of the Respondent

| Class | Gender | | Total |
|----------------------------|-----------|-----------|-----------|
| | Male | Female | |
| VII 2 (Experimental class) | 16 | 17 | 33 |
| VII 6 (Control class) | 20 | 12 | 32 |
| Total Respondents | 36 | 29 | 65 |

The table explains that class VII 2 which consists of 33 students (16 males and 17 females) was selected as the experimental class taught using the Circuit Learning model. Meanwhile, VII 6 consisting of 32 students (20 males and 12 females) was used as a control class which was taught without using a circuit learning model. Therefore, the total of respondents from this study was 65 students.

Instruments

According to Ari Kunto (2010: 160) research instruments are tools used to simplify work while collecting data. To measure vocabulary mastery, the instrument of this study was test to collect the data. There were 2 test which were given to students namely pre-test and post-test. One type of test that was used in the pre-test and post-test is multiple choice which contains 25 questions with time allocation 1 X 40 minutes. Pre-test was given to the experimental group and control group with the aim of knowing the students' vocabulary mastery before the circuit learning model treatment. While Post-test was used to measure students' vocabulary skills after given the treatment.

Procedures

In the procedure of the study, this study used some steps. First activity is visiting school to get information about students, teachers, and all participants. Second, Asking permission from the headmaster and contact English teacher of SMP N 1 Kaliore in the academic year 2022/2023. Third, Choosing the population of the study, and the populations was the first graders of SMP N 1 Kaliore in the academic year 2022/2023. Fourth, Taking only 2 classes from the population for choosing the sample. The Control group were VII 2 and VII 6 as the experimental group. Fifth, conducting the pre-test for

the experimental group and control group before the treatment will begin. After giving the pre-test, each group will get a different treatment. The next activity is conducting the post-test. Both groups will get the same question and it is taken from the topics that are given in the previous step. From this step, this study will get the result of the treatment. Seventh, collecting the post-test students' answers and scoring the test and determining the result of the two groups. The last procedures is analyzed the data.

Data Analysis

After passing the data scoring stage. This research was continued by processing the data statistically. Statistical data processing aims to analyzed data from the experimental group and the control group. This study analyzed the data by using a t-test. Before carrying out the t-test, this study measured the standard consisting of normality, homogeneity, and mean score data. According to Ghozali (2009:32), it can be said that it is not normal if sig (2-tailed) < 0.05. Conversely, if sig (2-tailed) > 0.05 then the distribution is normal. One-sample Kolmogorov-Smirnov used to analyze the normality of the data in this study. The standard normality is 0.05. Then, in the next step, the data was analyzed by using SPSS 26. Further, the criteria for hypothesis are: (a) If t-value > t-table and sig ≤ 0.05, it means that H1 is accepted and H0 is rejected. (b) If t-value < t-table and sig ≥ 0.05, it means that H1 is rejected and H0 is accepted.

RESULTS AND DISCUSSION

Research finding

The aim of this study was to find out whether or not the use Circuit Learning Model is effective to improve students' vocabulary mastery of the first graders at SMP N 1 Kaliori in the academic year 2022/2023. The result of this study there was no significant difference in result scores between the experimental class which was taught by using the Circuit learning model, and control classes which was taught by using conventional methods. Following data analysis, as follows:

Validity and reliability of instrument

To test the validity of the test questions, this study used face and content validity that was filled by expert judgment through rubric validation. This validation evaluates several criteria such as writing format, writing style, language format, and suitability of questions with answers. Meanwhile, to find out the results of content validity, namely by providing a validation rubric to English teachers and lecturers to validate the content of the test based on the syllabus and 7th-graders material used in the school. below is a table that shows the results of the validity and reliability of the instrument:

Table 1. The Result of Instrument Validity

| Level | The number of Instrument |
|----------------|---|
| Valid | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50 |
| Invalid | - |
| Total | 50 items |

From the table above, it can be seen that in this study there were 50 items used in the Try-out test. Based on the results of the try-out judgment rubric filled by teachers and lecturers, there were 50 questions valid and there were no invalid questions.

After measuring the validity test, the next step was reliability test. Reliability test is a tool to measure a data or questionnaire which is an index of variables. In measuring the reliability of the test, this study used the Cronbach's Alpha formula in SPSS 26.

Table 2 Reliability Test Result

| Reliability Statistics | | |
|------------------------|--|------------|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
| 0,840 | 0,846 | 50 |

Based on the table above, it shown that the Cronbach’s Alpha for the analysis is 0.840 and Cronbach’s Alpha Based on Standardized Items is 0.846. Therefore the result of reliability test explains that $0,840 \geq 0.60$, that means all variable with 50 items in this study is reliable.

Analysis of Normality

The normality test was used to know the data that obtained was normaly distributed or not. After the students did the pretest, the data was analyzed by using SPSS 26. One-sample Kolmogorov-Smirnov used to analyze the normality of the data in this study. The results from the normality test can be seen on below table:

Table 3. Normality of Pre-Test in Control Class and Experimental Class

| Test of Normality | | | | |
|-------------------|---------------------|---------------------------------|----|-------|
| | Kelas | Kolmogorov-Smirnov ^a | | |
| | | Statistic | Df | Sig. |
| Hasil Belajar | Pre Test Experiment | ,141 | 30 | ,134 |
| | Pre Test Control | ,128 | 30 | ,200* |

From the table above showed that the result of pre-test for experimental class normality of significant 2-tailed is $0.134 > 0.05$ while the result of pre-test control class is $0.200 > 0.05$. Hence, the sample in this study can be said normal.

Analysis of Homogeneity

After analyzing the standard normality of the pre test, the next step is to test the standard homogeneity from the pre test. The homogeneity test has the aim of knowing that the experimental class and the control class have the same variance or ability. If a data significance value shows $\geq \alpha (0.05)$, it means that the data of the two groups is

homogeneous. The result of homogeneity for pre-test which was analyzed by SPSS 26 can be seen in the following table:

Table 4. Analysis of Homogeneity for Pre-Test Control And Experimental Class

| Test of Homogeneity of Variances | | | | | |
|---|--------------------------------------|------------------|-----|------------|------|
| | | Levene Statistic | df1 | df2 | Sig. |
| Hasil Belajar | Based on Mean | 2,831 | 1 | 58 | ,098 |
| | Based on Median | 2,842 | 1 | 58 | ,097 |
| | Based on Median and with adjusted df | 2,842 | 1 | 57,8 59 | ,097 |
| | Based on trimmed mean | 2,778 | 1 | 58 | ,101 |

Based on the calculations of homogeneity test, the table 4.5 which used Lavene Statistic or Equality of Variances shows that the significance score of the both group was $0.098 \geq 0.05$. Therefore, it can be sum up that the data from pre-test of experimental and control class had same variance or homogeneous.

Independent Sample T-test

After this study measured the standard normality and homogeneity, the next stage analyzed the pre-test and post-test from both group by using T-test. The table below shows the result by using independent sample T-test:

Table 5. Group Statisticof Pre-test

| Group Statistics | | | | | |
|-------------------------|------------------|----|-------|----------------|-----------------|
| | Kelas | N | Mean | Std. Deviation | Std. Error Mean |
| Hasil Belajar | Experiment Class | 30 | 54,13 | 13,003 | 2,374 |
| | Control Class | 30 | 76,13 | 10,789 | 1,970 |

Table 6. Independent Samples Test

| Independent Samples Test | | | | | | | | | | |
|--------------------------|-----------------------------|---|------|------------------------------|--------|-----------------|-----------------|-----------------------|---|--------|
| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Hasil Belajar | Equal variances assumed | 2,831 | ,098 | -7,132 | 58 | ,000 | -22,000 | 3,085 | -28,175 | 15,825 |
| | Equal variances not assumed | | | -7,132 | 56,089 | ,000 | -22,000 | 3,085 | -28,179 | 15,821 |

From the result of T-test, it can be concluded that the mean score of pre-test in experimental class was 54.13 and pre-test from control class was 76.13. While based on the table independent samples test, it can be explains that Sig. (2-tailed) indicates the number 0.00. Because $0.00 \leq 0.05$ that means there was significant difference between the result score for the control and the experimental group. If there was significant difference, hence the null hypothesis or H0 was rejected and H1 was accepted.

Table 7. Group Statitic of Post-test

| Group Statistics | | | | | |
|------------------|--------------------|----|-------|----------------|-----------------|
| | Kelas | N | Mean | Std. Deviation | Std. Error Mean |
| Hasil | Experimental Class | 30 | 84,53 | 9,111 | 1,663 |
| | Control Class | 30 | 81,53 | 7,234 | 1,321 |

Table 8. Independent Samples Test

| Independent Samples Test | | | | | | | | | | |
|--------------------------|-----------------------------|---|------|------------------------------|--------|-----------------|-----------------|-----------------------|---|-------|
| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Hasil | Equal variances assumed | 2,559 | ,115 | 1,412 | 58 | ,163 | 3,000 | 2,124 | -1,252 | 7,252 |
| | Equal variances not assumed | | | 1,412 | 55,164 | ,163 | 3,000 | 2,124 | -1,256 | 7,256 |

From the table above, it explains that the mean of the experimental class is 84.53 while the control class is 81.53, that means the total mean of the experimental was higher than the control. However, the table shows that Sig. (2-tailed) $0.163 > 0.05$ which means that H_0 was accepted and H_1 was rejected. It can be concluded that there was no significant difference in the result score between the control group and the experimental group. If there was no significant difference it means the circuit learning model was not effective in learning vocabulary. Some factors probably caused the model was not effective and it is elaborated in the discussion subchapters.

RESULT AND DISCUSSION

The aim of this study was to find out whether or not the use Circuit Learning Model is effective to improve students' vocabulary mastery of the first graders at SMP N 1 Kaliori in the academic year 2022/2023. Based on the explanation from the previous table, the results showed that the average value of the pre-test in the experimental class was 54.13 while the average value in the control class was 76.13. After receiving the pre-test, both classes were given treatment twice with different methods. Then, the last process is the post-test. The process is carried out to find out the results after both classes receive treatment. The average post-test value of the experimental class was 84.53 while the control class was 81.53, and the table shows that sig (2-tailed) $0.163 \geq 0.05$ which means there was no significant difference in scores between the experimental class using the Circuit learning model. and control classes using conventional methods. Although there was no significant difference in the scores of the two groups, the average post-test score of the experimental class was higher than that of the control class. This means that the treatment in the experimental class can affect students' vocabulary mastery, although the results showed there were no significantly different between both classes.

Another some factor caused the model was not effective is because students used the cellphones at the wrong time. After the Covid-19 pandemic ended, students tended to depend on the use of cell phones. As a consequence, this has a bad impact on learning in the classroom, especially in this study. (1) Some of the bad effects of bringing cell phones into the classroom, especially in the experimental class, is that some students were not focused and could not concentrate their minds during learning. Therefore, the level of understanding of some students on the material becomes low. (2) Some male students were too enthusiastic when studying in class and they often asked some questions that were not related to the material (out of the topic), so the class atmosphere becomes crowded. (3) Another factor was evidenced when students did the post-test, there were some students who were very quick to do the post-test and slept at their desks, and there were also students who play with their friends when they have not finished doing the post-test. To prevent this, often teachers have given warnings, and affirmations, or made good communication with students, but it did not affect too much on them.

CONCLUSION

Grounded on the result of data analysis, it can be concluded that there was no significant difference in result scores between the experimental class which was taught by using the Circuit learning model, and control classes which was taught by using conventional methods. It can be seen in the post-test result, the average of experimental class was 84.53 while the control class was 81.53, and the independent sample t-test showed that sig (2-tailed) 0.163 is ≥ 0.05 . It means that H_0 was accepted and H_1 was rejected and the use circuit learning model could not improve students' English vocabulary mastery.

It is caused by the use of mobile phones at the wrong time, so it can interfere students' concentration while studying and students' understanding of receiving material (new vocabulary) which were low. In addition, students must also be calmer when learning and were not asked questions outside of the material. Therefore, the teacher gave warnings, affirmations, and made good communication with students so that learning runs smoothly and enjoyably. Eventhough it was still not like what was expected.

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