The Effect of Using Clustering Strategy by Random Card Media on The Students' English Vocabulary

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Abstract. This research was carried out to investigate the effect of using a clustering strategy by random card media on the students' English Vocabulary. The population of this research was the seventh-year students of SMP Muhammadiyah 05 Medan 2019-2020 which consisted of 64 students. By using total sampling, the total sample of this research was 64 students. The sample of this research was all of the population. The sample was divided into two groups, class VII -1 was for an experimental group that used Clustering Strategy and class VII-2 was for a control group that using Lecturing strategy. This research was using an experimental research method. The test was taken from the students' worksheets. The test was given to the experimental and control groups in a multiple-choice test consisting of 20 items to know the significant effect of using the clustering strategy and lecturing strategy. The finding of the research showed that there was a significant effect of using the clustering strategy by random card media on the students' English vocabulary because $t_{observe}$ was higher than t_{table} (3,16 > 1,670). It meant that the alternative hypothesis (Ha) was accepted.

Keywords: Clustering Strategy, Random Cards Media, Vocabulary.

1. Introduction

1.1. The Background of the Study

One of the key language components in learning English is vocabulary. Anyone who lacks a sufficient vocabulary will have difficulty speaking, reading, listening, and writing. In other words, vocabulary is the first skill that language learners must acquire in order to learn a language, particularly English. It implies that mastering language is crucial, particularly for junior high school kids. To communicate with others, they must become fluent in both the vocabulary and grammatical conventions of English.

According to Richard (2001: 4), vocabulary is one of the essential parts of language and is one of the topics that linguistics studies. They will be more capable in other areas if they can grasp a large amount of English vocabulary. In addition to speaking and writing, they are also listening. Without vocabulary, nothing can be said; without grammar, very little can be said. We are unable to communicate when we only study grammar without understanding language. It demonstrates that English has a unique place in the instruction of foreign languages in schools, particularly in junior high. Because English has a completely different structure, pronunciation, and vocabulary from

Indonesian, there are still issues with learning and teaching English in schools. The ability to plan teaching-learning activities is necessary for the English instructor if they are to instruct English students successfully and creatively. They must use an effective teaching technique to present the subject. Like teaching English, which requires a suitable strategy and procedures, teaching language also requires appropriate tactics and methods. A solid teaching strategy helps students comprehend and grasp the material. For some students, learning English—especially memorization of vocabulary—can be tedious.

Learning vocabulary is challenging. Learning the meaning of the words, how to use them, how to pronounce them, and how to spell them are some of the vocabulary-building skills that should be mastered. One issue with learning English vocabulary is that people frequently forget the new words they have acquired after doing so. Students who read in English must master a wide variety of vocabulary. If not, pupils will stop participating. In actuality, a lot of students still struggle with terminology.

There are some issues that can be recognized to be addressed in this research based on the backdrop mentioned above. The issues include the following.

  (1) A lot of students performed poorly on vocabulary tests.
  (2) Many terms in sentences or text, as well as their different forms, are unfamiliar to students.
  (3) Vocabulary learning proved to be challenging for the students.

Taking into account the aforementioned aspect, the researcher used a clustering technique for teaching vocabulary. The clustering approach, also known as mapping, webbing, looping, or diagramming, is an effective way to condense a wide subject into a manageable and limited way of teaching, particularly when teaching vocabulary. It is yet another efficient method for learning vocabulary while also gathering data for an essay on writing techniques. Free association is used during clustering. Start with a blank sheet of paper to group ideas. Write and circle the word or phrase that best conveys the general topic you wish to write about in the center of the page. The pupils choose the random card at random, after which they must construct a short statement using the words from the random card.

1.2. Formulation of the Problem

According to the study's backdrop, the research asks whether adopting a clustering approach with random card media in the first grade of SMP Muhammadiyah 05 Medan has any discernible effects on the students' English vocabulary.

1.3. The Objective of the Study

Based on the aforementioned formulation, the goal of this study is to determine the significant impact of students' English vocabulary by employing a clustering technique through random card media at SMP Muhammadiyah 05 Medan's first grade.

1.4. Significance of the Research

This study's findings are anticipated to have substantial impacts, both theoretical and practical:

1. Theoretically

The discoveries might expand a researcher's theoretical vocabulary and serve as a source for future research.

2. Practically
a. Making the learning process more engaging and interactive for pupils is anticipated to boost both their motivation and interest in learning English as well as their vocabulary.
b. In the second grade at SMP Muhammadiyah 05 Medan, it is anticipated that the Clustering Strategy will be able to improve teachers' understanding of teaching English.
c. The outcome of this study is anticipated to be a fundamental consideration and fundamental knowledge for other scholars to conduct additional research.

1.5. Review of Literature

1.5.1. Clustering Technique

It is intriguing to select a clustering technique to be examined in this research since the Kurikulum Tingkat Satuan Pendidikan (KTSP) places a lot of emphasis on students' ability to utilize English contextually. The clustering approach, also known as mapping, webbing, looping, or diagramming, is an effective way to condense a wide subject into a manageable and limited way of teaching, particularly when teaching vocabulary. It is yet another efficient method for learning vocabulary while also gathering data for an essay on writing techniques. Free association is used during clustering. Start with a blank sheet of paper to group ideas.

Write and circle the word or phrase that best conveys the broad subject in the center on which you want to write. According to another expert, clustering is a technique used to build an outline from the broadest concepts to the most detailed ones at the beginning of the issue.

It is advantageous to recognize the connections between specifics, arrange data in a sensible way, and create focused support for the primary concepts. Word maps can be used to show how words relate to one another. Create word maps by placing the main word in the center of the page and encouraging the kids to think of terms that are connected. As in a simple mind map, connect these words from the brainstorm to the target word. Word clouds could include:

a. Words whose meanings are comparable to those of the focus word;
b. similar word family words
c. cords with the same subject or theme;
d. Different interpretations of the focal word: Students should only be exposed to a word's different interpretations once they have mastered its most common usage to avoid confusing them. Students that use word maps can relate new words to their existing knowledge. They demonstrate the connections between words' concepts. By illuminating these connections, pupils are better able to adapt their

current conceptual frameworks (schema) and create deeper meaning when they encounter textual terms.

1.5.2. *Use of the Clustering Approach in Teaching*

From the idea presented above, it is clear that clustering is a tactic that can be employed to produce content for a paper. This approach is beneficial for people who prefer to visualize their thoughts. Use lines, boxes, arrows, and circles to depict relationships between the ideas and information that are present when clustering.

The steps to create clustering, according to Langan (2003: 29), are:

1. Start by declaring your topic briefly in the middle of a blank piece of paper. As the information comes to you, organize it into boxes or circles and draw connecting lines to demonstrate how it relates to other information.
2. There is no right or wrong method to cluster or draw data, so keep that in mind. It is a means to consider on paper how different concepts and facts are connected to one another.

Additionally, the major idea's keywords are placed in the middle of a page (or on the board) and are surrounded by them, with the teacher (or students using their own ideas) prompting free association for a few minutes with the topic using straightforward words or brief phrases. In contrast to listing, the created words or phrases are written on the page or board in a pattern that develops from the connections the writer notices as each new idea occurs. Depending on how the component associations are drawn to relate to one another, Murcia (1991: 253) stated that "Completed clusters can look like spokes on a wheel or any other patterns or any other pattern of connected lines. Teachers allow students to be exposed to a wide array of subject-matter approaches by having them share their cluster patterns with their classmates, which may further inspire writing. This approach is used to group vocabulary.

Axelrod and Cooper (1985: 461) have similar perspectives on the use of clustering in education. According to them, clustering is a creative activity that highlights potential connections between facts and concepts. Contrary to listing, clustering just needs a short initial planning phase. The issue must be tentatively broken down into subparts or key themes. Following is how clustering operates:

1. The center of a piece of paper should be written in a word or phrase. Encircle it.
2. The key concepts of your topic should also be written down in a word or phrase in the center.
3. The following phase is to come up with information, examples, details, or concepts that are somehow connected to these key components.

The Benefits and Drawbacks of the Clustering Strategy

    a. The Benefits of Using a Clustering Strategy

The clustering method has certain benefits that can be discovered. The following are some benefits of utilizing a clustering method, as mentioned by Gabriele in Sabarun (2013):

1) Students are better able to integrate new language into their knowledge base by making connections between it and terms and ideas they already understand.
2) Students are able to relate new terms to previous knowledge.
3) The clustering technique offers a possibility to keep students' interest and motivation in the learning process at a high level.
4) Students' minds can be organized using the clustering approach.
5) Students' vocabulary can grow or develop with the aid of the clustering approach.

b. Cons of the Clustering Strategy
The clustering strategy has various drawbacks, which are as follows:
1) Because of the many stages involved in the activities, it could take a while.
2) Because all groups in class engage in conversation or discussion while learning, the classroom may be boisterous.
3) Because professors don't directly teach or only monitor, the class needs extra supervision. The leader of each group actually takes the place of the teacher.
4) Due to their still-limited vocabulary, students may struggle to express the stimulus word or link it.
5) Not all students were able to think quickly and articulate the terms that connected to the primary word.

The Clustering Strategy Procedures
Identify the words or phrases that were the focus of the learning topic or aim before the session even gets going.
1) The pupils were split into two groups by the researcher.
2) Students were instructed to mention other terms that had clustered the word or phrase after the researcher requested the group to write a name on the board.
3) The researcher recorded all student responses in chronological order on the board. Aim for a maximum of 15 responses.
4) Students are instructed to organize the words into a set of sentences after the required number of replies have been received. Assemble the group into a role model to illustrate how people are related.

1.5.3. Random Card

One of the media tools used to teach English, particularly in vocabulary, is the random card. With regard to random card media, there is no unified definition. Experts have provided some pertinent explanations concerning the significance of random card media. Random cards, according to John Haycraft (1978: 102) are cards with words or images printed or painted on them. Write questions on one side of the cards and the answers on the other to create random cards, which are an effective memory aid (Edwards, 2006: 98). The cards with painted or drawn phrases, pictures, or both are known as random cards (Inayah, 2010:19). Random cards display words or pictures. Typically, 10–11 cards drawn at random contain groups of a certain kind or class. According to what was previously discussed, random cards are cards containing a word or words, a number, or an image on them that teachers and students can use in the classroom to help them learn and retain new words.

Conceptual Framework

Vocabulary mastery is crucial for students learning English as a second language. For this reason, the words should be known by everyone learning English or another language. The ability to talk and write in English as well as translate words' meanings while communicating with others depends on their command of the language. They won't be able to speak, write, or translate anything in English if they don't understand the meaning of the terms. If students develop their vocabulary, they might be said to be improving their English. Therefore, the primary goal of this study is to determine whether applying the clustering technique with random card media has a discernible impact.

2. Data Collection Methodology

To obtain correct data for this study, the researcher tested the data by gathering the following information:

a. Providing a pre-test
   The exam is given to determine whether the sample participants' vocabulary-learning abilities are similar or different. Both the experimental and control groups are given treatment for this test.
b. Treatment
   Students received treatment following the administration of the pre-test. The experimental groups were taught utilizing a clustering mechanism, while the control group received instruction using the traditional manner.

2.1. Activities of the teacher and students in the experimental group

Teachers' activities

1) Identify the words or phrases that were the focus of the learning topic or goal before the class even begins.
2) The pupils were split into two groups by the researcher.
3) The researcher instructed the class to put a name on the board and to ask the students to say any other terms that were clustered with the word or phrase.
4) The researcher recorded all student responses in chronological order on the board. Aim for a maximum of 15 responses.
5) After receiving the required amount of responses, students are instructed to arrange the words into a collection of sentences. Assemble the group into a role model to illustrate how people are related.

Students' activities

1) Heard the instructor's explanation.
2) Students divided into two groups and filed in front of the class.
3) After discussing it, the students had to write the term or phrase that connected to the cluster word on the board.
4) After watching the other group's response, each group shared its thoughts.

5) Students penned their responses in short sentences.

2.2. Activities of the teacher and students in the control group

Teachers' activities

1) The researcher questioned the pupils about their prior knowledge of words.

2) The researcher provided vocabulary explanations based on the text.

3) After writing the passage's title on the board, the researcher asked the students what they thought about it.

4) Requested that the pupils read the text.

5) The pupils were instructed to write the word they didn't comprehend by the researcher.

6) The pupils were asked to take the test by the researcher.

Students' activities

1) Students responded to the researcher's inquiry.

2) The lesson plan included the researcher's explanation.

3. Students responded to the researcher's query.

4) Students read the assigned text.

5) After writing a word they didn't understand, the students looked it up in a dictionary.

6) Students responded to the query.

a. Providing a post-test

After the treatment was finished, the post-test was given to the pupils to gauge their proficiency. The groups' performance was then contrasted and examined.

b. Receipt of Student Worksheet

The researcher gathered the worksheets from the students after administering the post-test.

c. Managing student performance

The researcher provided the students' scores after gathering the worksheet from the students.

2.3. Technique of Analysis of the Data

After collecting the data from the test, it is calculated by using a t-test. The following procedure was implemented to analyze the data.

1. List their score in two tables, first for the experimental group scores and second for the control group scores.

2. Measuring means of variable X and variable Y by using the following formula (Sudijono, 2009:88):

$M_1 = \text{M} + 1\left[\frac{\sum f x^1}{N_1}\right]$ for variable X

$$M_2 = M + 1 \left[\frac{\sum fx^2}{N_2}\right] \text{ for variable Y}$$

3. Measuring the standard deviation of variables X and Y by using the following formula (Sudijono, 2009:162) :

$$SD_x \text{ or } SD_1 = i \sqrt{\frac{\sum fx^2}{N_1} - \left[\frac{\sum fx}{N_1}\right]^2} \text{ for variable X}$$

$$SD_y \text{ or } SD_2 = i \sqrt{\frac{\sum fx^2}{N_2} - \left[\frac{\sum fx}{N_2}\right]^2} \text{ for variable Y}$$

4. Measuring the standard error of variables X and Y by using the following formula:

$$SE_{m1} = \frac{SD_1}{\sqrt{N_1 - 1}}, \quad SE_{m2} = \frac{SD_2}{\sqrt{N_2 - 1}}$$

5. Measuring the differences in standard error mean variables X and Y

$$SE_{M1-M2} = \sqrt{SE_{M1}^2 + SE_{M2}^2}$$

6. Testing hypothesis

$$t_o = \frac{M_1 - M_2}{SE_{M1} - SE_{M2}}$$

Note:

SD_1	= Standard Deviation of Experimental Group
SD_2	= Standard Deviation of Control Group
X^2	= Total score of post-test in experimental group
Y^2	= Total score of post-test in control group
N_1	= Total sample of experimental group
N_2	= Total sample of control group
SE_{m1}	= Standard error mean in experimental group
SE_{m2}	= Standard error mean in control group
SE_{m1}, SE_{m2}	= The error of standard deviation
t_o	= Test observation Sudijono (2010: 314)

The statistical formula:

If t-test > t-table = Ha is accepted and Ho is rejected.

If t-test < t-table = Ha is rejected and Ho is accepted.

Where:

Ha   : There is a significant effect of using a clustering strategy by using random cards on the student's English vocabulary.

Ho   : There is no significant effect of using a clustering strategy by using random cards on the student's English vocabulary.

2.4. Research Finding

On the student's proficiency in English vocabulary, it was discovered that the adoption of a clustering technique via random card media had a substantial impact. The students who were taught the clustering procedure using random cards had a higher grade than those who were taught using the traditional approach. The test's findings indicated that the tobserve (3.16 1.670) was greater than the ttable. It means that the student's performance in English vocabulary was significantly impacted by the clustering approach used with random card media.

As a result, the researcher came to the conclusion that the alternative hypothesis, "There was a significant effect of using clustering strategy by random cards media on the student's achievement in English vocabulary," was accepted. This means that using clustering strategy can help students, particularly when it comes to learning vocabulary.

3. The Findings and Discussion

Vocabulary mastery is crucial for students learning English as a second language. For this reason, the words should be known by everyone learning English or another language. The ability to talk and write in English as well as translate words' meanings while communicating with others depends on their command of the language. They won't be able to speak, write, or translate anything in English if they don't understand the meaning of the terms. If students develop their vocabulary, they might be said to be improving their English.

In order for pupils to learn quickly and actively, the instructor must use creativity to identify appropriate media to help students expand their vocabulary. The clustering strategy using randomly selected cards is one of many methods for learning vocabulary. Start with a blank sheet of paper to group ideas. Write and circle the word or phrase that best conveys the general topic you wish to write about in the center of the page. According to another expert, clustering is a technique used to build an outline from the broadest concepts to the most detailed ones at the beginning of the issue. The clustering approach involves developing a list of terms from a word that is connected to the related words in the form of a bubble diagram. In this situation, it is anticipated that the clustering technique will help students expand their vocabulary by fusing the new words they discover with the terms they already know.

It is a successful method for teaching vocabulary while also gathering data for an essay on writing techniques. Free association is used during clustering. Start with a blank sheet of paper to group ideas. Write and circle the word or phrase that best conveys the general topic you wish to write about in the center of the page.

4. Conclusions

The following results were reached after data analysis:
Based on the data analysis, it was discovered that using the clustering strategy with random card media had a significant impact on the student's proficiency in English vocabulary. This was demonstrated by the total scores of the pre-test and post-test taken prior to treatment, which were 1765 and 2515, respectively. T-observe and t-table were

discovered to be 3.16 1,.670 with df = 62 (32+32-2). Most students engaged with the lecture by implementing the clustering method using random card media in an effective manner. It was characterized by an increase in students' engagement in learning and learning results. Therefore, it can be inferred that the clustering technique using random card media is successful at teaching vocabulary. After receiving treatment, the majority of the children acquired new language that was simple to learn and for which they understood the meaning.

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