

Mind Mapping Technique on Junior High School Students' Speaking Skills

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ABSTRACT

The objective of this research is to find out whether Mind mapping is effective or not in teaching speaking at eight-B grade of SMP N 4 Sorong Regency. Related to the objective of the research used pre-experimental quantitative research design. The design of this research was one group pre-test-post-test. The population of this research was eight grade students divide two classes that were VII A and B, the total of them were 37 students. Based on purposive sampling, the researchers chose eight B grade and which total was 10 students because the class was lack in speaking so they have low score and the students from Papua was dominant. In the collecting of data, the researchers did interview with five questions for pre-test and post-test. In analyzing the data, the researchers used SPSS 20 program to calculation the data. The result findings of the research showed that the result of N-gain was 43,77 with categorized was quite effective. In addition, the result of T-test was P-Value $(0.000) < \alpha (0.05)$, it means that H_1 was accepted and H_0 was rejected. It can be concluded that Mind Mapping Technique in Teaching Speaking was effective.

Key words: Mind Mapping, Technique, Teaching Speaking

INTRODUCTION

Speaking is process to produce the language for make interaction with others. Through speaking we create sounds of the words that we want to say to the other people because speaking is the first form of communication. Speaking is the second of the four language skills. Thornbury (2005:1), speaking is so much a part of daily life that with take it for granted. Speaking is the most important skill because it is one of the abilities that is needed to perform a conversation. Asrifal Mirza (2016) English Speaking is a very important skill that has to be possessed by students in studying English in order to be able to communicate with other people from different countries. Nurmawati(2018:11), speaking is to say words orally, to communicate as by talking to make a speech. Speaking is the process of making and sharing meaning by using verbal and non-verbal symbols in different contexts.

English speaking is very important know because English is an international language so when we can speak English, it makes us be easier to talk to the other people from other countries, can take care of ourselves when traveling to another country and there's a lot of things we can do in this era with English.

In Indonesia, English is a foreign language. Many schools are difficult to teaching English, one of them is SMP N 4 Sorong Regency when the teacher teaching the students, they didn't understand. Through interview by the researcher with English teacher at eight-B grade of SMP N 4 Sorong Regency, the researcher found the data that speaking English skills was so less. Besides that, based on the interview from the students has given new information. It was students were difficult in speaking English because the teacher was only come to the class two times in one semester. It made the students did not have an opportunity to practicing the English words or phrases. Therefore, the students have a statement that English is very difficult especially about how to speak and they were very anxiety when spoke in English because they did not know about the pronunciation of the words. They were very scared if they cannot to say the words correctly. To teaching English specially speaking, the teacher must have an effective technique. These are some effective techniques in teaching speaking; a discussion activity, a role play, storytelling, story completion, reporting and mind mapping. To overcome the problem at SMP N 4 Sorong Regency, the researcher has chosen the mind mapping technique in teaching speaking because mind mapping is a great way to organize their thoughts more productively. Mind maps are two dimensional in structure, they show the shape of the subject, the relative importance of each other and how the facts relate to each other.

LITERATURE REVIEW

The researchers, Goodnough and Long (2002) found mind mapping to be useful strategy for introducing new concepts, providing a whole – class focus for large research project, assessing learning of individuals and offering greater choice in how people chose to complete assignments and projects. Hussain and Hennessey (2002) found that mind mapping improved the long-term memory of factual information in medical students by 10%. They reported that “mind maps provide an effective study technique when applied to written material” and are likely to “encourage a deeper level of processing” for better memory formation.

According to Buzan (2006) mind mapping is an expression of radiant thinking and therefore natural function of the human mind. It is a powerful graphic technique which provides a universal key to unlock the potential of the brain. It can be applied to every aspect of life where improved learning clearer thinking will enhance human performance. Mind mapping has four essential characteristics:

1. The subject of the attention is crystallized in a central image
2. The main themes of the subject radiate from the central image a branch.
3. Branches comprise a key image or key word printed on an associated line. Topic of lesser importance is also represented as branches attracted to the higher-level branches.
4. The branches form a connected nodal structure

Murley (2007) explained that the radiating design of mind-map keeps the main topic idea central stand together with all its major sub-topic neighbouring it. Mind mapping is more flexible that student's creativity will be encouraged. Memory storage is enhanced as mind mapping allows displaying all related topics on the same mind map, with keywords and connections indicated by imaged, symbols, and colours. Mind map is not only enhancing student's creativity but also attracting student's attention. The benefits of mind mapping include providing the students with more attractive and enjoyable format for their eye and brain. In addition, Murley (2007) noted that it is easy to understand the "maps" drawn on mind-maps. This benefits the students as it saves time and increases productivity that distinguished learning styles in EFL classroom can also be accommodated. Mind -maps are especially helpful for strong visual learners who absorb information better when it is presented via diagrams and similar visual aids than through written text.

According to Tyson in Mustofa (2015: 194) teaching is a process of interaction, the teacher does something to a student; the student do something in return. From the definition a reflected that teaching is a way an active-bilateral process between students and teachers. Tardif as quoted by Mustofa (2015:195) teaching in principle is any action performed by an individual (the teacher) with the intention of facilitating learning in another individual (the learner)". It means the teaching is an act under taken by a teacher to help and facilities students in learning activities (process learning). Teaching speaking is when the teacher teaches the student to speaking English well. The teacher's preparation is very important in order to avoid misunderstanding between students and teacher because sometimes teacher's explanations are frequently not clear to their students. Teaching speaking is an essential part in language learning. According to Harmer (2007) there are three reason to teach speaking:

- a. Teaching speaking can provide opportunities for students to practice real life speaking classroom.
- b. Speaking task where the students try to use the language will provide feedback for both teacher and students. everyone can see how success they are and also what language problems they are experience.
- c. The more opportunities to speak, the more familiar the students to the components of speaking. They will frequently use these components when they are speaking. As a result, the students will able to speak fluently.

Previous Related Study

There are some previous studies that related to this research. The first is thesis entitled "*The Use of Mind Mapping Strategy to Improve Students' Speaking Ability*" (An Experimental Research with the first grade of MAS Darul Ihsan) by Asrifal Mirza (2016). The research design of the research was quasi-experimental with pre-existent group and did not pick the sample randomly. The writer took two classes as samples; control and experiment class and gave students the pre-test and post-test. The population of the research was the first-grade students of MAS Darul

Ihsan student and sample was I-A with 27 students as an experimental class and I-B with 23 students as a control class. Based on the result of students' score which post-test scores in experiment class was higher than post-test score in control class (mean of post-test experiment class was 69.05 while mean of post-test control; class was 57.11). In other words, using mind mapping as a strategy in teaching English speaking in this research was improve students' speaking ability.

The second is thesis entitled "*The Effectiveness of Applying Mind Mapping Strategy on Students Speaking Ability (The Quasi – Experimental Study To Six Grades Students In Cikande I Elementary School – Serang)*" by Ida Nuraida,MPd. (2017). The methodology of the research was quasi-experimental design with the equivalent control group design, in which the writer provided the pretest and post-test which are given to the experimental class and control class. The population of the research was all of six graders student and sample was VI B with 40 students as an experimental class and VI A with 40 students as a control class. The score in this research of the students' speaking skill in experimental class is higher than in control class, mean of post-test experiment class was 79,625 while mean of post-test control class was 74.875.

The last is thesis entitled "*The Effect of Using Mind Mapping Technique Towards Students' Speaking Skill At The Second Graders of SMPN 30 Muaro Jambi*" (An experimental research) by Riska Susilawati (2018). The research design used in this research was quasi-experimental by using non-equivalent group design with pre-test and post-test. The population of this research was 59 students and sample where 40 students of two classes were experimental class and control class in second graders of SMP N 30 Muaro Jambi. In this research, the result of post-test in experimental class was higher than in control class. The result of the data analysis showed that the mean score of post-test in experimental class and control class were 13.65 and 10.5. It can be concluded that the students have better achievement in their speaking skill by using mind mapping She said that mind mapping made students more active and creative in shared their ideas by speaking English.

METHOD

Design and Samples

The aim of the research is to know that mind mapping technique is effective or not in teaching speaking. Quantitative method is the method used in particular population and sample, by using research instrument in collecting data and analysing by statistical analysing. Cresswell (2008) noted quantitative research is a type of educational research in which the writer decides what to study; reviews these number analyses by using statistic; and conducts the inquiry in an unbiased, objective manner. The design of this research is experimental research design. According to Sugiyono (2006), experimental research is research which has the purpose to find the cause-effect relationship among variable in a controlled condition. Sugiyono (2006: 81) states that some types of experimental research design are pre-experimental design, true experimental design, factorial design and

quasi experimental design. The type of the experimental research design used in this research is pre-experimental design. Pre-experiments are the simplest form of research design. In a pre-experiment either a single group or multiple groups are observed subsequent to some treatment presumed to cause change.

Arikunto (2010) stated that sample is a limited number of elements from a population to representative of the population. There are two classes of the eight grades at SMP N 4 Sorong Regency. The researcher took class eight-B as experimental class. Therefore, the sample of this research was the students in eight-B that consist of ten students. Sampling is a process used in statistical analysis in which a predetermined number of observations are taken a large population. The methodology used to sample from a larger population depends on the type of analysis being performed. The researcher chooses purposive, according to Arikunto (2010:183), purposive sampling is the process of selecting sample by taking subject that is not based on the level or area, but it is taken based on the specific purpose. And in this research the researcher used purposive sampling with some criteria consist, the students of class eight-B had low score in speaking and the students from Papua was dominant that was fifteen of seventeen students.

Instrument and Procedure

The instrument needs to collect the data collection. Instrument of the research play an important role in research project. According to Sugiyono (2017) which is meant by research instruments are as follows: "The research instruments are used as data collection tools, and the instruments commonly used in research studies are a list of questionnaires submitted and given to each respondent being sampled in research at the time of observation. The researcher used an oral test as instrument to collect the data, the researcher has given the students twice tests, those were pre-test and post-test.

In this research the researcher collecting the data consist of: a) Test is an instrument or procedure designed to measure the student's ability. As stated on the research design, the researcher has given two kinds of tests: pre-test and post-test. The result of those tests has been compared to know whether the use mind mapping technique more effective or not in teaching speaking. The researcher has given the student pre-test and post-test. And adapted with the syllabus or material in the school (simple past tense). Pre-test was aim at measuring the students' ability in speaking and their achievement before they enter the experimental class. In pre-test, the researcher did interview with the students that consist of five questions about the things that happened in the past. The students have answered the questions used simple past tense orally. Post-test was aim to measure the effect of certain treatment on this research was teaching speaking use mind mapping technique. In post-test, the researcher did interview with the students that consist of five questions about the things that happened in the past. The students have answered the questions use simple past tense orally. b) Documentation was the second instrument of this research. The researcher needed the documentation that used digital camera to take record or video and picture while conducting the method as the evidence in this research.

Data Analysis

The researcher has collected data and processed the answer in problem research using SPSS application. The procedure processes the data as follow: Scoring of students' speaking According to Hughes (2003: 131) creates the assessment criteria for speaking test as follows:

Guideline assessment: Maximum score = 10

Student's score: $\frac{\text{Total score}}{\text{Maximum score}} \times 100$

Mean score is the average of the score. The score was collected by using the result of pre-test and post-test, Darmadi (2011). The researcher determines the mean score with the formula:

$$M = \frac{\sum X}{N}$$

Where:

M = Mean of students' score
 $\sum x$ = The Sum of students'sore
N = Total number of student's

Normality test aims to determine if the data is netted from each variable with normal distribution. This normality test uses the Kolmogorov - Smirnov method (test K-S). In testing this data use the Kolmogorov - Smirnov test as follows:

- a. Define the null hypothesis and the alternate hypothesis and the significance level.
H0 = Data population is not distribution normally
H1 = Data population is normal distribution
 $\alpha \Rightarrow 0,05$ (5%)
- b. Analysis of data using SPSS.
- c. Decision making (conclusion) on the output.

Decision-making of normality test results using Kolmogorov Smirnov (Test K-S) method is if the significance value > 0.05 can be concluded that the data is derived from the normal distribution population and if the significance of the value < 0.05 can be concluded that the data comes from a population that is not normal distribution.

Test N-Gain is conducted to determine the extent to which the students' learning outcomes between before and after learning. The difference between the initial test score and the final Test (gain) is seen from the treatment. According of Archambault (2008), the test formula of normality Gain as follows:

$$N\text{-Gain} = \frac{\text{Post-test Score} - \text{Pre-test Score}}{\text{Max Score} - \text{Pre-test Score}} \times 100$$

The result of the Gain score divided to three criterions:

Table 3.7.5 Gain Criterions

Presentation	Classification
N-gain >70	High
$30 \leq \text{N-gain} \leq 70$	Medium
N-gain < 30	Low

Source: Archambault 2008

RESULT AND DISUSSION

In this part, the researcher shows the students' score in pre-test and post-test by the table and has been calculated using SPSS.

Table 1. Students' Score of Pre-test and Post-test

No	Names	Pre-test	Categories	Post-test	Categories
1	AU	62,5	Enough	75	Good
2	AO	22,5	Less	52,5	Less
3	MN	45	Less	62,5	Enough
4	PM	40	Less	75	Good
5	IG	55	Less	77,5	Good
6	OP	47,5	Less	70	Enough
7	WA	52,5	Less	80	Good
8	SS	57,5	Enough	72,5	Good
9	KB	47,5	Less	75	Good
10	NS	27,5	Less	55	Less

Based on the table above, there are 10 students as samples of this research. There are 6 female and 4 male students. In the pre-test, there are 2 students who getting enough scores and 8 students are low scores. Therefore, in enough categories are 2 students and less categories are 8 students. Besides that, in post-test there are 6 students who getting good scores, 2 students are enough scores and 2 students are low scores. So that, the good categories are 6 students, enough categories are 2 students and low categories are 2 students. It shows that the scores are improving after given the treatment.

This analysis describes detail explanation of rate percentage of pre-test and post-test, mean score and standard deviation, and inferential analysis in pre-test and post-test.

Table 2. Rate Percentage Students Speaking Ability of Pre-test and Post-test in Experimental Group

Experimental Group						
No	Classification	Score	Pre-test		Post-test	
			F	P%	F	P%
1	Very Good	86-100	0	0	0	0
2	Good	71-85	0	0	6	60
3	Enough	56-70	2	20	2	20
4	Less	<55	8	80	2	20
Total			10	100	10	100

From the table shows that in post-test there are 6 (60%) students classified as good than in the pre-test there is no students classified as good. In pre-test there are 2 (20%) students classified as enough and 8 (80%) students classified as less. In post-test there are 6 (60%) students classified as good, 2 (20%) students classified as enough and 2 (20%) students classified as less. Therefore, after given the treatment the students' score in speaking ability is higher than previous.

Table 3. Mean Score and Standard Deviation

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test	45,75	10	12,750	4,032
	Post-test	69,50	10	9,560	3,023

The table shows that the mean score in pre-test is 45,75 with standard deviation is 12,750 while the mean score in post-test enhance to 69,50 with standard deviation 9,560. It indicates that the students' speaking improves significantly after given the treatment by using mind mapping technique in teaching speaking. From the data above, the student's rage percentage in post-test is higher than the rate percentage in pre-test.

The normality test is used to determine whether the data obtained from each variable is normally distributed or not. This normality test is done against pre-test scores and post-test. Because the amount of sample is 10 students and not more than 20 students, so to analysis the normality the researcher used Kolmogorov Smirnov method. The result of the normality test can be seen as follow:

Table 4. Test of Normality

Tests of Normality							
	Test types	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Score	Pre-test	,177	10	,200*	,933	10	,481
	Post-test	,223	10	,172	,858	10	,073

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The table above shows that the significance value in pre-test and post-test > 0.05 (alpha). The significance value in pre-test is 0.200 and in post-test is 0,172. It can be concluded that the data in pre-test and post-test is normal distribution. In the research one group pre-test and post-test design (experimental design) test N-gain score can be used when there is a significant difference between the value of pre-test and post-test mean. The result of the mean is 45.75, the mean result of post-test is 69.50 and the result of N-gain is 43,77. Therefore, the result of N- gain is medium. It means that the effectiveness to use mind mapping in teaching speaking in this research is medium.

$$\begin{aligned}
 \text{N- Gain} &= \frac{\text{Post-test Score} - \text{Pre-test Score}}{\text{Max Score} - \text{Pre-test Score}} \times 100 \\
 &= \frac{69.50 - 45.75}{100 - 45.75} \times 100 \\
 &= \frac{23,75}{54,25} \times 100 \\
 &= 43,77
 \end{aligned}$$

Normalized Gain Score results are divided into three categories, namely:

Table 5. Gain Criteria

Presentation	Classification
N-gain >70	High
30 ≤ N-gain ≤ 70	Medium
N-gain < 30	Low

Source: Archambault 2008

The discussion deals with argument and further interpretation of the research findings in speaking ability achievement both pre-test and post-test result of experimental class. In addition, there was the technique in this research namely mind mapping technique which was different of students' result in teaching speaking ability especially in simple past tense. Based on the findings above, the students' ability can be proven by analysing the post-test result. The result shows that the mean score of students' post-test is increased after giving the treatment. It can be seen through the mean score of students' pre-test which was 45.75 (less classification) becomes 69.50 (enough classification) in the post-test. Furthermore, the difference score can be seen from the mean score of pre-test and post-test. The students' achievement in speaking increased about 23.75. It can be stated that after treatment, there is a significant difference.

After analysing the result of post-test of the data analysis, the researcher found the data that P-value was lower than α ($0.000 < 0.05$). It can be seen the P-value (0.00) at the level of significance (0.05), the degree of freedom was (9). It indicates that the alternative hypothesis (H_1) is accepted and, of course, the null hypothesis (H_0) is rejected. The alternative hypothesis (H_1) is the use of mind mapping technique is effective in teaching speaking at eight-B grade of SMP N 4 Sorong Regency. And then, to find out how effective the mind mapping technique in teaching speaking, the researcher used N-gain. The result of N-gain is medium (43,77). It explained that the effectiveness of the H_1 in this research is medium. It shows that the use of mind mapping technique is quite effective in teaching speaking.

Based on the explanation previously, there are several points influencing the result of the post-test which higher than the pre-test. Firstly, mind mapping was a good technique to introduced new knowledge. In this research when the researcher used mind mapping to explain about simple past, the student be easily to understand the topic. It is similar with Goodnough and Long (2002) found mind mapping to be useful strategy for introducing new concepts, providing a whole – class focus for large research project, assessing learning of individuals and offering greater choice in how people chose to complete assignments and projects. Toi (2009) who claims that mind mapping can help children recall words more effectively that using lists, with improvements in memory of up to 32%. But in this research the mind mapping is not effective significantly to the students' recall.

In addition, the students more be interest in speaking because this technique made them more easily to improve and expressed their idea in branches in orally from the picture as main topic. Besides that, mind mapping welcomes more flexibility than outlining does, students' creativity is subsequently encouraged. It allows the students to be more creatively constructing the information in their mind as their prior knowledge to improve the main idea. These findings also supported by Asrifal Mirza (2016) and Riska Susilawati (2018) which stated that mind mapping as technique that helps students more active and creative in shared their ideas by speaking English.

CONCLUSION

After analysis the data and discussing the result, the researcher would like to draw conclusions follow:

- a. Applying mind mapping technique is effective in teaching speaking for the students' speaking ability for eight-B grade students as SMP N 4 Sorong Regency. Based on the result of students' score which post-test score was higher than pre-test (mean of post-test was 69.50 while mean of pre-test was 45.75). Also, the improvement of students' speaking ability was showed in *t-test* calculation where H_1 (mind mapping is effective in teaching speaking) is accepted.
- b. Generally, the students perceived that mind mapping assisted them to improve their speaking ability. Mind mapping help them to generate idea. Mind mapping used picture as the main topic helps the students to think better and to limit a topic

and makes them easier to develop idea. As the result, their speaking will be systematically.

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