THE EFFECT OF USING MIND MAP ON STUDENTS' SPEAKING ABILITY

A Paper

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CHAPTER I
INTRODUCTION

A. Background of the Study

Twenty-first-century students are required to master the ability to speak English. The problem that often arises in students is confusion about the content for speaking, lack of confidence, and fear of making mistakes (Candraloka & Rosdiana, 2019). The other study shows that students' have anxiety that affects speaking performance; they cannot deliver their ideas and opinion (Fitriani et al., 2015). To improve the quality of speaking ability, the material should develop a methodology learning to enhance the impression of learning (Mustajib, 2017).

According to the Educational Policy of Indonesia in the 2013 curriculum, Standar Isi (SI) is formulated to develop speaking (Kemendikbud, 2014). Students are required to develop English speaking ability. Mind Map is the method to prepare the content of an idea properly. Mind Map is a diagram used to represent words, thoughts, and ideas linked and grouped by keywords in the center. It would be helpful for students to develop their speaking ability (Husni & Zainuddin, 2018).

A recent study found that most students showed their best speaking and advanced speaking ability using Mind Map (Ramadhani, 2020). The fact also supported by (Hoa & Trang, 2020) that using Mind Map could reach students' expectations to boost their speaking ability. When using Mind Map, students have learned to memorize information, words, and images and generate new ideas (Orlova, 2017).

Based on a preliminary study conducted with a junior high school teacher, the researcher got information about students' difficulties in speaking. The teacher claims that students lack confidence. In prior research, teachers should create specific strategies to improve students' speaking abilities, particularly regarding idea generation

(Setiyawan, 2020). The teacher just utilized a book as a media to teach, making the learning process dull for the students. Therefore, students must be encouraged to learn to speak by utilizing an engaging technique (Riska, 2019). As a result, the teacher must adapt the teaching method and find a way for students to speak and express their ideas (Mirsa, 2016).

B. Reason for Choosing the Topic

The most common issues in students' speaking ability are lack of confidence. Students in the twenty-first century require speaking ability because it is essential for communicating. Students have frequently assessed their success in the English language on how well their speaking abilities are. However, students realized that speaking a foreign language takes a long time to develop.

The researcher sees that many students still have difficulty speaking. The challenge is a lack of confidence. The researcher considers Mind Map an exciting and helpful technique to develop and improve speaking. To help students improve their speaking ability, students can use a Mind Map.

Besides having problems with confidence, students have difficulty because they do not know what to speak. The primary use of a Mind Map is to create an association of ideas. It is generally easier to remember a diagram than to retain a description. A Mind Map can help the students to generate an idea for a speaking.

C. Statement of the Problem

Based on the background of the study, the researcher intends to analyze the effect of using a Mind Map to develop speaking ability. Therefore, the problem to investigate is "Does Mind Map affect students speaking ability?"

D. Aim of the Research

The researcher aims to investigate the effect of using a Mind Map to develop students

speaking ability.

E. Hypothesis

The hypothesis for this research is an alternative hypothesis (*Ha*). There is an effect of Mind Map on students' development speaking ability.

F. Limitation of the Problem

In this research, the Mind Map is proposed by Buzan. The steps used to develop ideas. Starting from the center of a blank sheet of paper with the long side placed horizontally. The Mind Map component in this study generates and organizes ideas for speaking. The limitation in speaking ability is self-introduction.

G. Operational Definitions

The researcher classifies the operational definitions used in this study as follows:

1. Mind Map

   The Mind Map is a technique that uses diagrams to represent ideas linked by centered keywords. It is used to organize information and make it easier to develop ideas. Mind Map in this research using Mind Map from Buzan. Participants were categorized by the experimental class using Mind Map and the control class using a Role Play.

2. Speaking Ability

   Speaking ability in this research is the ability to self introduce.

H. Research Significance

The findings of this research are expected to give a positive contribution for:

a. Teacher

   The result of this research can help teacher teach speaking. The teacher also does not need to explain much material when utilizing the Mind Map technique.

b. Students

This research can be used for students to develop their speaking ability. Using Mind Map method students can easily remember words by looking at the keywords.

c. Researcher

This research is the source of reference for other researchers conducting similar experimental research. Furthermore, they may adopt this research to different research focus.

CHAPTER II

THEORETICAL FOUNDATION

A. Speaking

1. Definition of Speaking

Speaking is one of the four language skills required for efficient communication, specifically when speakers are not speaking in their native language. Boonkit (2010) says, speaking is one of the four most essential ability in English, mainly whenever the speakers are not native English speakers. The ability is defined as utilizing language in real-life situations, narrating acts in exact terms, or communicating or conversing ideas effectively. Students of English as a Foreign Language (EFL) should enhance their speaking ability because English has become the primary language used to connect with people worldwide.

Speaking is a language skill defined as an interactive process of meaning construction that involves creating, receiving, and processing information. The knowledge is conveyed vocally and nonverbally in a variety of circumstances dependent on the presence of participants and their collective experiences, physical surroundings, and the speaking purpose (Chaney & Burk, 1998). Speaking is a complex ability that requires the simultaneous use of various distinct ability that often develop at varying speeds (Harris, 1969).

According to Torky (2006), speaking is described as creating auditory signals to elicit distinct verbal replies in a listener. It is defined as the systematic combination of sounds according to language-specific principles to produce meaningful utterances. Riska (2019) stated that speaking is the practice of

delivering information orally, clearly, fluently, and correctly as part of an engagement to accomplish something, negotiate, solve a specific problem, and build social ties and friendships.

2. The Difficulties of Speaking

Candraloka & Rosdiana (2019) stated that difficulties in mastering speaking are frequently caused by students' lack of confidence and perception that they cannot speak English. Students with a nonproductive view lack confidence and confront themselves because they are not competent in some subjects. It is essential to provide students with as many opportunities to communicate in a supportive environment. Students will speak more freely as they gain confidence. Fitriani et al. (2015) stated that foreign language learners frequently feel frustrated by their inability to engage in speaking activities.

Students experience several emotions that impair their English speaking, including insecurity, shyness, anxiety, nervousness, and concern. If students do not believe they can speak, it becomes a significant issue. Several students assert that they have many ideas in their heads but have none when speaking. Furthermore, others claim to feel insecure about their grammar, fear of being criticized, lack of vocabulary, apprehension, worry, and anxiety.

The difficulties encountered by students are generating ideas. They struggle to produce ideas while speaking English. For instance, they may be confused when the teacher asks them to speak in front of the class. Students either did not know how to respond to it or had an idea but did not communicate it.

3. Components of Speaking

According to (Harmer, 2007) there are five components of speaking ability:

a. Grammar

Grammar is the study of how a language's phrases are produced. Grammar is described as a systematic method of accounting for and forecasting an ideal speaker's language understanding. It is accomplished by applying a set of rules or principles that may be utilized to create all well-formed or grammatical utterances in the language (Purpura, 2004).

b. Vocabulary

Vocabulary is a list or collection of words or phrases, generally categorized alphabetically and explained or described. Vocabulary is the entire words used by an individual or the total number of words in a specific language or topic. The English language is defined by its vocabulary. Without a proper vocabulary, students cannot communicate with others or convey their thoughts (Lessard-Clouston, 2013).

c. Comprehension

Comprehension is the ability to grasp the meaning or significance of something and the information gained. Comprehension refers to the fact that participants fully understand the nature of the research project, even when procedures are complicated and entail risks (Cohen et al., 2002).

d. Fluency

Fluency is the ability to communicate effectively, clearly, and rapidly in a foreign language. Fluency in speaking is the ability to produce utterance or oral production which can be understood either the listener or the speaker himself (Haryanto, 2016).

e. Pronunciation

Pronunciation is the act or outcome of generating speech sounds, including articulation, stress, and intonation, often following some standard of accuracy or

acceptability. It focuses on the phonological process, a component of grammar that consists of the parts and principles of how sounds change and pattern in a language. Pronunciation is critical to facilitating communication (Azlina et al., 2015).

4. Teaching Speaking

Teaching speaking entails instructing an individual on how to interact with others. According to Lackman (2010), teaching speaking involves activities that encourage students to focus on meaning in communication; students must be able to utilize and pronounce words and structures to be understood appropriately.

Furthermore, Palmer (2011) stated that effective teaching speaking represents a collection of multiple components and that a new way of thinking about oral communication will make teaching the ability required and make it easier for students to become component communicators. Teaching speaking is an essential factor in language acquisition. Anderson & Nunan (2003) mention five principles for teaching speaking. The principles are:

a. Be aware of the differences between second language and foreign language learning contexts. It shows that the teacher faces difficulties in determining the target language environment.

b. Give students practice with both fluency and accuracy. The amount to which students' speech reflects what individuals say while using target language is accurate. Fluency refers to how swiftly and confidently speakers utilize the language, with minimal hesitations or forced pauses, false starts, or word searches.

c. Provide opportunities for students to talk by using group work or pair work and limiting teacher talk. Pair work and group work activities can be used to increase

the amount of time that learners get to speak in the target language during the lesson.

d. Plan speaking tasks that involve negotiation for meaning. It indicates that students advance by speaking in the target language since engagement entails attempting to comprehend and be understood.

e. Design classroom activities that involve guidance and practice in transactional and interactional speaking. Interactional speech is when someone communicates with someone for social reasons. It entails both the formation and maintenance of social ties. Transactional speech is used to communicate to complete a task, such as exchanging products and services.

B. Mind Map

1. Definition of Mind Map

Husni & Zainuddin (2018) said that Mind Map is note-taking distinct from conventional or standard note-taking. A Mind Map is a strategy for capturing information to be examined or projecting difficulties encountered in the shape of a map or visual approaches to make them more understandable. Michalko (2011) said that Mind Map are non-linear thinking that utilizes the whole brain. The Mind Map extends in all directions and records ideas from all perspectives.

According to Buzan (2006), a Mind Map is the easiest way to put information into the brain and take out the information. Mind Map are a unique and powerful method of taking notes that physically map out ideas. The more often Mind Map is used, the simpler it is to activate both sides of the brain. Mind Map aid in the strengthening of the brain's mental map. It is easiest to conceive a Mind Map as an externalization of internal thoughts: creating, repeating, and validating the Mind Map. Because the Mind Map structure reflects the form of thinking

processes, explaining it is a natural repetition and is easily remembered.

2. Characteristics of Mind Map

According to Buzan (2006), Mind Map have some characteristics. All of them possess a natural structure that radiates from the center. In addition, Mind Map employs curved lines, symbols, phrases, and images with simple, essential, natural, and brain-friendly rules. Using a Mind Map can transform a long list of uninteresting facts into a colorful, highly structured, and memorable graphic that aligns with the brain's natural manner of processing information.

3. Technique of Constructing Mind Map

The following processes will demonstrate how to create a paper-pen Mind Map:

a. Starting at the center of a page flipped on its side. The beginning at the center allows the brain to expand in all directions and express itself more effortlessly and freely.

b. Using a picture or image as the central theme. A central picture is more engaging, maintains attention, facilitates concentration, and stimulates the mind more.

c. Using color to stimulate the brain as visuals. The addition of color to a Mind Map enhances its vitality and adds incredible energy to creative thinking.

d. Connect the primary branch to the central image. Connecting the branches facilitates comprehension and memory retention considerably.

e. Making the branches curved instead of straight. Having only straight lines is monotonous to the mind. Curved, organic branches, such as tree branches, are more appealing and captivating to the eye.

f. Utilizing a single keyword in each line. Single keywords enhance the effectiveness and adaptability of the Mind Map. Using a single keyword is

better equipped to generate new ideas and concepts.

g. Incorporating images. Even if there are just ten pictures in a Mind Map, it is equivalent to 10,000 words of notes.

C. Related Research

The researcher has conducted some previous findings to support the research. There are some related researches of this research. The first related research is conducted by Mirsa (2016) concluded that applying Mind Map method may help students enhance their speaking abilities in the first grade at MAS Darul Ihsan. According to the results, the experiment class's post-test scores were higher than the control class's post-test scores (the mean of the post-test experiment class was 69.05 while the mean of the post-test control class was 57.11). Additionally, the increase in students' speaking abilities was shown in this research. In other words, employing Mind Map to teach English speaking will help students enhance their speaking abilities.

The study's findings by Mustajib (2017) indicated statistically significant improvements in students' speaking ability. The treatment activities stimulated students' interest in speaking courses and improved oral communication in the classroom, which was the treatment's objective. This research demonstrated that it is worthwhile to continue experimenting with Mind Map in classrooms and maximize the significance of activities in students' better motivation in classroom language acquisition.

According to Ferry (2017), the result of the study shows that the students get improvement in speaking. It could be seen from the difference in the students' scores on the pre-test and post-test. More than 50% of the students get stagnation in the pre-test, and in the post-test 78% of the students' could finish their speaking activity. Furthermore, they can give a response to the question given.

In addition, the similarities between the previous research with this research are the use of Mind Map. The difference between the previous research is in the

methodology of the research. This research uses quasi-experimental. And then, the difference is in the topic. The researcher uses self-introduction material.

CHAPTER III

RESEARCH METHODOLOGY

A. Research Method and Design

This research conducted quantitatively. The design used in this research was a quasi-experimental with a nonequivalent control group design. The quasi-experimental research shows the difference between the two groups in speaking abilities. The researcher divided the sample into two groups: the experimental and control groups. The experimental group is the group given treatment by the researcher using a Mind Map, and the control group is the group given treatment by the researcher using Role Play. Both groups will be tested after treatment to see the difference in speaking ability.

A1	➡	X_A	➡	A2

B1	➡	X_B	➡	B2
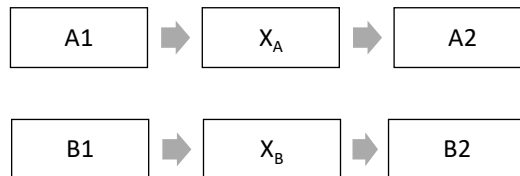
Description

A1 = pre-test experimental group
B1 = pre-test control group
X_A = treatment in experimental group (Mind Map)
X_B = treatment in control group (Role Play)
A2 = post test in experimental group
B2 = post test in control group

B. Population and Sample

This research conducted at SMP Negeri 3 Ciawi. Based on a preliminary study with the teacher, the researcher got information about students' difficulties in speaking ability. The teacher claims that students lack confidence. The research population is first grade students as many as 200 students. In this research, the sampling technique used a simple random sampling technique. The researcher conducted a lottery from the entire population to determine the classes to use as the sample as many as 60 students. To determine the classes that used as the sample, the researcher draws a lottery from the entire population as follows:

1. From five (5) classes, two (2) classes were taken randomly to be sampled.

2. The two (2) classes selected as samples will be drawn again to determine which class will be the experimental and control groups.

3. Then draw again which class will be the experimental and control groups. If the draw is the first exit means to be the experimental group, and if the second exit means to be the control group.

4. The criteria for the participants in this research were students who followed the process during the pre-test, treatment, and post-test.

C. Data Collection Technique

To collect the data, the research steps following:

1. Pre-test

   The pre-test given to experimental and control groups in the first meeting. The researcher asked students to come forward to speak and introduce themselves. The pre-test is given by the researcher in order to determine or measure of students' speaking ability before given treatment.

2. Treatment

   To ensure that students comprehend about self introduction material, the researcher used Mind Map as the treatment to the experimental group. Meanwhile in control group used Role Play as the treatment.

3. Post-test

   The researcher given the post-test in the last meeting. The post-test was given to both groups. The researcher asked students to come forward to speak and introduce themselves. It aims to determine the level of students' understanding of the self introduction material and how much influence the learning method has on students.

D. Research Instrument

   Research instruments are tools or facilities used by the researchers to collect data. The instrument used in the post-test is the oral proficiency scoring category adopted and adapted from Luoma as cited in Fauzziyah

(2021). It consists of five points scoring and four aspects to measure speaking ability, including pronunciation, grammar, vocabulary, and fluency.

E. Data Analysis

The data analysis used in this research are:

1. Calculating t-test

$$t = \frac{\overline{X}_A - \overline{X}_B}{SD_{combined}\sqrt{\left(\frac{1}{n_A} + \frac{1}{n_B}\right)}}$$

Description

$\overline{X}_A$ = mean of experimental group

$\overline{X}_B$ = mean of control group

n_A = number of sample experimental group

n_B = number of sample control group

$$SD_{combined} = \sqrt{\frac{(n_A - 1)s^2{}_A + (n_B - 1)s^2{}_B}{n_A + n_B - 2}}$$

Description

$SD_{combined}$ = standard deviation of AB

n_A = number of sample experimental group

n_B = number of sample control group

$s^2{}_A$ = experimental group variant

$s^2{}_B$ = control group variant

2. Calculating N-gain

The Hake's formula can be seen below:

$$N - Gain = \frac{Posttest\ score - Pretest\ score}{Score\ ideal - Pretest\ score}$$

Table 3. 1. N-Gain % Interpretation

Percentage (%)	Interpretation
< 40	Ineffective
41 – 55	Less effective
56 – 75	Effective enough
> 76	Effective

CHAPTER IV

RESEARCH FINDING AND DISCUSSION

A. Research Finding

This research aims to investigate the effect of using a Mind Map to develop students speaking ability. Conducted to the first-grade students of SMP Negeri 3 Ciawi, the research was started on June 28th, 2022 and ended on July 1st, 2022. In collecting the data, the researcher gave a pre-test, treatment, and post-test. The speaking test was given before the treatment as the pre-test, and then the students got treatment using Mind Map in the experimental group and Role Play in the control group. Furthermore, the researcher gave a speaking test as the post-test.

The data collection steps can be seen below:

Table 4.1 Data Collection Steps

Activity
Pre-Test
Checking out the students' speaking ability before treatment on both groups
Treatment
Improving the students' speaking ability by using Mind Map on the Experimental Group and Role Play on the Control Group
Post-Test
Checking out the students' speaking ability after treatment on both groups

1. Participants Characteristic

Participants in this research consist of 60 students. The participants were divided into two groups, experimental and control groups. The experimental group had consist 30 students, and the control group consist 30 students. The participants consist of 53.30% male students and 46.70% female students.

The distribution of participant can be seen in table 4.2 below:

Table 4. 2. Distribution of Participants by Groups

Groups	Frequency	Percent
Experimental	30	50
Control	30	50
Sex		
Male	32	53.30
Female	28	46.70

2. Speaking Ability Before Treatment

As table 4.3 shows, mean pre-test scores for the experimental and control groups are respectively 38.92 and 40.25. The descriptive statistics of pre-test can be seen in table 4.3 below:

Table 4. 3. Descriptive Statistics of Pre-test Score

Groups	Frequency	Minimum	Maximum	Mean	Std. Deviation
Experimental	30	20.00	57.50	38.92	8.11
Control	30	22.50	65.00	40.25	7.89

The independent samples of t-test showed no statistically significant difference between the two groups which means that the two groups are equivalent before the treatment. The t-test result of pre-test can be seen in table 4.4 below:

Table 4. 4. Independent Samples of t-test Results of Pre-test

Levene's test Sig.	Mean differences	Sig.	t	df	95% Confidence Interval Lower	Upper
0.544	-1.16	0.575	0.565	58	-5.30	2.96

3. Speaking Ability After Treatment

To investigate the effect of Mind Map on students' speaking ability. Firstly, the researcher examined the difference between the two groups in the post-test. The mean of the experimental group is 76.83, while the control group is 45.33. The t-test result of pre-test can be seen in table 4.5

Table 4. 5. Descriptive Statistics of Post-test Score

Groups	Frequency	Minimum	Maximum	Mean	Std. Deviation
Experimental	30	60	95	76.83	9.14
Control	30	30	80	45.33	12.13

The independent samples t-test shows a statistically significant difference between the experimental and control groups (t=11.354, p <0.001). In other words, it can be said that using Mind Map in speaking ability is more effective than using Role Play. The result of t-test can be seen in table 4.6 below:

Table 4. 6. Independent Samples t-test of Post-test Score

Levene's test	Mean differences	Sig.	t	df	95% Confidence Interval	
Sig.					Lower	Upper
0.434	31.50	< 0.001	11.354	58	25.94	37.05

4. N-Gain Test

The category of obtaining N-Gain score can be determined through the N-gain value in the form of percent (%). Based on table 4.7, the N-gain test of the experimental group is 62.7%. The N-gain score for experimental group means effective enough. The N-gain test is a technical analysis to determine the level of increase in learning outcomes. The N-Gain test result can be seen in table 4.7 below:

Table 4. 7. N-Gain Test Results

Groups	N-Gain %	Interpretation
Experimental	62.7	Effective enough
Control	9.2	Ineffective

B. Discussion

In conducting this research, the speaking test was given to the students twice: before treatment (pre-test) and after treatment (post-test). The treatment was given three times to the students using Mind Map in the experimental group and Role Play in the control group. After applying the treatment, a post-test was given to the students to know the effect of Mind Map on students speaking ability.

In the pre-test, the topic given was self-introduction. The researcher asked the students to introduce themselves individually in front of the class. In giving the treatment, there were three steps done by the researcher. At the first treatment in the control group, the researcher explain the self introduction. The second treatment the researcher explains the material about self-introduction with the role-play method. The third treatment the researcher asked students to make a dialogue.

The first treatment in the experimental group the researcher explains about Mind Map method. The second treatment, the material is about self-introduction with Mind Map method. After having conducted the third treatment, the researcher asked the students to make their self introduction with Mind Map.

The last meeting of the research was about distributing post-test of both groups. The post-test topic in the control group was self-introduction with the Role Play method. The researcher asked the students to construct a dialogue in pairs about self-introduction. After that, the students speak in front of the class.

The post-test topic in the experimental group was self-introduction with the Mind Map method. The researcher asked the students to make a Mind Map about self-introduction consisting of name, age, home address, hobbies, favorite color, and favorite food. After that, the students introduced themselves in front of the class with the Mind Map they had already made.

According to the data analysis findings, the Mind Map method increases students speaking abilities. It is shown from the data in the post-test that the mean score of students in the experimental group is 76.83, whereas the mean score of students in the control group is 45.33. It indicates that the Mind Map method improves students' speaking abilities. It is in line with the previous study by Mirza (2016) that using Mind Map improved students' speaking ability. More findings by Ferry (2017) found that the students get improvement in speaking ability. It could be seen from the difference in the students' scores on the pre-test and post-test.

The researcher found that using a Mind Map was effective for students speaking ability. It can be seen that the independent samples t-test shows a statistically significant difference between the experimental and control groups (t=11.354, p <0.001). **Based on the N-gain test in the experimental group is 62.7%.** In other words, using Mind Map in speaking ability is more effective than using Role Play. This finding was in line with Mustajib (2017) that using a Mind Map in teaching speaking influences students' speaking abilities. Students taught with a Mind Map have better speaking skills than those taught using guided questions.

The researcher successfully collected the data to address this study's research questions and hypotheses. Based on the results of the data analysis stated above, the aim of the research determining whether the Mind Map affects the speaking ability of first-grade students at SMP Negeri 1 Ciawi.

CHAPTER V

CONCLUSION AND SUGGESTION

A. Conclusion

These conclusions are based on the study findings and discussions discussed in the previous chapters. This research supports previous theories about the use of the Mind Map to improve students' speaking ability. In previous studies, it was found that the use of Mind Map affects students' speaking ability.

In conclusion, there is a difference in students' speaking ability. The experimental group taught using Mind Map, and the control group taught using Role Play. It is found that the mean of the students' speaking ability using Mind Map is higher than the mean of the students' speaking ability using Role Play.

This research was conducted to answer the question on whether using Mind Map affects students speaking ability. From the calculation, it is concluded that the Mind Map affects students speaking ability. Therefore, the researcher found that there is an effect of Mind Map on students' speaking ability.

B. Suggestion

The suggestions are extended to teachers and other researchers who are interested in conducting research about Mind Map for speaking ability. Based on the findings of this research, the researcher would like to provide some suggestions.

As a result of this research, the teacher had difficulty developing method for teaching speaking. The teacher is supposed to develop a teaching method that engages and encourages students to improve their speaking abilities. Therefore, it is recommended that teachers use the Mind Map method in the teaching and learning process.

This research has limited time for collecting the data. So, other researchers should have better preparation before giving the treatment. Furthermore, the researcher expects that the other researchers are interested in doing this research can examine this approach for different abilities.