

**IMPROVING STUDENTS' READING COMPREHENSION ABILITY IN
NARRATIVE TEXT THROUGH MIRO MIND MAPPING APPLICATION**

A Script

By

Yasmin Shafira Adani



**FACULTY OF TEACHER TRAINING AND EDUCATION
LAMPUNG UNIVERSITY
BANDAR LAMPUNG
2022**

ABSTRACT

IMPROVING STUDENTS' READING COMPREHENSION ABILITY IN NARRATIVE TEXT THROUGH MIRO MIND MAPPING APPLICATION

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The objectives of this research were to find out whether there was a significant difference of the students' reading comprehension after being taught through Miro mind mapping application and what aspect of reading which has the highest increase after implementing Miro Mind Mapping Application. This research was quantitative which used a pre-test and post-test experimental design. The research involved first grade students at SMA Negeri 2 Bandar Lampung, with a total at 17 female students and 12 male students. A pre-test and post-test were administered to collect the data. The data were analyzed by using Paired Sample T-Test in SPSS version 22.0. in which the significance was determined by t-value must be lower than 0.05. This research showed the significance, that t-value was lower than 0.05 ($0.000 < 0.05$). It indicated that there was a significant difference of the students' reading achievement in reading narrative text.

Keywords: *Reading Comprehension, Aspects of Reading, Mind Mapping Technique, Miro Mind Map*

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Submitted in a Partial Fulfillment of
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In

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The Faculty of Teacher and Education



**FACULTY OF TEACHER TRAINING AND EDUCATION
LAMPUNG UNIVERSITY
BANDAR LAMPUNG
2022**

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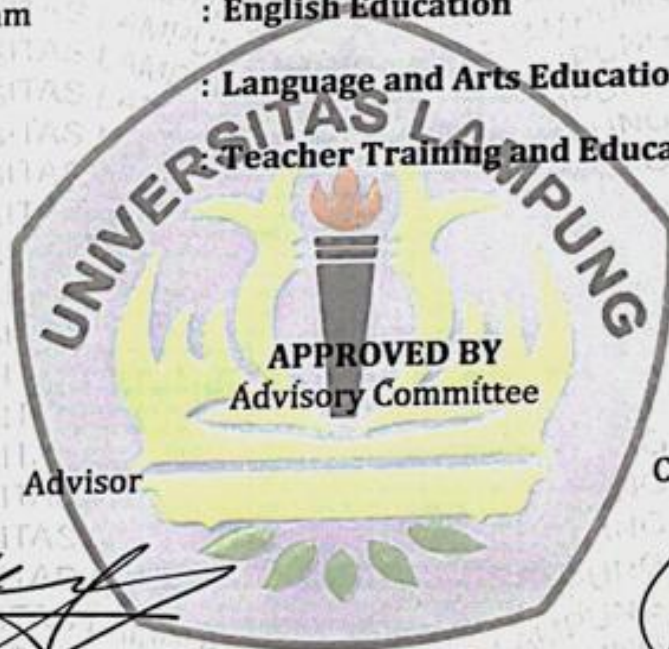
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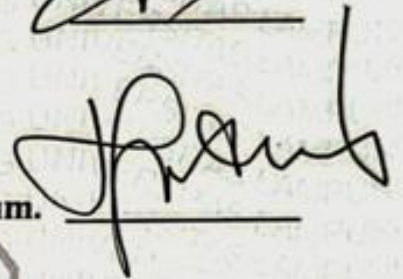
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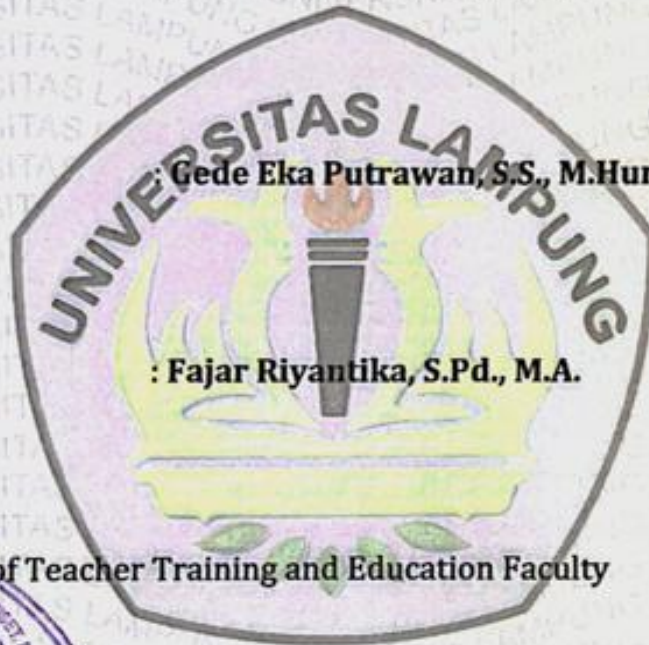
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Menyatakan bahwa skripsi ini adalah karya saya sendiri. Sepanjang pengetahuan saya, karya ini tidak berisi materi yang ditulis orang lain, kecuali bagian-bagian tertentu yang saya ambil sebagai acuan. Apabila ternyata terbukti bahwa pernyataan ini tidak benar, sepenuhnya menjadi tanggung jawab saya

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CURRICULUM VITAE

The writer's name is Yasmin Shafira Adani. She was born in Bandar Lampung, on November 18th 1999. She is the second child of a lovely couple, Maharta Syafrin Nur, S.E., and Ratna Wilis, S.H. She has two sisters namely Ulfah Shadrina Adani and Alyaa Rizqi Adani.

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DEDICATIONS

This script is fully dedicated to:

My beloved parents

My beloved siblings

My beloved lecturers at the English Department

My beloved comrades of English Department batch 2018

My beloved almamater, University of Lampung

MOTTO

فَإِنَّ مَعَ الْعُسْرِ يُسْرًا (٥)

(Q.S. Al-Insyirah 94:5) “Sesungguhnya sesudah kesulitan itu ada kemudahan”

“There is no joy for the one who does not bear sadness, there is no sweetness for the one who does not have patience, there is no delight for the one who does not suffer, and there is no relaxation for the one who does not endure fatigue”

-Ibn Al Qayyim al-Jawziyyah

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Praise is only for Allah SWT, the Almighty God, for blessing the writer with health to finish the script. This script, entitled “Improving Students’ Reading Comprehension Ability in Narrative Text through Miro Mind Mapping Application” is presented to the Language and Arts Education Department at the Teacher Training and Education Faculty, University of Lampung as partial fulfillment of the requirements for S-1 degree in English Department.

It is important to be known that the script would never have come into existence without any supports, encouragements, and assistances by several generous people. The writer would like to take this opportunity to address her sincere gratitude and deep respect to:

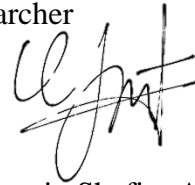
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13. Last but not least, I want to thank me, I want to thank me for believing in me, I want to thank me for doing all this hard work, I want to thank me for having no days off, I want to thank me for... for never quitting, I want to thank me for always being a giver and try to give more than I receive, I want to thank me for try to do more right than wrong, I want to thank me for just being me at all times

The researcher hopes that this research would be a positive contribution to the education development, the readers, and the other researchers.

Bandar Lampung, June 30th 2022

The Researcher

A handwritten signature in black ink, appearing to read 'Yasmin Shafira Adani', written in a cursive style.

Yasmin Shafira Adani

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I. INTRODUCTION

This chapter contains a brief explanation of the introduction. It consists of the background of the research, formulation of the research problem, objectives of the research, uses of the research, scope of the research, and definition of the terms.

1.1. Background

Reading is one of the most important skills that needs to be comprehended well. According to Harmer (2007), reading is useful for language acquisition. The use of reading as an important skill is not only enriching the knowledge, but also helping the students to understand the content of the written text. Grellet (1981) states that reading is a constant process of guessing, and what one brings to the next is often more important than what one finds in it. In reading, the students should be taught to use their background knowledge to understand the elements. It means that reading is the ability to interact by understanding the idea and interpreting the text.

The process of reading does need a comprehension. When the reader does not comprehend the information in the text, the reading skill is totally meaningless. Since reading is one of the skills that help students to master English. Reading needs comprehension to understand the content, idea, and information in reading. According to Armbruster (2000) comprehension is the reason for reading. It means that if readers can read the words but do not understand what they are reading, they are not really reading.

The comprehension does really occur when the reader understands fully information and idea written in the text. There will be no reading when there is no comprehension. Nuttall (1982) states that the purpose of reading comprehension is a part of the process of reading comprehension, that is characterized by the process when the readers get the messages and meaning of the text they have read. Furthermore, the message or the meaning conveyed can be in the forms of information, knowledge, and even happy or sad expression messages.

According to the basic competence in the Senior High School curriculum, the students are expected to be able to write some kind of text such as descriptive, narrative, recount or greeting cards. Narrative text is the most common text that we found in Senior High School's English book, so they are expected that they can make a good narrative text with a good content and coherence. Narrative text is a text, which tells a story using a series of events (NSW Department of Education and Communities, 2011). Based on the theory, it can be assumed that narrative text can be interesting and easy to study since its purpose is to entertain readers.

The problems faced by the students and the teacher are caused by some factors that may come from the students, the teacher, media, or technique used in teaching learning process. Ningsih & Rosa (2019) find some problems faced by students in reading a narrative text in her research. In some facts, the students find some difficulties in understanding a reading narrative text when they are asked to read. There are some problems that cause difficulties to students in reading a narrative text. First, the lack of vocabulary in English becomes one of the problems why students find it difficult to understand what they read. Students, which have enough vocabulary in English, will feel that reading a narrative text is fun and enjoyable for them. Second, the students cannot find the main ideas or keyword of the text automatically and they cannot get the meaning of the text and bring the ideas from the text into their own word. If the students can find the main ideas or keyword of the text correctly based on the text they read, it will help the students get information and comprehend the text. Winanda (2015) states that students had difficulties in getting information from the text, in this case, it is narrative text. In fact, most of students also think twice before they start to read a text comprehensively, whereas reading is a long process. It can be seen that when they are prefer to answer the questions of the test quickly rather than read and comprehend the text deeply. As a result, it will lead students to have bad achievement in reading.

In order to improve the students' ability in learning reading especially in reading narrative text, the researcher tried to find interesting and effective way for the students and teachers so that they can do their reading activity well. One of techniques, Mind mapping, was used in this research. By using this technique, the

students are able to communicate information because it can be clarify complex concepts into simple, meaningful display so that the students develop holistic understanding of the content to be learned. In this case, mind mapping technique can help students increase their competence in comprehending a written text. Buzan (2005) states that with mind mapping technique, a long list of a text can be turned into a colorful, highly organized, memorable diagram that can work in line with students' brain in natural way of doing things related to reading activity.

Nowadays the Covid-19 Outbreak is forcing the students to study online. Even though an offline learning system has been implemented, only half of all students can learn directly at school, and half of them still have to do an online learning. In this case, the researcher will involve a technology to support the use of strategy, which is mind mapping. Duffy and Bruns (2006) state that the rapid development of digital technologies and their use in education enable individuals to interact within the academic domain in new ecologies of learning. This is also in line with the government program in the 2013 Curriculum, which states the importance of the involvement of technology in every subject. The term technology here refers to the teaching of reading through a mind mapping which will be supported by using the technology such as laptop/computer and internet connection such as wifi or modulator demodulator (modem).

Students' reading comprehension achievement can improve well through online mind mapping. It can be proven by previous study which is about digital mind mapping can attract students' interest in learning reading comprehension conducted by Ningtyas (2012). In addition, it also can create pleasurable atmosphere in teaching and learning process. It clearly shows that by using online mind mapping, students are not just learning reading but also they will develop their creativity and sharpen their critical thinking. Moreover, by involving the technology in learning reading, the students also will increase their interests in reading and engage it as the concept by making the mind mapping. By using online mind mapping, students have an opportunity to develop communication competence orally or in written form contextually as suggested by Curriculum of English Senior High School (2013) and Badan Standar Nasional.

This online mind mapping has several advantages such as encourage students' creativity. The students can make mind map templates without using paper, pencils, and markers. In addition, the students can collaborate with other students online through online mind mapping. The researcher will use an online web mind mapping application called "Miro Mind Map". Miro mind map is an inclusive all-in-one mind mapping, whiteboard, and collaboration online application. Because this research is intended for students, the researcher is looking for an application that is very suitable and user friendly for the students. Not only because of its many features but also because it does not have to cost much. Miro Mind Map is chosen because this online application has free features that other online applications do not have. The researcher needs a collaborative feature in this research so that students can practice making mind maps together in one online board. In Miro Mind Map, all students can collaborate for free easily, meanwhile in other applications there are such feature but they are not free to use.

Therefore, based on the background of the problem above, the researcher will conduct a research above implementation of mind mapping as teaching technique to improve students' reading ability by using Miro mind mapping application. The researcher expected that by training the students to use mind mapping techniques and using Miro mind mapping applications to facilitate students in the learning process, students can provide quicker and comprehensive ideas for their better conceptual understanding in reading. In addition, if the learning process in the future will run offline, this application can still be used because this application is suitable for blended learning. Therefore, based on the statement, the researcher will conduct a research about the implementation of mind mapping as teaching technique to improve the students' ability in reading comprehension in narrative text by using online mind mapping application entitled "Improving Students' Reading Comprehension Ability in Narrative Text through Miro Mind Mapping Application"

1.2. Research Question

Dealing with the issues presented in the background, the research questions of this research are:

1. Is there any significant improvement of students' reading comprehension of narrative text after applying mind mapping technique by using Miro Mind Map application?
2. Which aspect of reading comprehension has the highest increase after applying mind mapping technique by using Miro Mind Map application?

1.3. Objectives

Based on the research questions above, the researcher formulates the objectives as follows:

1. To find out whether there is significant improvement of students' reading comprehension of narrative text after applying mind mapping technique by using Miro Mind Map application.
2. To find out which aspect of reading comprehension of the students has the highest increase after applying mind mapping technique by using Miro Mind Map application.

1.4. Uses of the Research

The uses of research are as follows:

1. Theoretically, hopefully the results of this research will provide a contribution to the teachers and curriculum developers about the quality of online mind mapping technique in reading comprehension ability especially in reading narrative text and also can support the previous studies.
2. Practically, the uses of this research are:
 - a. To be made as a consideration for English teachers to apply online mind mapping technique in teaching reading comprehension in their classroom.
 - b. To encourage students' awareness in identifying the specific information in

various types of reading texts through online mind mapping technique.

- c. To motivate the students in understanding narrative text using online mind-mapping technique.

1.5. Scope of the Research

This research is quantitative research dealing with the use of online mind mapping technique in understanding reading comprehension ability. As can be noticed that reading is also crucial in the curriculum of senior high school for the first grade, there are many kinds of text that the students should achieve such as descriptive, recount, narrative, hortatory exposition, etc. However, this research is limited to narrative text based on the syllabus of the first grade of senior high school.

This research will be focused on mind mapping technique by using Miro Mind Map application to determine the skill of the students in reading comprehension ability by using questions about narrative text. This study mainly focused on five aspects of reading, such as finding main idea, specific information or supporting detail, reference, inference and understanding vocabulary of difficult words.

1.6. Definition of Terms

The researcher uses some terms. Moreover, to make it clear, the researcher gives the definitions as follows:

1. Reading comprehension

It refers to an activity of thinking process in which a reader simultaneously extracts and constructs meaning thought interaction and involvement with written language to get meaning or idea of the texts.

2. Technique

It refers to a specific activity manifested in the class that is consistent with the method in harmony with an approach as well.

3. Narrative

It refers to an account of a series of related events, experiences, or the like, whether true (episode, vignette, travelogue, memoir, autobiography, biography) or factious.

4. Mind mapping

It refers to a technique of making outline which represents words, ideas, tasks, or another linked of the text to arrange radically around a central keyword or idea by lines and typically it contains words, idea, short or picture related together.

5. Online Mind mapping

Online mind mapping is mind mapping that can be accessed just through online. People should connect to the internet in making this mind mapping. People do not need a pen and paper anymore when they want to make mind mapping. In this online mind mapping they just need to visit the website and create the mind mapping.

6. Miro Mind Map Application

Miro Mind Map application is an inclusive all-in-one mind mapping, whiteboard, and collaboration online application. This application is a collaborative platform which all of the students in one class can do a collaborative mind map work in one media.

7. Ability

Ability is the level of someone in skill or the capability of skill. In this research is the level of students' reading skill or the students' ability in reading shown by score in pre-test and post-test.

Those are all about background, formulation of the problems, objectives uses, scope, and definition of terms that are used in this research. The researcher thinks that this chapter still has many weaknesses. It is because restrictiveness of knowledge and references that related to the topic of this research.

II. LITERATURE REVIEW

Theoretical framework is presented in order to give some clearer concept being applied in this study that is the students' reading comprehension through mind mapping technique. To support the ideas of this research, some theories and some information will be included to help the researcher designs this research. In this chapter, the researcher describes concept of theories, and this chapter also describes a related research on the teaching reading comprehension through mind mapping. The descriptions of theories written here are not as hypotheses, but as principles to understand concepts used in this research.

2.1. Review of Previous Researches

Reading ability is very important because it is closely related to a person's linguistic ability, which makes reading is very important, especially in language learning process. Participating in reading comprehension requires appropriate skills or strategies. Therefore, many studies mainly discuss how to improve reading comprehension about the concept of language teaching. Mind mapping is a technique in teaching reading comprehension. Previous studies on the use of mind maps have shown that mind maps are effective in learning process.

Cahyani (2015) this study is to perceive the improvement of students' reading comprehension through mind mapping technique. The result shows that mind mapping can be used effectively as reading teaching technique. There are some improvements of the students' reading comprehension and the class situation in the seventh year students of SMP Negeri 3 Colomadu by using mind mapping technique. The the students' reading comprehension improvement is shown by the increase of mean scores of pre-test and post-tests, compared to the mean score of pre-test which is 57.99, the mean score of first post-test increased up to 68.29. Then, for the second post-test the mean score up to 80.31. Moreover, mind mapping enhances the English class situation, especially in reading class. Students will very enthusiastic in following the teaching and learning process and their motivation in English lessons can also get better.

Another previous study, (Maris & Diem, 2019) state that mind mapping technique is one of applicable teaching strategy that can be applied in teaching reading. Moreover, online mind mapping helps the students in improving reading comprehension achievement. There was a significant improvement in students' reading comprehension achievement after they were being taught by using online mind mapping. Through the six sub-skills, namely main idea, detail, inference, cause and effect, sequence, and vocabulary, sequence sub-skills appears as a dominant sub-skill in giving the contribution to the improvement of reading comprehension achievement. Lastly, it can be assumed that, online mind mapping is an effective strategy to help students in SMAN 2 Palembang to improve students' reading comprehension achievement.

The third study, According to Dr. Hasnaa Sabry Abdel-Hamid Ahmed Helwa (2020) study, digital mind mapping is one of the best approaches to develop student teachers' EFL critical reading and writing skills. It plays an effective role in developing EFL critical reading and writing skills. It is an effective way of getting information in and out of the brain. It helps students to actively engage in their learning, through connecting their prior knowledge to new information. It improves interaction between students and enhances group work. It also provides students with opportunities to be involved in concepts, information and events through discussion, asking questions, and obtaining information. It is one of the active learning strategies. When considering the advantages and positive outcomes of the program, it is clear that the program proved developing student teachers' EFL critical reading and writing skills. Thus, digital mind mapping application based program is more successful than the traditional teaching.

This research used the same technique as the previous studies mentioned above. Although it uses the same technique, there are some differences. Another researcher used mind mapping in traditional way to teach reading comprehension to first-year students at SMPN 3 Colomadu. However, in this research online mind mapping will be apply to the Senior High School students in SMAN 2 Bandar Lampung. Moreover, the technique was also used in improving students' reading comprehension in implicit information of reading text, while in this research the

researcher used Mind Mapping technique by using online mind mapping to improve students' reading comprehension in narrative text. For the rest of the previous researches, online mind mapping was applied in their researches, which they concluded by using online mind mapping could help the students to improve their reading ability. However, in this research will use the different application. Therefore, the researcher can conclude whether the application that will be used in this research can improve students' reading comprehension ability in narrative text.

2.2. Reading

Reading is the skill or activity of getting information from books. It is an important skill for students to learn. Hence, a student who is not engaged in reading activity, he/she will miss new information. Harmer states that reading is useful for language acquisition; the more the students read, the better they get at it. In addition, Jeremy Harmer (2007) states that reading also has positive effect on students vocabulary knowledge, on their spelling, and on their writing. Mc Donough (2013) supports by stating reading is clearly one of the most important.

Grabe (2002) states that reading is the ability to draw meaning from the printed page and interpret this information appropriately. McLaughlin as cited by Barbara Hawkins (1991) points out that reading is the most complex and difficult skills than others that the child must acquire in school. In addition, based on Goodman (1970), reading is a selective process which involves partial use of available minimal language cues selected from perceptual input on the basis of the reader's expectation. As this partial information is processed, tentative decisions are made to be confirmed, rejected or refined as reading progresses.

In summary, reading is the way to get some ideas and information from written text through continuously process in which the reader can make a decision to confirm, reject, or refine the ideas itself. In line with Grabe's statement before, I do agree that reading is a kind of activity that people need to interpret the printed page through drawing the meaning of that page. Drawing the meaning helps readers to easily understand what they interpret from the text.

2.3. Reading Comprehension

Comprehension is the ability to understand completely and be familiar with a situation, facts, etc. Comprehension is not a single unitary process. It starts from the moving of words on the page to meaning in the mind, the recognizing of individual words by using memory and knowledge of letter and sound patterns, matching the resulting pronunciations to meaning, and finally connects these words into idea units.

Snow cited by Kurniawan (2013) states reading comprehension as the process to get a precise understanding of the writer's message through simultaneously extracting and constructing meaning by collaborating reader's background knowledge and interaction and involvement. In line with this, Grabe (2001) explains that reading comprehension is the interaction of information between the reader's drawing information from a text and the reader's expectations or information about the text that already has.

Lems (2010) concludes that reading comprehension is not a static competency. It depends on reader's purpose to read and reader's basic knowledge with the text used. In addition, the role of strategies helps the reading comprehension achieved. Wilhelm cited in Kurniawan's writing defines that reading comprehension is the degree to which the readers understand what the readers read. It is the ultimate end-goal of reading that if the readers do not read to understand, the readers will read for nothing. Comprehension requires the reader to be an active constructor of meaning.

Based on those definitions above, reading is an important activity that used in learning process, but it becomes more useful when the readers can comprehend what they read. Overall, reading comprehension can be concluded as the ability to understand the meaning or idea in the written text completely and chronically. Even though reading comprehension has long process, what the readers get are comparable with the process itself.

In addition, it can be concluded that reading comprehension ability is necessary for people to have it. Based on this research, students need to comprehend what they read in order to get academic success. Of course, reading comprehension is a long activity, but with the appropriate technique for each student/reader, it is not

possible that the longactivity becomes an interesting long activity that makes the students/readers enjoy and can easily comprehend what they react.

2.4. Narrative Text

Anderson and Anderson (1997) state that narrative text is a type of text that tells a story which has a purpose to present a view of the world that entertains the reader or listener. Some of the story of narrative text presents a set of experience of the world life. In most of cases, narrative text is not only to entertain but also to convey the moral value of the story to the readers.

There are five main parts of narrative text. The generic structures of a narrative text are explained as follows:

1. Orientation

The readers are introduced to the main characters and possibly some minor characters. Some indications of where the action is located and when the event is taking place are generally given in this paragraph.

2. Complication

This is where the problems in the story develop. The complication consists of serious events which something unexpected happen.

3. Sequence of events

The sequence of the events is a number of events or things that come one after another in a particular order. This is where the narrator tells how the characters react to the complication. The event can be told in chronological order (the order in which they occur) or with a flashback.

4. Resolution

Resolution is when the problem finds a way out to be resolved.

5. Coda

Coda is a closing remark to the story. Usually, coda consists of a moral lesson/moral value from the writer.

Based on the statements above, narrative text is a text that deals with a story, which presents a set of experience, which has a purpose to entertain or amuse the readers or listeners. A good narrative text has to complete the generic structure such as orientation, complication, and resolution.

2.5. Mind Mapping

Mind mapping is a common technique in the English teaching-learning process. Mind mapping involves writing down a central idea and thinking up new and related ideas, which radiate out from the center. It is one of great techniques, which help students to memorize certain things. It supported by the fact that mind mapping enables us to arrange the facts and ideas. Moreover, mind mapping shows the overall structure of a subject and the relative importance of individual parts of it. It helps students to associate ideas, think creatively, and make connections that might not otherwise make (Buzan, 2010).

Mind mapping technique can be used to explore almost every topic, though discursive essays and narrative work particularly well as they front students' ideas and lend them to discuss ideas in group. Buzan (2008) says that by using mind mapping, people can represent ideas into visualization and graphic forms where one idea is connected to another idea by using branches. Besides, he also says that by using mind mapping, it is easy for people to put information into their memory. Mind mapping is highly effective way of getting information in and out of your brain. Mind map is a creative and logical means of note taking and note making that literary map out your ideas.

2.6. Online Mind Mapping

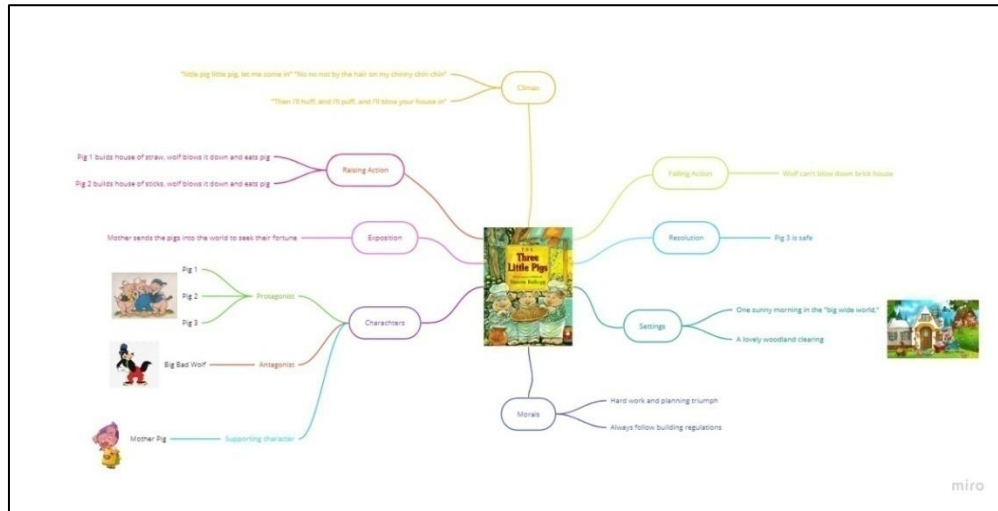
The use of Information and Communication Technology or ICT, cannot be denied. Technology facilitates people in every aspects of life. It is really helpful and everybody needs it. Moreover, in education field, the use of technology in teaching and learning process is becoming essential now. Since technology take part in whole aspects of human's life, it transforms the conventional mind mapping into the online as well. According to Dr. Hasnaa Sabry Abdel-Hamid Ahmed Helwa (2020), online mind mapping is one of the best approaches to develop student teachers' EFL critical reading and writing skills.

Online mind mapping is mind mapping that can be accessed just through online. People should connect to the internet in making this mind mapping. It has so many advantages and it does not only help people in sharpening their ideas but also can help them to hand the technology in right way. People do not need a pen and paper anymore when they want to make mind mapping. In this online mind mapping they just need to visit the website and create the mind mapping. Moreover, they can choose the appropriate template based on their need. They can add picture, change the color, capture it, share it, import some files and easily can edit it. Here are some of the features of online mind mapping:

- a. Import image to the mind mapping
- b. Export mind mapping into image
- c. Share the mind mapping into email
- d. Add interesting symbols
- e. Change colors

2.7. Example of Online Mind Mapping

Figure 1 An example of online mind mapping by using “Miro Mind Map application”



Mind mapping can help someone to maximize the potential ability of the brain to memorize and organize ideas (Wycoff, 2003, cited in Kusumaningsih 2008) because a mind map helps to enhance the brain’s capacity to recall information (Beare, 2009). It can be also motivating way for the students to summarize a unit, because it assists in digesting information, retaining it and exploring new concept and topic in our own unique way (Margulies, 1991).

Concerning the application of modern mind mapping, Karamifard and Minaeifar (2016) studied the effect of using digital vs. traditional mind mapping strategy on Iranian young students’ perception and revealed that the digital mind mapping group showed higher levels of achievement than students did in the traditional group in perception. Mohaidat (2018) examined the effects of the e-mind maps on English reading comprehension of 9th grade students in Jordan and found that the e-mind mapping strategy had significant and positive impacts on the students’ English reading comprehension ability. Abd Karim and Mustapha (2020) examined the application of digital mind maps to encourage creativity and critical thinking in ESL writing course and found evident stimulation of the students’ creativity and critical thinking in completing their writing tasks based on the respondents’ perception.

There are five essential characteristics in mind mapping:

1. The central point is the starting point from mind map that gives a brief description of story (Eppler, 2006)
2. The main themes of the subject radiate from the central image as branches. The first level of branches is called basic ordering ideas that can be organized into different sections or topics (Eppler, 2006 & Margulies, 1991)
3. The topics of lesser importance are represented as ‘twig’ of the relevant branch (Margulies, 1991)
4. Keywords are the words given to each of branches to convey meaning of the topic (Eppler, 2006)
5. Images are widely seen as the best way to describe a mind mapping because it can give better meaning than words. It can be used anywhere, as a substitute for the central topic, the branch or instead of a keyword on a branch (Eppler, 2006).

Based on the explanation above, mind mapping is an effective technique to present and rearrange ideas, which come on mind. Moreover, by utilizing technology, we can use online mind mapping to facilitate learning. Online mind mapping present higher effectiveness and attraction compared to traditional ones as they rely on the use of professionally fast and specialized computer software providing photos, colors, and drawings that can be attractive for the readers.

2.8. The Advantages and Disadvantages of Mind Mapping

Buzan (2007) proposes to apply mind mapping technique in class. Because it makes students to be more imaginative to find new idea, to save time, to be creative, to keep note, to develop a concept, and to perform a presentation. Moreover, (Plotnik 1997 cited in Dolehanty, 2008) states, “the main advantages to concept mapping are the use of the visual symbols which are easily recognized. It is also easy to scan for a specific word or general idea and it allows for a more holistic understanding of a concept”.

In addition, Hofland (2007) argues that mind mapping can contribute to learner's motivation because of its creative aspects. This statement is supported by Bono (1969 cited in Hofland) who states that "creativity is a great motivator because it makes people interested in what they are doing. Creativity gives hope that there can be a worthwhile idea. Creativity gives the possibility of some sort of achievement everyone. Creativity makes life more fun and more interesting".

Furthermore, Pandey (2009) affirms that mind mapping helps students transform vague ideas into concrete projects. Mind maps can be drawn during lectures, sessions, interviews and corporate meetings. Once these techniques are mastered, they prove to be an excellent tool to make quick decisions. Sari (2010) found that the students are easier and faster in understanding in reading report text, easier to remember information, increase creativity, enjoyable, and save the time while utilizing mind mapping technique.

Additionally, Abd Karim and Mustapha (2020) examined the application of digital mind maps to encourage creativity and critical thinking in ESL writing course and found evident stimulation of the students' creativity and critical thinking in completing their writing tasks based on the respondents' perception.

Based on theories above, it can be concluded that the use of mind mapping technique in classroom is effective. Because it can increase student's motivation and make the teachers easier to explain the learning material. In addition, with the use of online-based media, learning with mind mapping techniques will be carried out very flexibly. Students who are studying at home can reach out and participate in collaborating on one digital board in assembling mind maps.

In other hand, the disadvantage is the students need a lot of time to read and review in deciding sub topics or branches. They still confuse to transfer the important information from the text to be appropriate branches in their mind map. According to Hofland (2007), creating mind map may take time, but this helps you to recall information and will check your understanding.

From those explanations above, it can be concluded that mind mapping naturally just a technique, which has both positive and negative things inside. Oftentimes, the learners can take the advantages through this technique. Meanwhile the disadvantages cannot be separated from its use. Hence, it depends on the user to maximize the advantages of using mind mapping.

2.9. Miro Mind Map

Miro Mind Map is a digital mind mapping software that enables teams to centralize cross functional coordination. Miro Mind Map is representation of an all-in-one mind mapping, whiteboard and collaboration online application. Bhattacharya & Mohalik (2020) affirm that Miro Mind Map is a fast and easy way for a team to collect, tracks, and arrange user stories, schedule scripts and reflect. It offers creative drawing in real time. This online application is ideal for visual learners, it lacks the rigid structure of other idea techniques, focusing on creative and logical ways to map ideas literally. The platform is packed with a limitless immersive whiteboard for all visual activities such as agile planning, project management and the architecture. More than 20 applications are embedded, including InVision, Confluence, Slack, Google Drive, Jira and more.

Miro Mind Map can be accessed through visiting the web site <https://miro.com/mind-map/>. This platform can be used for free, but it can also be paid to unlock some limited features. Moreover, the advantage of Miro compared to others is that more free features are provided to users than other online mind mapping applications. For the example, Miro Mind Map provides collaborative real time mind map free feature, meanwhile in others online applications that feature is not free to use. Miro mind map can serve as an influential tool, not only to improve students' self-confidence and visualization skill, but also to provide quicker and comprehensive ideas for their better conceptual understanding in reading.

2.10. Students Perception

People may have different perceptions, it depends on their physiological process such as needs and interests. According to Sidhu (2003), student's perceptions are student's point of view toward something that happened in learning process. Therefore, student's perception is how student has thought to response what they done or what they learned.

(Rizqiya, 2013) in her research about the use of mind mapping in teaching reading comprehension affirms that mind map is one of the techniques that is fun to do. It is good to train students' comprehension on the facts and details. Her research proved that mind map is a superior note taking technique. It can be proven by the result of the responses of the students, which explicitly wrote that mind map is a very interesting technique that can make them felt more excitement. Moreover, the students were enjoying in using mind map because it really helped them in comprehending English passage. However some others also added that even mind mapping was easy, they still had limitation in making mind map. One of them felt that the time was not enough to make a mind map because it needed extra preparation. It concluded that the students' perception on mind mapping is mainly positive. Although there was still a limitation, but it was not from the technique. It was more about the process of carrying out the technique itself.

In another previous research, (Fadillah, 2019) found that there were positive and negative perception on the use of Mind Mapping in learning writing. This proved by the respondents who stated that Mind Mapping eased the students to think and organize their ideas before writing something. Moreover, mind mapping application software was that it facilitated students develop or organize their idea. It made the students' writing more well-structured. This was because mind mapping led the students to arrange their ideas in more detail. In addition, developing or organizing the ideas could make their writing coherent. Beside, the obstacle of using mind mapping application software is it needs computer access which makes the students feel complicated. When the students want to create mind map, automatically they needed computer access that had already installed the mind mapping application software to open and to create it. So that, it can be concluded

that the majority of the students had positive perception on the use of mind mapping application software in learning writing and they perceived that mind mapping application software is an effective tool to help them to organize the ideas in learning writing

From the previous researches above, it concluded that either conventional or digital mind mapping technique had greatly assist students in their learning activity. In Rissa San Rizqiya (2013) research, it was found that students' perception about mind mapping technique was helpful in comprehending passages. On the other hand, there is still difficulty in carrying out mind mapping technique. It took a lot of time to make a conventional mind map. However, another research from Rahmad Fadillah (2019) was discussed the students perception about mind mapping technique in writing activity by using mind mapping application software. It was concluded that mind mapping is an effective way to help them to organize the ideas in learning writing. Moreover, the students experienced the flexibility of making mind map digitally.

2.11. Theoretical Assumption

Within the theoretical framework, it was assumed that the reading ability of students can be developed using mind mapping technique. With this technique, it may be effective because students can express their ideas, try to think creatively, and get the deep meaning of the story in the text. In short, this technique helps students to transfer their visual words, phrases, and sentences to make it easier because the idea and understanding of the text becomes clearer and easier to understand. Therefore, the researcher assumes that by using online mind mapping in this era, it can be a more effective way for the students to create their own mind maps without using paper, marks, pencils, etc. In addition, the students can do collaboration through online mind mapping to assembly their thoughts into one mind map.

2.12. Hypothesis

Based on the theoretical assumption above, the researcher formulates the hypothesis as follows:

Ha: There is significant increase of students' reading comprehension ability after being taught by mind mapping technique through Miro Mind Map application at SMAN 2 Bandar Lampung.

Ho: There is insignificant increase of students' reading comprehension ability after being taught by mind mapping technique through Miro Mind Map application at SMAN 2 Bandar Lampung.

III. RESEARCH METHOD

This chapter discussed about research methods, which consisted of research design, population and sample, data collecting technique, try out, procedures of collecting data criteria of good test of reading, and data analysis.

3.1. Research Design

The research was a quantitative method to analyze the result of the research. In terms of reading score in this research, the researcher focused on the use of mind mapping technique by using online mind mapping to increase students' reading comprehension ability in narrative text. The researcher gave a pre-test of reading narrative text to the students before treatment, then after the treatment, the researcher gave a post-test of reading text. The subject of the research was only one class, so the researcher used One-group Pretest and Post-test Design. This research design of pre-test and post-test was illustrated as follows:

T₁ X T₂

The design can further be described as follows:

- T₁ : Relates to pre-test of reading comprehension which is given before treatment.
- X : Refers to treatment by means of teaching reading comprehension using Mind Mapping technique.
- T₂ : Denotes post-test of reading comprehension, which is given after treatment.

(Hatch and Farhady (as cited in Setiyadi 2006)

In this research, there were two variables, which were dependent variable and independent variable. The dependent variable was the media used as a treatment in teaching reading for the students. Independent variable was students' score in reading test. Before the test was given, firstly the researcher gave tryout to the students. The tryout test was given before all of the tests and treatments were given to the students.

The aim of the try out test was to find out the quality of the items of the research. After the tests used in this research, the score showed the data about students' reading ability. This research was to find out the students' reading ability by using pre-test and post-test. Pre-test was administered before the treatment by mind mapping, then, post-test was analyzing the students score after being taught using mind mapping.

3.2. Population and Sample

The populations of this research were the Senior High School students in SMAN 2 Bandar Lampung. The researcher chose the tenth-grade students because the researcher assumed that it is appropriate with the basic competence that the researcher took. In selecting the sample in this research, the researcher used one kinds of non-probability sampling. For this study, the researcher had chosen the purposive sampling. This purposive sampling referred to as judgment sampling-sample elements judged to be typical, the representative is chosen from the population (Ary et al, 2010:156). It focused on sampling technique where the sample that is investigated is based on the judgment of the researcher. By using purposive sampling, a criterion for sample obtained was expected to be completely in accordance with this research.

Choosing the sample was based on purposive sampling depended on what criteria which were used. The researcher chose SMAN 2 Bandar Lampung because there was same basic competence, which discussed about learning narrative text. The first grade of MIPA 2 was chosen by the English teacher in SMAN 2 Bandar Lampung, Ms. Fajar Kurniasih, as a sample of this research. The samples were 29 students that consisted of 17 female students and 12 male students.

There were two variables in this study, they are: (1) dependent variable, and (2) independent variable. This study employed two variables, they were: (1) reading comprehension was a dependent variable (Y) because this variable was observed and measured to determine the effect of the independent variable, and (2) Mind Mapping technique was an independent variable (X) because this variable can influence or have the effect to the dependent variable.

3.3. Instrument of the Research

Data had an important role in research. In doing the research, the researcher collected some significant data by doing experimental teaching. To collect the data, the researcher had to use the instrument of collecting data. In order to obtain an appropriate data, the instrument of this research was the objective reading test. The objective reading test, which was selected, was a multiple-choice text, which was used for pre-test and post-test. The test is in the form of multiple choices that consists of 40 items. Each question has five alternative answers (A, B, C, D, and E), one is the correct answer and three others are distracters.

3.3.1. Developing Instrument

In this research, to prove whether the test of reading has good quality, it must be tried out first. As Heaton (1991) states that a reading test will be said to have a good quality if it has good validity, reliability, and difficulty level and discrimination power. The reading test will also be called as a good test if it has good validity and reliability.

3.3.1.1. Validity

A test can be considered valid if the test measures the object to be measure and suitable with the criteria (Hatch and Farhady, 1982). The discussions of the validity of reading test are provided below:

1. Content validity

Content validity is concern whether the test is sufficiently representative and comprehensive for the test. In the content validity, the material is given suitable with the curriculum. Content validity is the extent to which a test measures a representative sample of the subject meter content, the focus of content validity is adequacy of the sample and simply on the appearance of the test. (Hatch and Farhady, 1982).

The topic chosen was narrative text. The topics were the representative of reading materials of School Based Curriculum as a matter of relating the lesson to students' need. To know whether the test has a good content validity, the items of the test were discussed with the expert (advisors), and the English

teacher of SMAN 2 Bandar Lampung.

2. Construct Validity

It is concerning to whether the test is actually based on the theory of which it means to know the language that is being measured. In this research, the researcher focuses on reading comprehension in the form of narrative texts. Nuttall (1982) states that the relation validity of the instrument refers to construct validity in which the question represents five of sort reading skills, i.e. determining main idea, finding detail information, reference, inference and vocabulary mastery. Skills of reading in the test are a part of the construct validity and the item numbers are a part of the content validity.

The test is compared to the table of specification to identify whether the test has a good reflection of what will be taught. A table of specification is an instrument that helps the test constructor planning the test.

3.3.1.2. Try-out

Before conducting the research, the data collecting techniques were try out in order to make sure whether the instruments are valid and reliable to collect the data. The researcher administered a try out test on January 4th, 2022 in X MIPA 3 SMAN 2 Bandar Lampung. X MIPA 3 class was chosen by the English teacher in SMAN 2 Bandar Lampung, Ms. Fajar Kurniasih, to analyze the reliability, level of difficulty, and discrimination power to achieve a good test instrument criteria. The number of the students who was tested with tryout test was 28 students. The try out test was in objective test type consisting of 50 items, each item consists of five options (A, B, C, D, and E). The students were required to finish the test within 50 minutes. After analyzing the data, the researcher obtained that 40 items were good and 10 items need to be dropped from the test.

Table 1. Specification of Reading Test Items for Try-out

No	Reading Aspects	Item Number	Number	Percentage
1	Identify Main idea	1, 6, 11, 16, 21, 26, 35, 40, 41, 46	10	20%
2	Finding Specific Information	2, 7, 12, 17, 25, 28, 33, 38, 42, 49	10	20%
3	Inference	4, 10, 14, 18, 22, 27, 31, 37, 45, 47	10	20%
4	Reference	5, 9, 15, 20, 24, 30, 34, 39, 44, 50	10	20%
5	Vocabularies	3, 8, 13, 19, 23, 29, 32, 36, 43, 48	10	20%
Total		50	50	100%

3.3.1.3. Results of The Try-out Test

Try-out test was conducted on January 4th, 2022 in X MIPA 3 class. The class consisted of 28 students. Class X MIPA 3 was chosen by the English teacher in SMAN 2 Bandar Lampung, Ms. Fajar Kurniasih, to analyze the reliability, level of difficulty, and discrimination power to achieve a good test. The students were given 50 items of multiple- choices questions. Multiple- choices contained five options (A, B, C, D, and E). The students could be able to check the text to see if any of the choices were specifically discussed then make a choice. In this research, there were 50 items in the try-out test. The results of the try-out test can be seen in the table below.

Table 2. Result of Try-out Test

Criteria	Items	Decision
Poor	3, 6, 14, 26, 31, 32, 38, 42, 44, 50	Dropped
Satisfactory	1, 4, 7, 8, 9, 10, 11, 12, 13, 16, 17, 18, 20, 22, 24, 25, 27, 29, 33, 34, 35, 36, 37, 39, 40, 41, 43, 45, 46, 47, 48, 49	Administrated
Good	2, 5, 15, 19, 21, 23, 28, 30	Administrated

Based on table 2 above, there were 10 items, which were poor and should be dropped. Based on the try-out test related to the criteria level of difficulty, the try-out test consisted of 8 good items, 32 items were satisfactory, and 10 items were poor. The result of the try-out level of difficulty and discrimination power could be seen in Appendix 4.

The results of the try-out test can be seen in the table (see Appendix 4). In reference to the table, Split-Half technique was used to find the reliability of the half-test and to measure the coefficient. The results of computation by using Split-Half technique showed that the results of the whole test was 0.88 (see Appendix 5). It can be stated that the test had average reliability is 0.50-0.89 (Hatch and Farhady, 1982:127)

3.3.1.4. Reliability of The Test

Reliability referred to the consistency of the measure. A test can be said reliable if its scores remain relatively stable from one administration to another. It meant that a test was reliable if it had a consistent score from one test to another test. To estimate the reliability of the test this research used the Split-Half technique.

The criteria of reliability are as follows:

A high reliability ranges from 0.90 to 1.00.

An average reliability ranges from 0.50 to 0.89.

A low reliability ranges from 0.00 to 0.49.

(Hatch and Farhady, 1982)

The reliability of an instrument is determined from the coefficient in the calculation must be in average reliability range. On the reliability test, this research used SPSS.22 with the Guttman Split Half Coefficient. Reliability test on the instrument was described in Appendix 5.

After acquiring the test, it was found that the results of the whole test was 0.88 (see Appendix 5). It indicated that the result was in average range of the reliability criterion. In the other words, it could be stated that the test was reliable.

3.3.1.5. Level of Difficulty

Level of difficulty is related to how easy or difficult the items of the test are from point of view of the students who take the test. Level of difficulty is generally expressed in the percentage of the students who answer the item correctly. To find out the level difficulty, the researcher used the following formula:

$$LD = \frac{U+L}{N}$$

Notes:

LD level difficulty

U denotes with the proportion of upper group students who answer correctly

L is concerned the propotion of lower group students who answer correctly

N refers to the total number f students

The criteria are as follows:

<0.30 : Difficult

0.30-0.70 : Average

> 0.70 : Easy

For the result of level of difficulty, (see Appendix 4).

(Shohamy, 1985)

3.3.1.6. Discrimination Power of The Test Items

Discrimination power refers to “the extent to which the item differentiates between high and low level students on that test. A good item which is according to this criterion, is one in which good students did well, and bad students failed.”

(Shohamy, 1985:81)

The formula is:

$$DP = \frac{U-L}{\frac{1}{2}N}$$

DP is concerned with discrimination power

U refers to proportion of “upper group” students getting the item correct

L refers to proportion of “lower group” students getting the item correct

N designates a total number of students

The criteria are follows:

DP = 0.00-0.19 = poor

DP = 0.20-0.39 = satisfactory

DP = 0.40-0.69 = good

DP = 0.70-1.00 = excellent

(Arikunto, 1997:223)

For the results of discrimination power, (see Appendix 4).

3.3.1.7. Normality Test

Kolmogorov Smirnov normality test is part of the classical assumption test. The normality test aims to determine whether the residual value is normally distributed or not. A good regression model is to have a residual value that is normally distributed. The researcher used (SPSS 22.0 for Windows) to calculate it. The criteria for normality test can be based on probability (Asymptotic Significance) as follows:

1. Asymp. Sig. (2-tailed) > 0.05, the residual value is distributed normally.
2. Asymp. Sig. (significant) < 0.05, the residual value is not distributed normally.

Based on the results of the normality test, it was known that the significance value was $0.200 > 0.05$. It could be concluded that the residual value is normally distributed (see Appendix 7).

3.3.1.8. Questionnaire

In addition to using a quantitative data, this research also distributed questionnaires to the students as qualitative data. The type of questionnaire given was an open-ended questionnaire. Open-ended questionnaire was free-form survey questions that allow respondents to answer in open text format so that they can give their best responses based on their complete knowledge, feeling, and understanding. It means that the response to this question is not limited to a set of options. In this research, the open-ended questionnaire was used as a follow-up to identify whether students really found it helpful when using Miro mind map application to improve their reading comprehension ability. In the other words, the researcher expected that there was a significant improvement in students reading comprehension ability and increase in

students reading aspect. The researcher provided a questionnaire in form of Google form, which it consisted five open-ended questions.

3.3.2. Data Collection

In this research, the researcher used the test as a data collecting method and also treatments. The test was used to collect the needed data by conducting some techniques as follows:

1. Pre-test

The pre-test was conducted before the treatment of teaching reading comprehension through Miro mind map application in narrative text. The purpose of the pre-test was to see the students' reading comprehension before the treatment. The pre-test was given as an objective test in multiple choices form. There were 40 items of multiple-choices of comprehension questions which each of it has four alternative answers (A, B, C, D and E). The students were required to finish the test within 45 minutes. The distribution of test was presented as follows:

Table 3. Specification of Pre-test

Aspect of Reading	Items Number	Percentage
Main Idea	5, 10, 18, 22, 30, 31, 35, 40	20%
Specific Information	1, 6, 11, 15, 19, 26, 43, 38	20%
Reference	4, 7, 12, 14, 23, 28, 32, 37	20%
Inference	3, 9, 13, 17, 21, 25, 29, 39	20%
Vocabulary	2, 8, 16, 20, 24, 27, 33, 36	20%
Total	40	100%

2. Post-test

The post-test was given to the students after the treatments in order to find out the significant difference between the score of the students' reading comprehension achievement after being taught through Miro mind map application in narrative text. The result of the post-test was compared with the result of the pre-test. The test consisted of 40 items of multiple choices of comprehension questions which each of it has five alternative answers (A, B, C, D and E). The students are required to finish the test within 45 minutes.

Table 4. Specification of Post-test

Aspect of Reading	Items Number	Percentage
Main Idea	1, 9, 13, 18, 29, 33, 34, 37	20%
Specific Information	2, 5, 10, 14, 22, 24, 27, 40	20%
Reference	3, 8, 15, 19, 23, 31, 36, 38	20%
Inference	4, 7, 12, 17, 21, 26, 28, 32	20%
Vocabulary	6, 11, 16, 20, 25, 30, 35, 39	20%
Total	40	100%

3. Questionnaire

The questionnaire was distributed after the students had finished their post test. The questionnaire was analyzed to identify whether students really found it helpful when using Miro mind map application to improve their reading comprehension ability. The question was an open-ended question, which consisted of five questions to respond. The question related to the use of Miro mind map application in reading comprehension. The questions were served in the form of a Google form. This data was a qualitative data, which will be collected and analyzed by qualitative descriptive method.

3.4. Scoring System

The scoring system that was used in this research was dividing the right answer by total items timed 100. The ideal highest score was 100. To calculate the score of pre-test and post-test, the researcher used the vormula by Arikunto (1997) which was employed: `

$$S = \frac{R}{N} \times 100$$

Where:

S is the score of the test

R is the right answer

N is the total of the items

3.5. Data Analysis

After the data had been collected in form of score by using tests, the researcher analyzed the data in order to know whether there was an increase of the students'

reading ability from pretest result to post-test result by using Paired Sample T-Test of Statistical Program for Social Science (SPSS 22). The results of the test were in the forms of score or interval data. The researcher analyzed the students' reading ability by doing these activities:

- 1). Scoring pre-test and post-test
- 2). Tabulating the score of students' reading test results using Paired Samples T-Test
- 3). Then, summarizing the finding from the tabulated result of the pre-test and post-test

The researcher used statistical computerization, Paired Samples T-Test, of Statistical Program for Social Science (SPSS 22) to test whether there was an increase or not.

In addition, there was a qualitative data in form of open-ended questionnaire. The data will be analyzed by a qualitative descriptive method. Qualitative descriptive research method is focused on problems based on facts, which are carried out by means of observations, interviews, and studying documents. The researcher analyzed the students' perceptions by doing these activities:

- 1). Collecting the students' responses
- 2). Assembling the students' response by category
- 3). Then, summarizing the finding by using qualitative descriptive method

3.6. Teaching Procedures

The treatment was administered on January 9th 2022, January 16th 2022, and January 23rd 2022 in class X MIPA 2. The explanations below were the procedures of teaching narrative text through Miro mind map application in the class..:

- First** : At the first meeting, the researcher provided a pre-test for the students in order to find out how far the students' reading comprehension before being given the treatment. The test was an objective test in the form of multiple choices. The number of items was 40 items and each item had five options of answer (a, b, c, d, and e). The time allocation was 45 minutes.
- Second** : At the second meeting, the researcher explained the definition of reading comprehension, the five aspects of reading, the definition of narrative text, types of narrative text, function of narrative text, characteristics of narrative text, and structure of narrative text.
- Third** : After that, the researcher started to introduce and practice the procedure of using Miro Mind Mapping application. Later, tells the students about the advantages of using mind mapping in learning reading, especially in reading narrative text.
- Fourth** : Then, the students were directed to make their own account on Miro Mind Map.
- Fifth** : The researcher explained how to get the five aspects of reading by constructing a mind map.
- a) It started from putting the topic in the middle of mind map. After that, the first branch will be made to put the main idea of the text. The students can find the main idea on the first or last paragraph. But the students need to get the main key word of the text first, it can be found on the title of the text/story
 - b) The second branch will be filled by the detail information. The students can put the name of characters, places, numbers, date, fact, opinion, etc, or we can say it the orientation of the text
 - c) The vocabulary aspect will fill the third branch, where the students

can put some difficult words from the text and they can relate the synonym or the antonym of the words.

- d) For the next branch, the students will put the 'reference'. In reading tests, the students are often asked to connect referent words to the words or meanings they refer to. In order to gain the students awareness of this aspect, they can put the characters/nouns and find some of the pronouns which connect with the characters/nouns themselves.
- e) The last main branch is 'inference'. The inference is implied or not directly stated in the text. Frequently asked question from reading text about the inference can be conclusion, moral value, true or not true statement, and summary. The students can point out the complication, resolution, and re-orientation of the text, and after that the students will make the inferences of them by their prior knowledge.

Sixth : The point of draw a mind map was to get the key points of the text. After being taught, the students did a collaborative mind map. The researcher provided an example of reading narrative text. After that, the students found the ideas of the text and constructed the five aspects of reading in one mind map by using Miro Mind Map application together.

Seventh : For the third meeting, the researcher divided the students into six groups. Then, the students were asked to find a narrative text

Eight : And then, the researcher gave students instruction to read and comprehend the text first. After comprehending the story, they have to write and draw their comprehension (Five aspects of reading) through online mind mapping by using Miro Mind Map.

- Ninth** : The result of mind map that the students had made was collected before they present their mind map. After that some of group were chosen to present their mind map in front of the class / Google Meeting, and then some others give their opinion.
- Tenth** : After that, the researcher gave the quiz (five aspects of reading) related to the mind map that the students had presented in the class.
- Eleventh** : Post-test was given at the fifth meeting. This test aimed to find out whether there was a significant students' reading ability after the treatments. It was administered for 45 minutes.
- Twelfth** : After post-test was administrated in the class, the researcher gave the student five open-ended questions as a following up activity to identify whether the students really found it helpful when using Miro Mind map to improve their reading comprehension ability.

In short, the students learnt narrative text using mind mapping technique. The technique was optimized by using Miro Mind Map application. At first, the students were explained about reading comprehension especially reading narrative text. Then the researcher explained the concept of mind mapping technique by using Miro mind map application. After that the students were explained how to get the five aspects of reading by constructing a mind map. Then, after being taught, the researcher gave an example of reading narrative text in a form of reading test. They were asked to comprehend narrative text collaboratively. The next was the students were asked to make their own mind maps in a group. Then, some of the groups had to present their mind map in front of the class/ Google Meeting. At the end of the presentation, the researcher gave a quiz that related to the presentation, which the students had presented. Finally, the students had to answer the questions about the text. It was used to know their comprehension. In this case, the teacher had role as facilitator.

3.7. Research Procedures

In collecting the data, the researcher used the following steps:

1. Determining research instruments

The test was made for pre-test and post- test. The multiple choices were a form of the test. The questions, which were present in the test, consist of five aspects of reading, which was related to the main idea, detail information, inference, reference, and vocabulary.

2. Try-out the instrument

The try-out test conducted before the pre-test to measure the test which is used during the research was appropriate and applicable to collect the data. The try-out test consisted of 50 items of multiple-choices of comprehension questions which each of it has five alternative answers (A, B, C, D and E). The students required to finish the test in 40 minutes. A good test can be measured by considering several factors, such as validity, reliability, level of difficulty and discrimination power.

3. Administering the pretest

Pretest was conducted before the treatments. It was the aim to check students' reading ability in determining mind idea, references, inference, finding detail information, and vocabulary in texts. Pretest was administered for about 45 minutes on the second week of the research.

4. Conducting treatments

After giving the pre-test, the treatment was conducted in three meetings. It took 50 minutes for each meeting of the treatments. The researcher taught narrative text by applying mind mapping technique by using online mind mapping web "Miro Mind Map".

5. Administrating post-test

Post-test was conducted after the treatment. This test aimed to find out whether there was a significant students' reading ability after the treatments. The test was in form of multiple choices with 40 items and five alternative answers for each (A, B, C, D and E). One as the correct answer and the rest are the distracters. It was administered for 45 minutes.

6. Analyzing data

After conducted the pre-test and post-test, the data of students' answer were analyzed by using Paired Sample T-Test. It is use in order to know whether or not Mind Map technique could increase the students' reading comprehension in narrative text. If there was an increase in the score of the post-test, it simply means that the research had given a good progress for the students to master reading comprehension. The data computed through Statistical Package for Social Science 22.0 (SPSS) program.

(Hatch and Farhady, 1982)

7. Open-ended questionnaire

After analyzed the data, the researcher provided open-ended questionnaire as a follow-up activity to identify whether students really found it helpful when using Miro Mind map to improve their reading comprehension ability. The researcher provided a questionnaire in form of Google form, which it consisted five open-ended questions.

3.8. Hypothesis Testing

After collecting the data, the researcher tried to analyze them in order to find out whether the use of mind mapping has positive effect by knowing the increase on students' reading ability. The hypothesis testing was used to prove whether the proposed hypothesis in this quantitative research was accepted or not. The hypothesis was analyzed by using Paired Samples T-test of Statistical Package at the significance level of 0.05 ($P < 0.05$). The hypothesis testing was tested with the following criteria:

H_0 : There is insignificant increase of students' reading comprehension ability after being taught by using mind mapping technique through Miro Mind Map application

H_1 : There is significant increase of students' reading comprehension ability after being taught by using mind mapping technique through Miro Mind Map Application.

V. CONCLUSIONS AND SUGGESTIONS

In this chapter, the study presented the conclusions that were based in the research's result and discussion in the previous chapter. It also presented suggestions were proposed for the teacher and for other researchers who are going to conduct any similar research.

5.1. Conclusions

Referring to the discussion of the research findings on the previous chapter, the researcher comes to following conclusions:

Based on the result and discussion, it can be concluded that there is significant improvement on students reading comprehension ability of narrative text after applying mind mapping technique by using Miro Mind Map application. It can be seen from the result of the test which showed that the students' mean score of pre-test was 66.81 increases to 76.89 in post-test, and also the result of hypothesis testing on Paired Sample T-test that showed the significant value was 0.000 which means it lower than 0.05. In other words, it can be said that the implementation of mind mapping technique by using Miro Mind Map Application successfully improved the students reading comprehension ability on narrative text.

In order to answer the second research question, the researcher also analyzed the improvement of reading aspects in pre-test and post-test. All of the aspects of reading comprehension were increased. It was proven from the students' pre-test and post-test scores of the increase in students' reading comprehension ability aspects: 14% for main idea, 12% for detail information, 13% for inferences, 3% for references, and 9% for vocabulary. Briefly, it can be concluded that the aspect of reading comprehension that improved the most after being taught by using mind mapping technique is main idea aspect.

Moreover, the responses the open-ended questionnaire indicated that the students find that Miro Mind Map is useful in helping them comprehending English text and discussing some ideas writing English text with their friends. Lastly, It can be

assumed that, applying mind mapping technique by using Miro Mind Map application is an effective strategy to help students to improve students' reading comprehension ability.

5.2. Suggestions

Based on the findings of the conducted research that has been concluded, there are some suggestions for other researchers and teachers who can develop and improve the educational field as follows:

1. The researcher suggested to English teachers to apply mind mapping technique in reading comprehension. The teacher also shout brainstorm before asking the student to make mind mapping. It is important to make students understand with the things that they have to do with the text and what kind of information that they need to find from the text.
2. It is suggested to the teacher to use technology in teaching and learning process. By optimizing the technology, the students will realize that they can learn flexibly by using the technology they currently have. Therefore, it is highly suggested to the English teachers in SMAN 2 Bandar Lampung to use online mind mapping like Miro Mind Map application in teaching reading comprehension because online mind mapping develops students' creativity, helps them in mapping the story easily, and attracts students' attention in teaching and learning process.
3. There is an aspect of reading which the students' have difficulty to understand, such as finding main idea. This aspect actually improved very well. Meanwhile this aspect got a few correct answers from the students. Therefore, the researcher suggested to the teacher to pay more attention in this aspect while teaching reading.

4. This study was conducted in the Senior High School level. Therefore, the further research was suggested to try to implement mind mapping technique in different level of students like Junior High School. In addition, this study was employed narrative text as media to measure the improvement of students' reading comprehension ability after the implementation of mind mapping technique by using Miro Mind Map application. Further researchers can try to apply mind mapping with other kinds of texts such as analytical exposition text, descriptive text, and recount text for instances. Also the further researchers can utilize other online mind map applications for applying mind mapping techniques in their research.

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