

CHAPTER II

REVIEW RELATED LITERATURE

This chapter presents the review of the literature. It covers six major sections; (1) reading comprehension, (2) teaching reading in EFL classes, (3) level of reading comprehension, (4) factors affecting reading comprehension (5) reading motivation, (6) how to measure reading motivation, (7) Smartphone E-Mind Mapping (8) The step of mind mapping in reading class, (9) the procedure of teaching reading by using smartphone E-Mind Mapping, (10) The review of previous study

2.1. Reading Comprehension

Reading is one of the language skills which play an important role in communication. Burns et.al (1996) mentioned some importance of reading namely; reading is involved in every aspect of life, reading is fun, reading is for getting knowledge. Moreover, Belk (2000) stated that reading is the basic for children's future learning. From these perspectives, it can be said that reading and human's life are interrelated. Reading comprehension can be defined as the process of simultaneously extracting and constructing meaning through interaction and involvement with written language (Snow: 2002). In this case, readers should not only be able to read the printed words but also build meaning by relating words. Further Djiwandono (2008) explained that reading belongs to

receptive passive language skill. Readers are the receivers of explicit and implicit written information.

Reading means understanding the meaning of printed or written words (Hornby, 1990). Meanwhile Rubin (1982) stated that reading is to get the meaning from the printed page. Harris and Sipay (1980) stated that reading is interpreting printed or written verbal symbol meaningfully. This is in line with Nakamoto, Lindsey & Manis in Safaa M. Abdelhalim (2017) stated that reading comprehension is an active cognitive process involving reasoning to construct meaning from a written text and understanding it effectively and comprehensively. Meanwhile, Harrison and Dolan (1979:112) stated that reading is not only a single skill but a set of related skills. The first skill is word recognition and mastery of vocabulary. The second one is the ability to see in the material and the structure of the sentences, paragraphs, and longer passages that form the whole units. The next skills are the skill to follow the thought development in the result of presenting and making any relevant deductions, inferences or critical assessment. The last is the ability to concentrate on the reading task.

Reading is a recognition and comprehension of written symbols which are affected by readers' perceptual skills, decoding skills, experiences, language backgrounds, mind sets and reasoning abilities as they anticipate meaning on the basis of what has been read (Harris & Sipay, 1980:10). This definition shows that reading is a complex activity. Reading involves two aspects: linguistic competence and background knowledge. Furthermore, Burns et al

(1996) explained that reading process consist three types theory, namely sub skill theory, interactive theory, and transactional theory. Sub skill theory relates with the automatization and fluency of reading. Automatization means the readers' ability in recognizing the words in isolation automatically.

While interactive reading theory is the combination of two types of process – top down (reader based) and bottom up (text- based) in continuous interaction (Denchat:1991). In top down process, readers usually have their own prediction about the topic of the text. Then they confirm the existence of their prediction in the text through the process of reading. On the other hand, Gebhard (2000) stated in bottom up process, readers usually examines the text by looking at letters or words, and then moves to the phrases and sentences in the text. Based on what they examine the text, they construct the meaning of words or sentences. The last theory is transactional theory. In transactional theory, readers get the meaning by conducting transaction with the text.

According to Alyousef (2005:144) reading is the interactive process between a reader and a text which leads to automaticity or reading fluency. Grabe (1991:377) stated that reading is an active process of comprehending text where students need to be taught strategies to read more efficiently, for example, guess from context, define expectations, make inferences, skim ahead to fill in the context, etc. Meanwhile, Grellet (1981:3) argued that understanding a written text means extracting the required information from text as efficiently as possible.

In line with the above concept, Smith and Robinson (1980) state that reading is the active effort, on the part of the reader, to understand a writer's

message. The reader interacts with, and tries to construct, what the writer wants to communicate. Therefore, reading comprehension means understanding, evaluating, utilizing information and ideas gained through interaction between the reader and the writer. Meanwhile, Wardhaugh in Baradja (1990) states that when a reader reads a text, he is trying to discover the meaning of what he is reading by using the visual clues of spelling, his knowledge of probabilities of occurrence, his contextual- pragmatic knowledge, and his syntactic and semantic competence to give a meaningful interpretation to the text.

Based on the definition above, it can be concluded that reading comprehension means a process which involves activity in constructing meaning among the parts of the text, between the text and personal experience. It is the ability to understand the new information in light of what the reader already knows. Besides, reading comprehension is the process of remembering that involves the process of selecting and providing an exact shape of schema. In other words, schemata are the widest organizational files used to keep information which plays a basic role in the reading process.

2.2. Teaching Reading in EFL/ESL classroom

The function of teaching reading is to prepare the students to read informational material (Dixon & Dixon: 1983). The focus is helping students to get the skills needed in the effort of constructing meaning. The teachers have an important role to help students getting the skill needed from bringing experience

to written material. The teachers should help their students to use the skills of reading.

The teacher should own a lot of knowledge about reading process, the sequential development of reading skill, the material, and the characteristics of the student. Harmer (2000) mentions some principles of effective teaching reading. First, reading is not a passive skill. It means that the students should understand what is read before reading such as understanding the meaning of words and arguments. Second, the students need to be engaged into what they are reading. In this case, the teacher needs to give interesting reading text. Third, the students should be motivated to give respond to the content of reading text. Fourth, prediction is the main factor in reading. It implies that the students should have in mind the expectation of what they would find in reading and they should set up the purpose when the active process of reading is ready to begin. The last, the task should be matched with the topic. In short, the teacher needs to choose good reading tasks such as the appropriate forms of questions.

Burns, et al. (1996:36) explains the other principles of learning and teaching reading that should be considered in reading class. First principle is that reading is a complex act with many factors that must be considered. Here, the teacher should understand all aspects of reading process. By knowing all the aspect, the teachers are able to plan and prepare reading instruction, and organize teaching activity. It is argued that designing the reading instruction is not an easy task due to the complex and complicated factors involved in reading, particularly in EFL (Hudson, 2007). That's why, the teacher should make any kinds of

preparation before reading instruction in the class. In other word, the teachers have to make the lesson plan well after knowing all the aspects. Second, reading involves construction of meaning represented by the printed symbols. According to this principle, the readers construct meaning of the text they read. In constructing the meaning, the readers use their prior knowledge and information in the text.

The third principle is there is no one correct way to teach reading. It requires the teachers to realize that each student has different way of learning. There are some types of learning style owned by the students; visual, kinesthetic, and auditory. That's why the teachers should differentiate instruction fit the different needs of students. Fourth, learning to read is continuing process. it means that students learn to read over long period of time, acquiring more advanced reading skill after they master pre-requite skills. Even after they have been introduced to all reading skills, the process of refinement continues.

The next principle is that word recognition strategies should be taught to the students so that they are able to unlock the pronunciation and meanings of unfamiliar words independently. This principle implies that the students can't memorize all the words they find in the text. That's why the students need to learn techniques for figuring out unfamiliar words; otherwise, they can't understand the text when they don't get any help from the teachers and friends. Sixth principle, each student's reading ability should be assessed by the teacher and the result is used as the basis for planning instruction. It means that the different ability owned by the students should be considered in planning the instruction.

The seventh principle is that reading and other language skill are closely interrelated. In this case, reading is closely related to other language skills such as speaking, listening and writing. The eight principle is the importance of using complete literature selection in reading course. It means that the teacher should give chances for the students to experience in reading whole stories and books to develop their reading skills.

Ninth, reading is an integral part of all content area instruction within the educational program in the native language setting. In this case, the teacher should pay attention on the relationship between reading and other subjects within the curriculum. The success and failure to master knowledge of science, mathematics and other subjects depend on the ability of reading. The tenth point is that reading can be enjoyable pursuit. This means the teacher must make the students realize that reading is entertaining as well as informative. It can be done by providing interesting material, setting appropriate time of pleasure reading and good books of appropriate level and interest.

Eleventh, reading should be taught in a way that allows each child to experience success. It means that the teacher should give the students instruction at their own level achievement. The teacher should make adjustment so that the instruction is congruent with the students' literacy level. The last principle is that self-direction and self-monitoring of reading is important. In this case, the students must be given more chances to direct their own reading, in making decision about how to approach particular passages, what reading speed is appropriate, and why they are reading the passage.

In short, the objective of reading instruction is to develop attitudes, abilities, and skills to get information, to foster, to react ideas and to develop the students' idea. Finally, the students not only comprehend the text well but also get pleasure by reading.

2.3. Levels of Reading Comprehension

There are three levels of reading comprehension proposed by Alexander (1988). The levels are literal comprehension, inferential comprehension and evaluative comprehension. Literal comprehension is the basic level of comprehension in which the readers get the information which is stated explicitly in the text. Inferential comprehension means readers must find the implicit or intended meaning of the text. In this case, the readers must recognize the relationship among the main ideas and supporting details and use them to make inferences and draw conclusion. While evaluative comprehension is the readers' ability to compare information and ideas in the text with their prior knowledge.

Burns, et al (1996) propose different classification of reading comprehension level. They divide it into four categories. They are literal, interpretative, critical and creative reading. According to Burns, et.al (1996) literal comprehension is to get information directly stated in the passage. In other word, it is the ability to understand the explicit ideas stated in the text. This is in line with Jack (1999) who states that literal comprehension is reading in order to understand, remember, or recall the information explicitly in the text. Even though

this is the lowest level, it is still important. It is the prerequisite for higher level comprehension.

According Tunner (1998) literal comprehension is divided into five levels. They are recognition, identification, recalling, analysis and organization. Recognition means ability to recognize and identify main ideas, supporting ideas, details, vocabulary meaning, cause effect relationships, similarities and comparability of language stated in the text. Recognition also involves ability to identify plot, structure of the selection, showing the figurative language, stating the direct statement of opinions, character traits, sequence, setting, and mood that area explicitly stated in the selection.

Recall is the ability to remember or mention the information explicitly in the text. Ability to recall involves ability to remember the main ideas, sequences, details and plot and information, character traits, sequences, setting and mood, vocabulary meaning, cause effect relationships. The key words used to elicit this ability are to say, mention, and list. Meanwhile, Analysis and recognition are ability to analyze and organize the information explicitly in text. These abilities consist of summarizing, synthesizing, reducing ideas, transferring, restating, outlining, classifying and responding to questions.

Inferential comprehension is reading to find information which is not stated explicitly in the text. According to Tollefson (1989) inferential comprehension requires the readers to use information explicitly stated in the text along with personal experience and prior knowledge in order to conjuncture and hypothesis. In understanding the text inferentially, a reader tries to understand the

information that is explicitly stated in the text. Here, the reader uses his explicit important information in the text, his schemata about the text, and personal experiences to make prediction and hypothesis. Burns, et al. (1996) stated that inferential comprehension is an interpretative comprehension. Interpretative reading is the process of deriving ideas that are limited rather than directly stated. Interpretative reading consists of (a) inferring main ideas of passages that are not directly stated, inferring cause-effect relationship when it is not directly stated, (b) inferring reference of pronouns, adverbs, and omitted words, and (c) detecting the mood of passage.

Critical or evaluative comprehension is reading in order to compare information in a passage with the readers' knowledge and values. Burns, et al. (1996) stated that evaluation is as the critical reading. In this case, critical reading is evaluating written material by comparing the ideas discovered in the material with known standards and drawing conclusion about accuracy, timeliness and appropriateness. In critical reading, readers must be active, questioning, searching for facts, and suspending judgments. As stated by Turner (1989) that critical reading involves ability to compare previous experiences with elements in the new material such as content, style, expression, information and ideas, opinions, or values of an author. It also involves distinguishing fantasy from reality, distinguishing fact from opinion, determining relevancy, and judging appropriateness, worthiness, agreement, or acceptability.

In conclusion, there are three levels of reading comprehension. The first is literal comprehension. It is the process of understanding of what is written or

stated in the text through understanding words, sentence, and paragraph in the text interpretative comprehension is the process of understanding information which is not stated explicitly in the text by drawing conclusion, understanding cause effect relationship and making comparison. Evaluative comprehension is an understanding the text which involves analysis and evaluative activity of reader. The reader can compare ideas, criticizes, and gives judgment of writer's idea based on the competence and background knowledge.

Related to this study as well as the curriculum, reading comprehension focuses on two levels above that is literal and inferential comprehension. Based on the curriculum, the objective of teaching English in high school is that the students are able to have communication skills in three kinds of text such as interpersonal, transactional and functional orally or in written.

2.4. Factors Affecting Reading Comprehension

Reading is an interactive activity which requires the readers' prior knowledge to work with the text in order to interpret the writer's message. According to Snow (2002:11) to get the content of the text, there are three factors affecting comprehension namely reader, text, and activity.

2.4.1. Reader

Concerning with reader, the first category is psychological factor such as attitude, interest, motivation, and habit (Alexander: 1989). These factors interrelated each other in the sense that personal attitude of reader towards certain

reading topic determines his/ her in reading it. Positive attitude results in good interest and negative attitude results poor interest. When he has interest in reading, finally he will get reading comprehension.

The second category is cognitive ability and general intellectual skills. These factors encompass the ability to decode, to recognize inductive sequence of ideas leading to conclusion, to apply a principle deductively to a new situation and to recognize cause effect, comparison, contrast, and other idea relationship related to the level of intellectual powers.

In addition, memory has an important role in reading comprehension (Alexander, 1988 as cited by Safarudin, 2004). The reader should recall what she/he reads as well as his/ her own experiences and other relevant reading; altogether, the factors result in comprehension, expanding the meaning the reader is able to take from what she/ he reads.

Moreover, Vacca and Vacca (1999) as cited by Sahriadi (2004) state that reader's background knowledge also affects comprehension. It can influence comprehension in four different ways: by affecting the way information is organized and stored in memory, by affecting the type of information brought when reading about particular topic, by affecting the association made due to personal experiences and background knowledge, and by affecting the language or vocabulary and syntactic structure also affects comprehension in reading. Therefore, unfamiliarity with the words and difficulty of structures presented by the writers can obstruct the reader's comprehension. Consequently, the reader unfamiliarity with the concept discussed in the text result in poor comprehension.

Alexander (1988) as cited by Safarudin (2004) states that comprehension in reading is also affected by reader's reading strategy, reading rate, and concentration. Different reading task and different reading selection require different reading strategy and different reading rate. Concentration during reading is also important.

2.4.2. The text

The text can also affect comprehension. Comprehension the text is determined by the difficulty of understanding vocabulary items, length and material difficulty of text and the cohesiveness of the text. In relation to this, Alexander (1989) as cited by Safarudin (2004) explains that the length and material difficulty of the text should be relevant to students' age, reading ability, and general intellectual abilities. If it is too easy, students will learn nothing and conversely, if it is too difficult, students will lack of comprehension. Cohesion is a sort of intellectual "glue" that gives a piece of reading material unity and power in the mind of reader. Among the good qualities contribution of cohesion are content organization, paragraph and sentence structure, idea development, and consistency of vocabulary used.

2.4.3. The Activity

Snow (2002) says that reading is not a vacuum activity. It means that reading is performed for a purpose, which can be either external imposed such as completing class assignments or internally generated like a wanting a particular

part of the reading content. The reader's purpose can be influenced by motivational variables such as the reader's interest and prior knowledge. For instance, if one is asked to read a paragraph for making a summary, he will engage the reading activity in order to complete the assignment although he is not interested in the content of reading material. It is such a conflict which may lead the students or readers to complete comprehension.

In sum up, comprehension is influenced by three factors, namely readers, text, and activity. Reader will get better comprehension or poor comprehension depending on their attitude. Positive attitude results in better comprehension, conversely, bad attitude results in poor comprehension. The text should be suitable with students' ability. Moreover, the students' activity depends on their purpose and motivation of reading.

2.5. Reading Motivation

Students' motivation is the component which leads students' attitude towards learning. Some experts propose the theories about motivation. Based on behaviorist view, motivation is an external stimuli and reinforcement. This theory explains that the students' environment and the teacher have important roles in affecting the students' motivation. However, cognitivists consider motivation as an internal factor. That's why those who have intrinsic motivation are easily driven to act without any external pushes. Their aim is to get satisfaction and pleasure out of their actions. Meanwhile achievement motivation focuses on the result of the action done. The students might have a sense of achievement or

develop a fear of failure. Another theory is humanistic approach. This theory mentioned that the needs of the self are the basic foundation of motivation. The assumption underlying the theory is that when the basic needs are not met, the learners could not be motivated to meet higher level needs such as self-esteem and self-actualization. The last one is social cognition theory of motivation. This theory discussed motivation from two views; social and cognitive side. Social cognition theory explained about the students' beliefs in their own competencies, their own goal setting, monitoring themselves and controlling their own learning through interaction with others.

Motivation is described as a state that energizes, directs and sustains behavior. Motivation involves goals and requires activity. Goals provide the impetus for and the direction of action, while action entails effort: persistence in order to sustain an activity for a long period of time. According to Mc.Donald (2002) motivation is the change of energy inside the individual marked by the emergence of affective and reaction to reach the goals. Motivation is also impetus from the individuals which can be the motor activator. There are two factors which can affect motivation. They are external factor such environment, and internal factor such as character, education level, experience, future hopes.

According to Gardner (1985) motivation is the combination of effort and desire to achieve the goal of learning the language as well as favorable attitude towards learning the language. In other words, motivation in learning the language is regarded as the extent to which the individual works to learn language because of a desire to do so and the satisfaction experienced in their learning.

Motivation is an influencing factor to achieve special goal. Ryan and Deci (2000) stated that being motivated means to progress or to be in motion to do something. Motivation drives action within an individual to establish and manage behavior, excitement, interest, eagerness, and looking forward to learning are the main elements of motivation. Every individual has different levels and types of motivation. In other words, individual's motivation sorts can be various (Crump, 1995).

Reading motivation is the interest or desire to read for different purpose (Hermosa,2002). Further she explained that positive reinforcements had beneficial impacts towards motivation in reading. Therefore, the teachers need to make integrative reading activities. According to Baker, Dreher, and Gutrie (2000), teachers ought to supply enough and interesting reading materials, create a sharing community of learners, make a comfortable context for learning, identify specific students' strengths and weakness, provide ample time for reading, associate with other teachers and administrators for general reading program, and learn the strategies for integration and effective learning.

Motivation is affected by many factors involving trying, desire, and pleasure with the learning situation. Carreira (2006) divided motivation into integrative, instrumental, intrinsic and extrinsic motivation. Different approaches to motivation can emphasize on cognitive behaviors (such as monitoring and strategy use), non-cognitive aspects (such as perceptions, beliefs, and attitude), or both.

Motivation is needed in learning English since it becomes one of factors determining the success of learning. Although motivation is not the only key to be success in learning, the students who have higher motivation will be easier to perform better than those who have lower motivation. According to Munarsih (2013) learners can get motivation from several ways. There is a possible self that involve people's vision of their likely or hope for. Dorney (2014) stated that possible selves are more than long term aim or future plan because they involve actual image and senses.

Guthrie and Cadington (2010) stated that reading motivation is the enjoyment and internal derives of reading activity. When someone finds feeling of enjoyment in reading, they will do reading activity regularly. It will give a good impact in reading skill. Reading motivation is affected by some factors such as interest, confidence and dedication (Guthrie and Cambria:2010).

In sum up, reading motivation means internal drive that boosts someone to read. It can come from internal and external factors. Reading motivation which comes from internal factor usually in the form of personal desire to find information, catch their goal even just pleasure. Meanwhile, reading motivation coming from external factors is caused by readers' social life such as finding information for passing educational program or job's demand.

2.6. How to measure reading motivation

Reading motivation can be measured by using some theories. One of them is stated by Wigfield and Guthrie (1995). They divided reading

motivation into three categories which entails eleven sub-components. The first category concerns an individual's sense of efficacy and beliefs about their ability, and consists of reading efficacy, Reading Challenge and Reading Work Avoidance. The notion of reading challenge refers to the satisfaction of understanding complicated ideas in a text whereas the notion of work avoidance refers to aspects of reading the informer dislike. The second category is derived from theories of intrinsic and extrinsic motivation, achievement goal orientation, and achievement values, and is further sub-categorized into two parts. The first is mostly concerned with intrinsic motivation, and the second with extrinsic motivation and performance goal orientation (Ames, 1992; Nicholls, Cheung, Lauer & Patachnick, 1989). The former entails reading curiosity, reading involvement, and the importance of reading. Reading curiosity refers to the desire to learn about a certain idea, and is related to work on reading interest (Renninger, 1992; Schiegele, 1996) whereas reading involvement refers to the enjoyment involved with reading different kinds of texts. On the other hand, the concept of the Importance of Reading or subjective task value is grounded in Wigfield and Eccles' (1992) work. The second sub-category includes Competition in Reading, Reading Recognition, and Reading for Grades. These three aspects are separate from one another in that Reading Competition is concerned with an individual's attempt to outperform others in reading, Reading Recognition is related with tangible forms of recognition such as teacher or peer approval, and Reading for Grades is associated mainly with the teacher's evaluation of learners'

reading performance. The last category consists of Social Reasons for Reading and Reading Compliance, based on the assumption that reading can be a social activity in a way that children often read in social

2.7.Smartphone E-Mind Mapping

A mind mapping is a diagram used to visually organize information where a central concept branches out with subtopics from center outwards. It is also hierarchical and shows relationships among pieces of the whole. It involves the whole brain during learning and it is a visual tool to generate ideas and develop concepts.

Mind mapping was developed by Tony Buzan as the strategy to assist students in taking note efficiently (Waycoccoff: 2005). Later, mind mapping has been developed as one of the effective techniques in language teaching and learning. It is because of its benefits in the process of organizing and visualizing a concept or subject. Further, Tribble (1996) stated that mind mapping refers to a technique used to generate and organize ideas which starts with a thought or word. It is also a common device in planning writing or spoken presentation.

Ambruster (1987) defines that mind mapping is analogous operation in which teachers select key content ideas and represent them in a visual display, making the idea relationship explicitly. Meanwhile Schunk (1991) defines that mind mapping is a learning tactic to identify important and specific ideas with its relationship. Carnine, Silbert and Kameenui (1990) state that mind map is the graphic organizers, graphic representation, structure overviews, allow the teacher

to pre-teach concepts stressing their relationship so that they can facilitate initial attainment of the concepts and subsequent retention and retrieval of information. It also represents body of knowledge including the critical concepts, vocabulary, ideas, events, generalization and or facts using diagram or other type of visual display.

Novak (1985) explained the functions of mind mapping, namely to search what students have known, to learn how to learn, to express the concept, and to evaluate the learners' mastery of a certain material. In addition, the other functions of mind mapping are to develop an understanding of a body of knowledge, to explore new information and relationship, to access prior knowledge, to gather new knowledge and information, to share knowledge and information.

Mind map always begin with a core concept or idea which is represented with an image or single word in the center of a page. After the core concept has been chosen and visualized, then branches are created that represent single words which connect to the main concept. After that, sub-branches can be created that further develop ideas and concepts from the main branches. All of the ideas and concepts are connected to the overall theme of the whole mind map; this allows teacher to engage students with the bigger picture as well as the finer details. Through that students can understand the interconnectivity between ideas.

Karen (2002) suggests some steps of making mind mapping. The first is writing down the major idea or concept about the topic, identifying the most general, intermediate and specific concepts. Next, drawing the concept map: a)

concepts are circled, b) place the most general concept at the top, c) place intermediate concept below general concept, d) put specific concept in bottom. After that, lines are drawn between related concepts. The last is revising the map.

According to Jbeili (2013) Electronic mind map is one of the active learning strategies and it is effective tool that enhance memory, retrieval of information and generate new creative ideas as it works at the same steps of human mind which activate both human spheres and arrange information in a way helps the mind to read and remember information instead of linear thinking. Electronic mind map looks like free creative sketches based on specialized computerized programs and consists of branches radiating from the center lines using words and symbols, colors, and are used to represent relationships between ideas, information and require spontaneous thinking during creating. According to Stankovic Besic, Papic & Aleksic (2011) E-Mind Mapping is more attractive, faster to produce and more professional, therefore E-Mind Mapping strategy can be effective in inducing reading comprehension.

Electronic mind maps have six major components. They are lines, arrows, geometrical shapes, pictures, colors, and symbols. Line is used to connect ideas. Arrows are used to collect the common ideas and organize them from general to specific and vice versa. Geometrical shapes consist of square, circle, rectangle, etc. pictures are to represent words. One picture can represent many words. Colors can stimulate memory and enhance creativity. Symbols are as powerful as pictures to visualize concepts.

This study explores smartphone e- mind mapping. The researcher uses Mindoro Mind Mapping with some considerations: a) this application is very easy and intuitive, b) It works simultaneously, c) It doesn't need installation or maintenance, d) it is safe and secure, e) it give free trial and free limited use, f) it can be accessed anytime and anywhere. Mindomo is a revolutionary tool for brainstorming and mind mapping, this application requires students to explore information and decide what's important and how it connects with they already know. This application also provides presentation mode, native mobile apps, history of changes, web image search, video and audio notes, and mind map templates.

2.8. The Step of Smartphone E-Mind Mapping in Reading Class

According to Schunk (1991) mind mapping in reading can be done by several actions: reading carefully, understanding the text well, and then finding the main idea in sentence of paragraph in the text. Then, the next step is asking the students to map the text and giving guidance. Finally, the teacher asks the student to map the text without teacher's guidance. Meanwhile Noer (2009) proposes four steps of map. They are starting with main topic, writing sub topic, adding and connecting with sub topic, and repeating step 2 and 3 until getting perfect outline.

Zaid (1995) suggests another step of mind mapping in teaching reading in the classroom:

1. Introducing the topic. The teacher introduces the topic of the text by writing it inside the shape and display it on LCD.

2. Brain storming. The teacher asks the students to give ideas relating with the topic. It allows the students to use their background knowledge or experiences.
3. Categorization. The teacher encourages the students to see relationship among their ideas. Here, the reader uses the same colored employed in brain storming, and records them in nodes connected by lines leading from the central node.
4. Personalizing the map. The teacher gives the reading text. The reading must contain a lot of information about the topic. As they read, they decide what to or eliminate from the pre-assignment map.
5. Post-assignment synthesis. It is used to record the students' ideas from their personal maps on the pre-assignment.

Moreover, Denton and Vaughen (2007) suggest the procedure of mind mapping in helping the students comprehending the reading text. The step is as follows:

1. Before reading:

Show the mind map to the students and discuss students' prior knowledge. Use the map as tool to preview the text. Ask the students to make predictions about the text based on the graphic organizer.

2. During reading:

Ask the students fill in important information as they read the text. Confirm and/or modify students' predictions about the text.

3. After reading:

Ask students write a summary of the text using the mind map as a guide. Ask the students use the mapping to present the content orally to a peer, tutor, or

mentor. Ask the students write study guide or test questions based on the mapping.

2.9. The Procedure of Teaching Reading by Using Smartphone E-Mind Mapping

A. Pre- reading stage

1. The teacher explains the objectives of the lesson
2. The teacher gets the students' attention to the topic by asking some questions concerning the topic of the reading
3. The teacher shows mind mapping on LCD and puts the topic in it
4. The teacher stimulates the students' prior knowledge on the topic by brainstorming or predicting
5. The teacher and the students classify the information and add branch which shows the additional information
6. The teacher groups the students into some groups

B. Whilst- reading stage

1. The teacher asks the students to read the text in the worksheet
2. The teacher asks the students to discuss in group
3. The teacher asks the students to find generic structure of the text
4. The teacher asks the students to make mind mapping filled with generic structure of the text by using Mindomo Application in their smartphones
5. The teacher asks the students to answer some questions related to the reading comprehension activity

C. Post-reading stage

1. The teacher asks the students to present their mind mapping in front of the class
2. The teacher discusses the text with the students
3. The teacher gives some feedback

2.10. The review of previous study

In line with the use of mind mapping in language teaching, there have been some studies conducted previously. Here, the researcher presents several previous studies conducted by several researchers.

Sasiporn and Maytas (2018) conducted a research on SMU in Kendari. The research was experimental research design. The result was that mind mapping was effective in increasing the students reading comprehension. Furthermore, mind mapping gives the effect on students' creative thinking and solving learning problem skills. In addition, Parikh (2016) conducted a research on 120 high school students. The study proved that mind mapping strategy was more effective than traditional method.

Another researches revealed that the use E-Mind Mapping was more effective than traditional method. One of them was conducted by Mohaidat (2018). In his study he stated that using electronic mind mapping had led to higher comprehension among the experimental group than the control group who used the traditional method. Moreover, Faqeeh (2018) explained that there is improvement of reading comprehension in experimental group due to using

computerized mind mapping. He stated that with electronic mind mapping in the class, reading instruction can really impact teaching and learning process through its ability to adapt to the learning styles of different students.

In addition, Dara (2009) explained that computerized mind mapping is more attractive, faster to produce and more professional therefore computerized mind mapping can be effective in inducing reading comprehension. Peng (2011) stated that the use computerized mind mapping improved reading comprehension by linking the functions of both brain hemispheres due to the fact that computerized mind map includes word processing, logical processing of language and mathematical analysis.

In other side, the use mind mapping also gives some contribution on the students' motivation. It was supported by the result of several studies. One is conducted by Rofi'I (2017). In his classroom action research, he revealed that the implementation of the mind mapping technique in teaching writing descriptive text could develop the ability and improve the motivation. Moreover, Brett.D.Jones, Chole Ruff and Jenifer Dee Snyder (2012) added that the students' motivation increase due to three kinds of mind map activities. They are direct instruction of each thinking map, creating a thinking map together done by the students and instructor, and the students create their own map using an assigned topic.

Some researchers mentioned above have conducted E-Mind Mapping on reading comprehension. However, the researches still use computer as the media. Now days, such kind of application can be explored by using smartphone. In

addition, most of them haven't tried to explore the use of the application on students' motivation, especially the low and high achieving students. To fill the gap, this study tries to investigate the effect of using smartphone E-Mind Mapping on the students' reading comprehension and motivation. The assumption is that now days teenagers are digitally native. They are always excited with everything related with information technology. So, by exploring smartphone on ELT classroom, hopefully it can be effective to improve the students' reading comprehension and motivation,

