II. LITERATURE REVIEW

This chapter discusses the literature review that was used in this study such as reading, aspect of reading process, concept of reading, reading comprehension, critical thinking, correlation between critical thinking and reading comprehension, relationship between critical thinking and reading achievement, factors that influence reading comprehension, advantages and disadvantages of critical thinking skill.

2.1. Reading

Reading is the process of looking at a series of written symbols and getting meaning from them. When people read, they use eyes to receive written symbols (letters, punctuation marks and spaces) and they use brain to convert them into word, sentences and paragraphs that communicate something to them. Reading plays an important role in developing knowledge, through reading students can absorb all the information, experience and ideas provided in books. Eskey (2002) defines that reading is the process of acquiring information from a written or printed text.

Afflerbach (2007: 12-13) says as quoted by Dewi (2013) that reading is a dynamic and complex process that involves skills, strategies, and prior knowledge. Reading is also an active process of predicting what is likely to come next. When someone
is reading, her brain processes the visual information from our eyes. It uses our critical thinking to make an image in our brain based on the text. By seeing the explanation above, it can be states that reading is one important skill the students should mastered in their language learning. Reading comprehension is very important for the students at Junior High School. According to Cooper (1986: 11), comprehension is a process in which a reader may construct meaning by interacting with the text. When reading, a reader should have knowledge about understanding the reading passage.

2.2. Types of Reading Process

Reading comprehension is a function of the nature of the text itself and of the extent to which the reader possesses, uses, and integrates pertinent background knowledge, or schemata. Schemata can be loosely defined as patterns which represent the way experience and knowledge are organized in the mind. Rumelhart (1980) put forward the concept of schema theory basically as a theory of how knowledge is mentally represented in the mind and used. Schema plays an important role in reading comprehension.

Psychologists have generally distinguished three kinds of processing: bottom-up model, top-down model and interactive model.

a. Bottom-up model of reading process holds the view that reading is a process of building symbols into words, words into sentences and sentences into the overall meaning, which reflects traditional attitudes toward reading. The point
of view of bottom-up model is the accuracy in understanding linguistic units is very significant and the lower-level processing skills in reading are important.

b. Top-down model emphasizes the use of readers’ real world knowledge in memory. Goodman (1967) said that “The goal of reading is constructing meaning in response to text; it requires interactive use of graphitic, syntactic, and semantic cues to construct meaning.” Readers do not read every word, but see through the text in order to be able to guess the meaning of the words or phrases. Top-down processing occurs as the system makes general predictions based on higher level and general schemata.

c. Interactive reading processing, both bottom-up and top-down processing should be occurring at all levels simultaneously (Rumelhart, 1980). Readers may employ bottom-up process as a base for comprehending a text and then turn to top-down process to execute high-level interpretation of the content of the text. Prediction of the content will be confirmed, revised or rejected through further data analysis. Interactive model of reading process is the combination of bottom-up and top-down models, and thus absorbs their merits and avoids the limitations to a great extent.

From the statements above, it can be concluded that in reading it is not enough for readers to understand a set of words in a sentence only. The reader also must be able to comprehend the reading text in order to get the message and information from what they have read.
2.3. Aspects of Reading

According to Nuttal (1985), there are five sort reading skills that should be mastered by reader to comprehend the text deeply, which as follows:

A. Identifying Main Idea

Determining idea is the skill to grasp and find the main point of the passage by summarizing the passage and look for repetition of idea or words (Kelly, R. 2004). The main idea is important to a reader because it tells about the topic the text.

B. Identifying Details

Identifying details are the fact and ideas that explain or prove the sentences or main idea. As stated by Sugeretto (2000: 12) that supporting details provide the reader with more information that help you see the big picture in a text. Supporting details give readers the answer to questions by might ask before they ask them.

C. Determining Inference

Inference is an educational guessor conclusion drawn based on logic of the passage. An inference is when the student take clues from a text to give their opinion based on a text what they read and teacher means. The teacher will not always tell us everything, so need to use inferences to understand and visualize the story. The student will make inference to help them understand what they are reading. As follow:
1. Think about the information the teacher is giving.

2. Think about how the topic of the text relates to your own life or the experiences of students you have had.

**D. Understanding Vocabulary**

The communication success or not it depends on the accurate vocabulary mastery. It means, to comprehend what the words mean is important in communication. When vocabulary mastery improves, comprehension will be deeper and apply letter sound correspondence to pretend words and matching it to a known word in the readers’ oral vocabulary. Linan et al. (2007:87) state that the role of vocabulary in reading is clearly understood: vocabulary knowledge, the understanding of word meanings and their use, contributes to reading comprehension and knowledge building.

**E. Reference**

One of the sub-process in sentence comprehension is referential representation; this process identifies the references that words in a sentence make to external words. Referential representation is aided by making referents easy to identify.

**2.4. Reading Comprehension**

According to Doyle (2004), reading comprehension is a progressive skill in attaching meaning at the same level and proceeding to attaching meaning to an entire reading selection. All comprehension revolves around the readers’ ability in finding and determining main idea and topic sentence from the text. It has been
stated by Clarke and Silberstain (1977) in Brown (2001: 299-300) that the readers understand what they read because they are able to take the stimulus beyond its graphic representation and assign its membership to an appropriate group of concepts already stored in their memories skill in reading depends on the efficient interaction between linguistics knowledge of the world.

According to Davenport (2007: 61) as quoted by Dewi (2013), common types of question found in reading comprehension are included as follow:

1. Identifying main idea, main point, author purpose or an alternate title for the passage.
2. Recognizing the tone of the passage or identifying the style.
3. Comprehending information directly stated in the passage (finding supporting detail).
4. Answering relational questions about the researcher’s opinion, even if not stated directly.
5. Recognizing the structural methodology employed to develop the passage, for example sequence, vocabulary, and represent pronoun (reference).
6. Extended limited information given by the researcher to a logical conclusion using inference (inference meaning).

From the types of question found in reading comprehension, the researcher is used reading test. This research is focused on critical thinking on the objective in this research by using critical thinking test.

Grabe & Stoller (2002) define comprehension as processing words, forming a representation of general main ideas and integrating it into a new understanding. It
suggests that comprehension is achieved when a reader successfully extracts the useful knowledge from a text and constructs it into a new understanding of their own. Furthermore Day and Park (2005) also propose several types of comprehension, as follows:

1. **Literal comprehension** is to have a straightforward understanding meaning of a text, such as vocabularies and facts, which is not explicated in that text.

2. **Inferential comprehension** is to conclude information from a text and build new information which is not explicitly stated on the text.

3. **Reorganization** is rearranging information from various parts of a text in order to get new information.

4. **Predictive comprehension** is integrating reader’s understanding of a text and their own knowledge about that text in order to determine what might happen next or after it is finished.

5. **Evaluative comprehension** is like inferential comprehension. The difference is that evaluative comprehension requires readers’ comprehensive judgment about some aspects in a text and ability to redevelop an understanding by using related issues.

6. **Appreciative or personal comprehension** is reading in order to gain an emotional or other value response from a text, and it demands reader to respond a text also with their feelings. From the definitions above, reading comprehension refers to the understanding of what has been read. Comprehension is a thinking process that depends not only on the comprehension skills but also on the readers’ experience and background knowledge.
2.5. Critical Thinking

Our ever-changing and challenging world requires students to go beyond the building of their knowledge; they need to develop their higher-order thinking skills, such as critical thinking, decision making, and problem solving (Profetto-McGrath, 2003; Riddell, 2007; Sezer, 2008).

Ku (2009) States, besides the ability to engage in cognitive skills, a critical thinker must also have a strong intention to recognize the importance of good thinking and have the initiative to seek better judgment.

Shirkhani & Fahim (2011) believe that language learners who have developed critical thinking skills are capable of doing activities of which other students may not be capable. Whereas earlier the teachers were at the center and the emphasis was put on what to teach, today’s education involves teaching how to think, and how learners can be a critical thinker.

Ozkan (2010) believes that critical thinking has a vital role in education. He stated that student who thinks critically can ask suitable questions, gather relevant information, creatively sort through this information, reason from this information and come to reliable conclusions about the world that enable one to act successfully. These students are more productive while using their second language. This study showed how to develop critical thinking skills of english learners through critical thinking activities.

In another study by Aizikovitsh-Udi and Amit (2011) promotion of critical thinking by teaching specially designed learning unit was investigated. The
The purpose of this study was encouraging critical thinking dispositions such as open-mindedness, truth-seeking, self confidence and maturity. The purpose of this study was to help composing new study programs and methods that can be based on the connection between critical thinking, creative thinking and the study of mathematics.

In another study by Marin and Halpern (2011) explicit and imbedded instructional modes were compared and critical thinking was assessed with Halpern Critical Thinking Assessment, which uses constructed response and multiple-choice response formats with everyday situations. In these two studies students who received explicit instruction showed better results than those in the imbedded instruction group. The results provided evidence that explicit instruction is an effective way for teaching critical thinking skills.

Shirkhani and Fahim (2011) investigated the improvements of critical thinking in foreign language learners. One factor that affects language learners’ critical thinking skills is the assessment methods used. Then, one of the ways in developing critical thinking is through managing the ways of assessing language learners’ ability.

Yang and Wu (2012) had a year long experimental study about the effect of digital storytelling (DST) for improving the academic achievement, critical thinking and learning motivation in students. The result of this study suggests that after twenty weeks of DST instruction, students showed improvement in English proficiency, critical thinking and learning motivation.
Fung and Howe (2012) emphasized the need for a learning environment that facilitates the practice of group work and the development of critical thinking. This article illustrated the importance of collaborative group work in the development of students’ critical thinking skills. The participation of teachers in group discussion can also initiate students’ dialogic interaction and consequently sharpen their critical thinking.

2.6. Correlation between Critical Thinking and Reading Comprehension

The correlation between critical thinking and reading is well established in the literature. For example, Norris and Phillips (1987) point out that reading is more than just saying what is on the page; it is thinking. Moreover, Beck (1989: 677) asserts there is no reading without reasoning”. Then, the researcher who recognize that reading involves thinking is Ruggiero (1984). He indicates that reading is reasoning. Yu-hui et al. (2010) stated clearly that reading is a thinking process to construct meaning.

Utilizing and combining schema theory with principles of critical thinking are one of the effective ways of enhancing the concept of reading comprehension (Norris and Phillips, 1987). They explain that critical thinking provides a means of explaining the ability to work out ambiguous text by generating alternative interpretations, considering them in light of experience and world knowledge, suspending decision until further information is available, and accepting alternative explanations. They conclude that critical thinking is the process which the reader uses to comprehend.
Schema theory provides powerful rationales for making links between students’ individual backgrounds, specific subject area knowledge, and critical thinking (Marzano et al., 1988 and Aloqaili, 2005c). According to Anderson (1994), there are six ways in which schemata function in thinking and in remembering text information. These six ways are:

1. Most new knowledge is gained by assimilating new information into existing structure; therefore, subject matter learning should build on prior knowledge whenever possible.

2. The students’ existing schemata help to allocate attention by focusing on what is pertinent and important in newly presented materials.

3. Schemata allow and direct the inferential elaboration of incoming information and experience.

4. Schemata allow orderly searches of memory by providing learners with a guide to the types of information that should be recalled.

5. Schemata facilitate the thinking skills of summarizing and editing.

6. Schemata permit inferential reconstruction when there are gaps in memory, which means that they help the learner generate hypotheses about missing information.

It is obvious, based on the previous six schemata functions, that prior knowledge plays a significant role regarding establishing connections between thinking critically and processing text information. This connection consequently leads the readers to reach the critical comprehension level.
In accordance with this notion (the relationship between prior knowledge and critical thinking), the literature reveals an agreement between researchers concerning the idea that an individual’s familiarity with the subject matter of a text plays an important part in the person’s performance on thinking tasks in that area (Glaser, 1984, Norris, 1985 and Sternberg and Baron, 1985). Knowledge and thinking skills can be viewed as interdependent (Nickerson et al., 1985). Comprehension itself has been seen as a critical thinking process. For instance, from a schema theory description of reading, comprehension can be conceptualized as a critical thinking act (Anderson and Pearson, 1984, Collins et al., 1980, Norris and Phillips, 1987, Rumelhart, 1980 and Aloaili, 2005d). Lewis (1991) argues that viewing reading as a critical thinking act becomes more tenable when some of the components of the reading process are accepted as automatic and necessary (automatic processes like word identification, derivation of meaning for most words, and assignment of importance), but not sufficient for constructing text understanding.

According to schema theory, the understanding and interpretation of the text are relative, which means that definitive conclusions cannot be reached. However, the readers should seek to arrive at a coherent and consistent understanding of the text being read. Lewis (1991: 421) stated the following: Schema theory posits that there is no absolute meaning on the page to be interpreted the same by all—that is, there is no “correct” comprehension. The goal of reading extended text is to arrive at a coherent representation of the text. This goal is achieved by readers’ weighing and comparing data from their schemata, the text, and the context in which the act occurs.
In order to enhance readers’ ability to achieve and practice comprehension as a critical thinking act, researchers have shown that the critical thinker uses his or her metacognitive knowledge and applies metacognitive strategies in a planful, purposeful way throughout the critical thinking process. French and Rhoder (1992: 191).

Gallo (1987) uses metacognitive strategies to develop critical thinking. She suggests that improved critical thinking requires developing the processes of observation, analysis, inference, and evaluation.

Broek and Kremer (2000) made connections between inference-making and critical thinking to promote reading comprehension. They presented the idea that inferential and reasoning skills are closely related to other readers’ characteristics and skills that affect text comprehension. Broek and Kremer (2000) state that: To be successful, readers must have the inferential and reasoning skills to establish meaningful connections between information in the text and relevant background knowledge. Central to these skills is knowing what constitutes an inferential or causal/logical relation and being able to recognize or construct one when needed in order to form a coherent mental representation of the text (pp. 11–12).

Ennis (1987) classified inference as critical thinking ability which includes three somewhat overlapping and interdependent kinds of inference: deductive inference, inductive inference, and inference to value judgments. According to Albrecht (1980), deduction is referred to as “top-down thinking” because the conclusion or result is known and the search is for specific evidence that led to that particular
conclusion. However, Clarke (1990) stated that pointed out that induction is often called “bottom-up thinking” because conclusions are drawn from specific instances, such as building on another unit the conclusion is reached.

Ennis (1987) presented subskills or abilities under each of these three kinds of inference: deductive inference, inductive inference, and inference to value judgments. For example, deductive inference includes (1) class logic, (2) conditional logic, and (3) interpretations of statements. Then, inductive inference involves are (1) generalizing, (2) inferring explanatory conclusions and hypotheses, and (3) giving reasonable assumptions. Moreover, inference to value judgments requires (1) background facts, (2) considering alternatives, and (3) balancing, weighing, and deciding.

Bizar and Hyde (1989) argued that inferential thinking contains two types: drawing inferences and drawing conclusion. Regarding the first one (drawing inferences), Bizar and Hyde (1989: 35) stated the following: Inferential thinking involves putting together individual bits of information to derive a greater meaning than what one might expect from merely focusing on the bits themselves. When reading a passage, we infer a great deal; that is, we derive much more meaning than a literal interpretation of words.

Another kind of inferential thinking, drawing a conclusion, involves taking pieces of information and synthesizing them into a meaningful idea which is greater than the separate pieces (Bizar and Hyde, 1989). They concluded that drawing inferences and conclusions depend heavily on students’ schemata. That is, if the
student does not have the requisite knowledge or accurate schemata, he or she will not be able to build meaning from the materials being read.

2.7. Relationship between Critical Thinking and Reading Achievement

Through critical thinking technique can be increase to the students’ reading achievement. According to Grabe (2009) reading as an interaction between reader and text and requires efficient knowledge to world and given topic also an efficient knowledge of the language. So, the students will be more active and comprehend when they read the text. After the students comprehend, they will show their knowledge by using their critical thinking such as arguments, opinion and identify the relevance and importance of ideas.

Critical thinking refers to think clearly and rationally. The method is used to help the students to understand the logical connections between ideas, identify construct and evaluate arguments, solve the problems systematically and identify the relevance and importance of ideas. The relationship between critical thinking and reading achievement because critical thinking has many advantages on reading achievement. The advantages of critical thinking on reading achievement is to explain goals and purposes, clarify the questions and answer and also solve the problem, gather and organize information the data, identify assumptions, and consider implications and consequences.
2.8. Factors That Influence Reading Comprehension

Mc Wrother (1989: 345-349) classified the factors that influence comprehension into three general categories: text characteristic, reader characteristic, and reader’s purpose. Text characteristics are features of the printed material that influence how easy or difficult it is to read. The skills and traits of the person that determine or affect rate and comprehension are called reader characteristics. Reader’s purpose refers to reason the material is read and the level of comprehension needed.

1. Text Characteristics

The way the writes write, the words they use, how they put words together, and how clearly they can express ideas all contribute to how it is to read a passage.

Sentence length: A passage with very long sentences can make reading more difficult and will force a reader to read more slowly, notice how the length of sentence seems to rise this problem:

Caught in global recessions and inflation, forced by Washington to revalue their currency in a direction injurious to their prosperity, and once again conscious of their vulnerability to foreign economic decisions, the Japanese also saw domestic capital flow out to lucrative investment opportunities elsewhere (Jones, 1985: 99).

Vocabulary: A passage with difficult or unfamiliar vocabulary can have the same effect understanding becomes difficult or impossible. Try the following passage:

The literal-cynical criminologist is skeptical about the perfect of crime control efforts, and locates criminogenic forces in the basic structure and institution of society, but he still retains a belief in the continued viability of American society in its present form (Barlow, 1984: 26).
Ideas and Concepts: In addition to these mechanical features of language, ideas, and concepts also affect difficult. Even written in fairly simple language, an article may discuss complicated or follow a sophisticated line of reasoning. In the following sample shows that, although the language used is clear and direct, a difficult concept is discussed.

*The whole universe may have an overall curvature. If it is negatively curved, it is open-ended and extends without limit; if it is positively curved, it closes in on self. The surface of the earth, for example, forms a closed curvature; so that if you travel a long a geodesic, you come back to your starting point. Similarly, if the universe were positively curved, it would be closed; if the universe were positively curved, it would be closed; so that if could look infinitely into space through an ideal telescope, you would see the back of your own head! This is assuming that you waited a long enough time or that light traveled infinitely fast (Hewitt, 1985: 587).*

2. Readers’ Characteristics

A second set of factors that influence how fast reader are able to read and how well they set can comprehend is related to the readers themselves. Here is only a partial list of the many things about redears that affect reading comprehension.

Physical State: How the redears feel physically affects both rate and comprehension. If they are extremely tired, or just recovering from they will not be able to perform at their peak level. Concentration may become are problems, or they may not able to force themselves to stay awake. If readers are hungry, or if the room is extremelyhot or cold, their reading performance may also be affected.

State of Mind: Just as physical state can affect readingcomprehension, so mental or emotional sate. If the readers are depressed or worried, they may not be able to
concentrate easily. If they are exited or anxious something, their mental state may not be conducive effective reading.

**Interest in the Material:** Readers’ interest in what they reading influences how fast and with what degree of comprehension they read. If they are reading about a topic that interest them, they are likely to read faster and with more understanding than if they are reading about a subject in which they little or no interest.

**Background Knowledge:** The amount of knowledge the readers have about a topic partly determines how well they will be able to read about it. Suppose they are assigned to read a passage taken from the middle of an introductory botany textbook. If they have completed a course in botany, the passage will probably be understanding and easy enough to read. On the other hand, if they have never studied botany, the passage will be extremely difficult and confusing; it will be necessary to read very slowly, and they might have to stop to look up any unfamiliar terms and concepts.

**3. Readers’ Purpose**

Readers’ purpose for reading is an important factor related to comprehension. If they are reading a magazine article for enjoyment, their purpose is different from when they are reading a textbook chapter to prepare for an exam. If readers are paging through the newspaper, their purpose differs from the purpose when they are reading a poem for English literature class. There are four basic types of reading, ranging from an extremely slow analysis to an extremely rapid overview of the material. Each type is related a specific kind of material and has a define purpose. These are summarized in the table 1.
Table 1

<table>
<thead>
<tr>
<th>Method of Reading</th>
<th>Purpose in Reading</th>
<th>Types of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical</td>
<td>Detailed comprehension Analysis, evaluation, critique</td>
<td>Poetry, argumentative, Writing</td>
</tr>
<tr>
<td>Study reading</td>
<td>High comprehension and high recall</td>
<td>Textbooks, library Research</td>
</tr>
<tr>
<td>Causal reading</td>
<td>Moderate comprehension of Main ideas, entertainment</td>
<td>Novels, Newspapers, Magazine</td>
</tr>
<tr>
<td>Accelerated reading</td>
<td>Information Overview of material, rapid Location of specific fact</td>
<td>Reference, Material Magazine, Novels</td>
</tr>
</tbody>
</table>

2.9. The Advantages and Disadvantages of Critical Thinking Skill

In using Critical Thinking Skill, there must be the strengths and weaknesses that will be elaborated in the following section.

A. The Advantages of Critical Thinking (CT)

Using critical thinking, the students will gain the big many advantages. There are:

1. state and explain goals and purposes,
2. clarify the questions they need to answer and the problems they need to solve,
3. gather and organize information and data,
4. explicitly assess the meaning and significance of information you give them,
5. demonstrate that they understand concepts,
6. identify assumptions,
7. consider implications and consequences,
8. examine things from more than one point of view,
9. state what they say clearly,
10. test and check for accuracy,
11. stick to questions, issues, or problems; and not wander in their thinking,
12. express themselves precisely and exactly,
13. deal with complexities in problems and issues,
14. consider the point of view of others,
15. express their thinking logically.

The process of implementing critical thinking guides the students to be more critical and thinking logically about the text. Beside that, the students will be more confident to solve their problems and issues.

B. The Disadvantages of Critical Thinking (CT)

Even though critical thinking look as an effective role for students’ reading comprehension, it has some weaknesses. There are three weaknesses when perform critical thinking training in the class, that is first critical thinking need students’ creative to implement students’ critical thinking, the second is critical thinking need students to develop their knowledge with the using of thinking logically, and last, teacher is difficult to vary the roles based on the students’ comfort level.

2.10. Theoretical Assumption

Referring to what had been discussed, it is assumed that critical thinking skills are important factors that influence students’ success in mastering reading
comprehension and also have the positive effect of using critical thinking. By practicing and applying critical thinking, students become good readers, capable of handling any text across a curriculum.

Because critical thinking skill will develop students’ skills in their mind and change their thinking students’ habits. Students only through “thinking and thinking” without students know the aspects of critical thinking. When the students used critical thinking skill will polish their mind to comprehend the reading text better. Therefore, students must be master from the aspect of critical thinking such as; inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. It means that the students comprehend the reading text better.

Thus, the researcher investigated the significant correlation between students’ critical thinking and their reading comprehension ability at SMPN 3 Natar Lampung Selatan.

2.11. Hypothesis

Based on the frame of theory and the main theoretical assumption mentioned above, the researcher would like to formulate the hypothesis is “There is any significant correlation between students’ critical thinking and their reading comprehension ability at the third grade of SMPN 3 Natar Lampung Selatan.