CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter presents the description of relevant theory concern the correlation between intelligence quotient and students' reading achievement. They are; definition of intelligence, kinds of intelligence, definition of intelligence quotient, the theory of reading and comprehension, and also the previous study.

A. INTELLIGENCE

1. Definition

Intelligence refers to intellectual functioning. The definition of intelligence itself has been a major source of debate, and as Stemberg (1985) argues, there seems to be almost as many definitions of intelligence as there are experts asked to define it. Nevertheless, carroll (1993) defines intelligence as a type of mental ability that concerns the handling of (and reasoning about) information of various sorts.

Theories of intelligence are often based on psychometric data collected from individuals performing tasks perceived to measure intellectual functioning (Weinberg, 1989: 98). Generally speaking, these theories can be assigned to one of two camps, "Lumpers", or "Splitters" (Mayr, 1982:240). Lumper defined intelligence as a general, unified capacity for acquiring knowledge, reasoning and solving problems.

The developers of the first useful intelligence test were Binet and Simon (1911), lumpers, who saw intelligence as a "fundamental faculty",

judgment, practical sense, initiative, and adapting to circumstances (Weinberg, 1989:98). Spearman (1904), a lumper, coined the term *g factor* for general intelligence. Kakkar (2005) noted that intelligence, according to Spearman's *g*. though varying freely from individual to individual, remains the same for any one individual in respect of all abilities (Kakkar, 2005: 86). For many years, scientist argued that general intelligence "the *g factor*" could suffice empirically to represent an individual's many cognitive abilities in predicting occupational, educational, and life success (Jensen, 1998). Although, *g* is a plainly powerful and efficient index of mental ability, the idea that just one construct might have such universal importance has been hotly debated by Splitters.

Psychologists of the splitter persuasion hold that intelligence is composed of separate mental abilities that operate more or less independently. Researcher such as Thurstone (1938) and Guilford (1967) have opted for distinct mental capacities. Another splitter, Gardmer (1983), believed that intelligence is such more than IQ, and developed the theory of multiple intelligences by proposing eight different types of intelligence: linguistics, logical-mathematical, bodily kinesthetic, musical, visual spatial, intrapersonal, interpersonal, and naturalistic.

Furthermore, Stemberg (1985), proposed a triarchic theory of intelligence which is built on three cornerstones: (a) intelligence cannot be understood outside of a socio-cultural context: thus, the ability to adapt

to one's environment is no small part of intelligence, (b) intelligence is purposeful, goal-oriented, relevant behavior consisting of two general skills; the ability to deal with novel tasks and the ability to develop expertise that is, the ability to learn from experience to perform mental tasks effortlessly or automatically; and the last, (c) intelligence depends on acquiring information-processing skills and strategies (Weinberg, 1989:99).

In conclusion, intelligence is a set of abilities that allows an individual to learn, think abstractly, generalize, make solution and adapt successfully to new situation environment.

2. Kinds of intelligence

According to Gardner (1993:15), there are seven kinds of intelligence, namely (1) linguistics intelligence, (2) logical-mathematical, (3) spatial intelligence, (4) bodily-kinesthetic intelligence, (5) interpersonal intelligence, (6) intrapersonal intelligence, and the last (7) musical intelligence.

Moreover, Amstrong (2009:40) mentions that there is partial list of the kind of tests, that may relate to each intelligence, they are;

(a) linguistic including reading test, language tests, the verbal sections of intelligence and achievement tests,

(b) logical-mathematical including Piagetian assessments, math achievement tests, the reasoning sections of intelligence tests,

(c) spatial including visual memory and visual-motor tests, art aptitude tests, some performance items on intelligence tests,

(d) bodily-kinesthetic including manual dexterity tests, some motor subtests in neuropsychological batteries the President's Physical Fitness Tests,

(e) interpersonal including social maturity scales, sociograms, interpersonal projective tests,

(f) intrapersonal including self-concept assessments, projective tests, tests of emotional intelligence,

(g) Naturalist including test items, that includes questions about animals, plants, or natural settings.

Stemberg (1995: 912) has developed three component theories of intelligence that are analytical, creative, and practical intelligence. According to him, practical intelligence is not assessed in traditional IQ test, but it is easy to measure, and it allows people to adapt effectively to the demands of work and daily life.

Goleman (1999: 231) has found another kind of intelligence that he believes will influence people's life, for example emotional intelligence. This intelligence is related to people's emotion. Different from IQ, there is no standard measure to know someone's emotional intelligence or EQ. There is neither test nor levels for it. We have to know people personally to find whether he or she has good emotional intelligence or not, and it cannot be done in short term, it needs years of research to find out.

B. INTELLIGENCE QUOTIENT

Intelligence quotient is a number used to indicate a person's intelligence. A person's IQ is based on a comparison of his or her score on an intelligence test with the scores of others on the same test. According to Papalia and Olds (1988:134), intelligence quotient is nothing more than a mathematical score computed according to a formula derived by Binet, but a great mystique has ground up around it.

Other researcher has their explanation about IQ itself, like Ken Richardson explained "the assertion that measures human intelligence in any general sense, or that the source of variance in IQ scores is primarily cognitive in nature". Moreover, Hetherington (1993:65) stated that intelligence quotient is an index of intelligence that indicates how far below the mean the individual's intelligence scores lies, relative to that of children age in the standardization group. The formula of intelligence quotient was developed by Stern as cited in Dworetzky (1987);

$$IQ = \frac{100\ MA}{CA}$$

Which; IQ : Intelligence Quotient

MA : Mental Age

CA : Chronological Age

Mental age is derived by comparing a person's score with the average scores of others within different specific age group. Meanwhile, chronological age is actual age. 100 indicate an average score for a person's

age level. Since 1960, all IQ test have determined IQ by assigning a value of 100 to the average score of those tested. Then the testers assign values above and below average the score is. There are seven kinds of intelligence levels. The scale of IQ levels were suggested by Terman cited in Wilderdom (2004), as follows;

Table 2.1. Distribution of IQ levels

Over 140	Genius or near genius
120 – 140	Very superior intelligence
110 – 119	Superior intelligence
90 – 109	Normal or average intelligence
80 – 89	Dullness
70 – 79	Borderline deficiency
Under 70	Definite feeble – mindedness

C. READING

1. Definition

According to Bacon in his essay of studies "reading makes a full man", reading means to understand the meaning of printed word for example written symbols. Reading is an active process which consists of recognition and comprehension skill. Reading is an important activity in life with which one can update his/her knowledge. Reading skill is an important tool for academic success.

To develop the student's reading habit, the student's should have two types of reading, those ore intensive reading and extensive reading. Because of reading is most useful and important skill for people. This skill is more important than speaking and writing skill. Reading is a

source of joys. Good reading is that which provide him both pleasure and profit.

Reading is the most important activity in any language class. Reading is not only a source of information and pleasurable activity but also as a means of consolidating and extending one's knowledge of the language. Reading is very necessary to widen the mind and gain and understanding of the foreign culture. Therefore the learner of English mush know reading English. The education of a child is imperfect, unless he is supplied every things needed with the ability of reading. A.S. West comment: "Reading is a process of sight – second sense." W.S Gray notes that "reading is form of experience. Reading brings us in contact with the minds of great authors, with the written account of their experiences. Their recorded lines and the advancement made by them in various fields."

The process of reading may be broadly classified into three stages:

a. The first stage is 'the recognition stage', at this stage the learner simply recognizes the graphic counterparts of the phonological items.

b. The second stage is the 'structuring stage'. The learner sees the syntactic relationship of the items and understands the structural meaning of the syntactical units.

c. The third stage is the 'interpretation stage'. This is the highest level in the process of reading. The learner comprehends the significance of a word, a phrase, or a sentence in the overall context of the discards.

The types of reading that most known by people;

a. Intensive reading

Intensive reading is related to further progress in the language learning under the teacher's guidance. Intensive reading will provide a basis for explaining difficulties of structure and for extending knowledge of vocabulary and idiom.

b. Extensive reading

Material for extensive reading will be selected at a lower level of difficulty than that for intensive reading. The purpose of extensive reading will be to train the student to read directly and fluently in the target language for enjoyment, without the aid of the teacher.

c. Aloud reading

Reading aloud also play important role in teaching of English. Teacher should know that the training of reading aloud must be given at primary level because it is the base of words pronunciation.

d. Silent reading

Silent reading is a very important skill in teaching of English. This reading should be employed to increase reading ability among learners.

2. **Reading Process**

According to models of teaching reading can be divided into three categories, namely bottom-up models, top-down models and interactive models.

a. Bottom – up models typically consist of lower level reading process, students start with the fundamental basics of latter and sound recognition, which in turn allows for morpheme recognition followed by word, recognition, building up to the identification of grammatical structures, sentence, and the longer texts. One element of bottom – up approach to reading is that the pedagogy recommendations graded readers approach.

b. Top – down models, in this models the reader uses background knowledge, makes prediction, and searches the text to confirm or reject the prediction that are made. Goodman in Nunan (2003) stated that the strong advocate of top – down models of reading criticizes bottom – up models, because the readers becomes "word callers" who can read the words on the page but do not understood what they read.

c. Interactive models, that be accepted as the most comprehensive description of the reading process. This type combines element of bottom – up models and top – down models assuming that a pattern is synthesized based on information provides simultaneously from several knowledge source. An interactive approach in reading would include aspects of both intensive and extensive reading.

3. **Aspect of Reading**

According to Smith (1988:115) there are five aspects of reading, they are:

a. Main idea

Main idea is what the passage is mostly talking about. Usually the main idea of a paragraph is in the first or last few sentences of the paragraph. However, in some paragraph, can be anywhere in the paragraph. Longer reading passage can have one or more main idea. It is left to the reader to infer or reason out.

b. Specific information

Specific information is the more information about things, people or place. Specific information is the development of the main idea. Supporting details or specific information provide the reader with the information about main idea or the subject of the passage.

c. Vocabulary

Vocabulary is an important thing which is needed in reading. Beginning readers must use the word they hear orally to make sense of the words they see in print. To the vital importance of vocabulary for success in life, a large vocabulary is more specifically predictive and reflective of high levels of reading achievement.

d. Inference

Reading inferences are made when a reader uses literal information in a text and background knowledge to draw a conclusion. This background knowledge may come from the reader's world knowledge or from the text itself. The process of making inferences is vital to the reader's understanding of the text.

e. Reference

Reference is the symbolic relationship that a linguistic expression has with the concrete object or abstraction it represent. Reference is the relationship of one linguistic expression to another, in which one provides the information necessary to interpret the other.

D. COMPREHENSION

1. Definition

For recall the information about reading, Snow (2002:13) state that "reading as a process of simultaneously extracting and constructing and meaning through interaction and involvement with written language". According to Gunning (1992:188) "comprehension is constructive, interactive, process involving three factors; the reader, the text, and the context in which the text is read. In reading comprehension, as the reader, they should have knowledge to understand the text as like the main idea, detail of the text and others.

In comprehending a text, the reader interacts with the text related to the questioning of the text to prior experiences of construct meaning which can be found in the text. Skimming and scanning is the usual ways that be used by reader to understand the text. If the reader wants to get information generally, it calls skimming, whereas scanning for getting information specifically.

In many second or foreign language teaching situations, reading receive a special focus. There are a number of seasons for this. First,

many foreign language students often have reading as one of their most important goals. They want to be able to read for information and pleasure, for their carrier or for study purpose. Second, written texts serve various pedagogical purposes. Extensive exposure to linguistically comprehensible written texts can enhance the process of language acquisition.

Good reading text also provide good models for writing and provide opportunities to introduce new topics, to stimulate discussion and to study language (e.g. vocabulary, grammar, and idioms). Reading is a skill that has high value by students and the teacher alike (Ricards, 2002:273).

Hill state that teaching reading usually has at least two aspects: first, it can refer to teaching learners who are learning to read for the very first time. A second aspect of teaching reading is to teach learners who already have reading skills in their first language. They only learn to read once. Once they have learned how to read in one language, they do not learn how to read again in second/foreign language, but rather they learn how to transfer skills that very have already learned to the reading context in a new language

2. Reading Comprehension Skill

In teaching process, the teacher should have a technique to teach reading for their students to make student easier to study. According to Beatrice and Linda (1998:19) set out of reading comprehension skill have

eight techniques, they are scanning, previewing and predicting, building a powerful vocabulary, learning to look for the topic, understanding paragraph, finding the pattern of organization, making inferences, skimming.

a. Scanning

Brown (2002:308) defined that scanning is quickly searching to get the specific information about the text. Scanning exercise may ask the student to find the name of data, to find out definition of a key concept or to list a certain number of supporting detail of the main idea in the text. The purpose of scanning is to extract specific information without reading the whole of text.

b. Previewing and predicting

One way to enter a text is to preview titles, subtitles, visuals, and other text features and make a prediction about the topic and purpose of the text. The previewing and predicting process will lead students through a series of questions that will help them make an accurate prediction.

c. Building a powerful vocabulary

Building a powerful vocabulary means more than learning new words. It means learning new ways to think about words.

d. Learning to look for the topic

Reading is the process of looking at a series of written symbols and getting meaning from them.

e. Understanding paragraph

A paragraph is an organization of a group of sentences. These sentences develop one main idea. A paragraph should have three essential parts. There are topic sentence, supporting sentence, and a concluding sentence.

f. Learning to look for the topic

A topic is a world or phrase that tells what something is about. In the groups of words in the following examples, one of the words is the topic for all the other words.

g. Making inferences

Inferences are what we figure out based on an experience. Making inference is a central to reading comprehension.

h. Skimming

According to Brown (2001:308), "skimming consists of quickly running one's eyes across a whole text (such as an easy, article, or chapter) for its gist". Skimming gives advantages for any readers to know the main of views of the text fast. They do not need to read everything but only read a few important words.

E. PREVIOUS STUDY

Related to this study, there are some previous study which is similar or in line with this study. Here, the researcher presents two the studies. They are "The Correlation between Intelligence Quotient (IQ) and Students' English Learning Achievement in MAN Tulungagung 1 at the first grade in academic years 2013/2014" by Ni'matul Husnia and "The Correlation between Intelligence Quotient and Student's Achievement in Learning English at The First Year Students of SMPIT NURUL FIKRI DEPOK" by Ratna Angela Putri.

The first study was conducted by Ni'matul Husnia at MAN 1 Tulungagung. This research used correlation research design with the use of quantitative approach. The subject of the study was students of science class in the first grade which consisted of 30 students, but the researcher just took 29 students because one student could not follow the test. The researcher used test as instruments to get the data, the analyzed statically by using Person's Product Moment formula. The result of this study showed that there was positive correlation which means that if the students have a high IQ, they will high achievement in English.

The second study was conducted by Ratna Angela Putri at SMPIT NURUL FIKRI DEPOK. This research used correlation research design with the use of quantitative approach. The subject of the study was students from four classes in first grade which consist 55 students. There was no instrument in this research because the researcher just took those data from school as like

IQ score and the score of student's learning achievement. The data analyzed statically by using Person's Product Moment formula. The result of this study showed that there was negative correlation or there was low correlation.

From the different result of those studies, the researcher thought that, if there was contrast result, maybe there was mistake over the research. In this research, the researcher changed the variable to make sure the data from one skill in learning English. This research focuses on reading comprehension and use a test as the instrument.