CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter reviews the understanding theory used in the study concerning with the readability. To be more specific, this review of related literature discusses about: the Criteria of Good Texts, the Concept of Readability, and Approaches to Measure Readability, they are Judgment, Cloze Procedure, and Readability Formula.

A. The Criteria of Good Texts

Generally, materials for senior high school are presented in the textbook and it includes reading texts. Before going to discuss the criteria of good texts, it's important to find out the criteria of good textbook.

Rombepanjung (1988) clarifies that a good textbook must meet several requirements. First, it must be realistic which means that it can be used by both teachers and students and easily found in the market. Second, it must relevant to the age or level of the students and also the objectives that should be achieved. Third, it must be interesting to the students. And last, it must be in line with the approach used. So it is not easy to choose textbook which are suitable for the students.¹

¹ Nani R. Pratiwi, "Analyzing the Content of *Linked to the World* A Competence Based SMA Textbook for the First Grade Published by Yudhistira", Unpublished Thesis, (Surabaya: FBS UNESA, 2006), p. 3

In line with that, Orstein (1990) gave some characteristics of a good textbook.

It should be well organized, coherent, unified, relatively up-to-date, accurate, and relatively unbiased. Scholars, educators, and minority groups have scrutinized it. Its reading level and knowledge base match the developmental of their intended audience. Teacher's manuals, test items, accompany it, study guides, and activity guides.²

Beside, there are also criteria for choosing reading text for students. Based on Nuttal, there are three criteria of a good reading text for students, they are: (1) suitability of content, it means that the materials for the students are interesting, enjoyable, challenging, and appropriate for their goal in learning English, (2) exploitability, is a text that facilitates the achievement of certain language and content goals which is exploitable for instructional tasks and techniques; and it's interpretable with other skills(listening, speaking, and writing), (3) readability, the text with lexical and structural difficulty that will challenge the students.³

B. The Concept of Readability

Readability refers to the term that's used in three ways, they are: to indicate legitibility either handwriting or typography, ease of reading due to interest value of writing, ease of understanding or comprehension owing to the style of writing.⁴

² Nur Hafizah Nuning Wahyuni, op.cit., p. 7

³ Christine Nuttal, *Teaching Reading Skills in A Foreign Language*, (Macmillan Heinemann, 2000), New Edition, p. 170-174

⁴ Nur Hafizah Nuning Wahyuni, op.cit. p. 10

Related to this, Sutaria (1970) discusses readability in the boarder sense by stating that:

Readability is defined as the sum total of all elements in a piece of material that determines to what extent a group of reader can read easily and at a measurable speed, understanding and enjoy it. Applied to school books, it can be thought of as the presence of characteristic conductive to successful reading by the pupils for whom they are intended.⁵

In other words, readability means how much of the idea and the language presented in an extended reading text are comprehend by reader, that determines his or her success in reading.

Today, when the term readability is used, it is usually interpreted as comprehensibility. Sutaria, however, stresses that actually these two terms are not the same. According to her, readability is the quality that makes a book or a passage easy to read and enjoy, whereas comprehensibility is the quality that makes ideas understandable to a particular audience, so comprehensibility is an element of readability. Comprehensibility is related to the factor of readers, such as personality, attitudes, interest, motivation, habits, abilities, and experiential backgrounds, while readability is related to the factors on the text.⁶

The study of readability is an active research area. The early readability study which began in 1923 tends to concentrate on vocabulary aspects such as difficulty, diversity, and range. It was developed by Lively and Pressey based on

⁵ Ibid.

⁶ Ibid.

Torndike's book: The Teacher's Work Book.⁷ The formula, then, became the basis of the other formula which also concentrated on vocabulary aspects.

In subsequent period of readability studies, investigation was concentrated on a greater variety of factors, including vocabulary, syntax, interest, organization, etc. Lorge (1958), for example, proposed vocabulary load, sentence structure and style, and interest as the factors of readability. Lorge, then, chooses five variables to predict readability. They are: (1) the number of different word, (2) the percentage of uncommon words, (3) the relative number of personal pronouns, (4) the relative number of prepositional phrases, and (5) the average sentence length.⁸

Similarly, Sutaria mentions five factors that influence readability, namely: (1) content, (2) vocabulary, (3) structure, (4) typography, and (5) illustration.⁹ From the point of view of the content, a book is likely to be highly readable if the content lies within the field of the readers experience and if the topic interests them as long as familiar vocabulary and structure are used. The presence of too many new of difficult vocabulary may be difficult because the reader is not familiar with its form or its meaning. The sentence structure also contributes the difficulty level of a numerous infrequent or rare patterns and long sentences can affect the readability.

⁷ Ibid.

⁸ Ibid., p. 11

⁹ Ibid.

C. Approaches to Measure Readability

To know the measurement of some texts or passages is readable or not to a particular group of readers is not a simple work since it involves not only the text or passage but also the person who deals with it.

Related to this, Fry (1990) has opinion about how to measure readability. According to him, readability can be measured by means of subjective judgment, try out on a sample audience, and readability formula. However, he suggests that an objective measured like readability formula is used when it is important to determine the difficulty level of passages, although subjective judgment and try out should not be abandoned.¹⁰

Schuldz (1982) gives three ways to measure the readability of reading materials: instructor's judgment, comprehension testing by cloze procedure, and statistical readability formula.¹¹

From the explanation above, it can be concluded that the approaches to asses readability fall under three ways: a judgment, an objective test in this case cloze test, and readability formula. The elaboration of each approach is presented below.

¹⁰ Ibid.

¹¹ Ibid., p. 12

1. Judgment

Some studies explain that judgment of readability may or may not be reliable. This procedure of determine the readability depends on the subjectively on the evaluator and also without involving any formulas or tests.

Griese explains that in this procedure only the instructor, subjectively, is involved in determining the difficulty level of text without using formula. The instructor should decide whether the difficult text is appropriate for the students or not. If the text is judged by several teachers individually, the result of interpretation will vary from one to another, and the readability is questionable.¹²

Schuldz, then, gives principle on judging the text readability as follows:

- 1. the text simplicity, it is in term of vocabulary and structure
- the structure and the sequence of text, should be from the easy one to the more difficult
- 3. the length of text, the longer the text, the more difficult it is
- 4. the presence of interest stimulator such as exclamation, direct speech and rhetorical questions.¹³

 ¹² Arnold A.Griese., *Do You Read Me? Practical Approaches to Teaching Reading Comprehension*, (California: Goodyear Publishing Company, 1977), p. 168
 ¹³ Nur Hafizah Nuning Wahyuni, op.cit., p. 13

2. Cloze Procedure

The term cloze test is used in at least three different ways. The first and the most general definition is the systematic deletion of words from text, where systematic remains undefined. The second definition is to take the words and divide them into two types of system: either random deletion of words or rational deletion. The last definition is the deletion of every fifth word from text.¹⁴

From the explanation above, it can be concluded that cloze test is a kind of fill-in-the blank test. It is constructed by deleting words from a continuous text and replacing them with blanks to be filled by the testers with the appropriate words.

3. Readability Formula

According to Foulger, there are four formulas to measure the readability of reading texts, they are:

- a. The Dale-Chall Formula
- b. The Fry Graph Readability Formula
- c. SMOG Grading, and
- d. Reading Ease Formula (Flesch Readability Formula).¹⁵

These formulas will be discussed as below.

 ¹⁴ Paul C. Burns et al., *Teaching Reading in Today's Elementary Schools*, (Boston: Houghton Mifflin Company, 1984), Third Edition, p. 306
 ¹⁵ Davis Foulger, loc.cit.

a. The Dale-Chall Formula

The Dale-Chall formula is the result of the collaboration of two researchers who had been working on the problem of readability for several years prior to their successful joint venture; they are Edgar Dale and Jeanne Chall. This formula utilizes a number of specific rulers but it is based on just two counts; (1) average sentence length, and (2) percentage of unfamiliar words.¹⁶

According to Foulger, the pattern of the Dale-Chall formula is as follows:

Raw Score = 0.1579 PDW + 0.0496 ASL + 3.6365

Where **Raw Score** = Reading Grade of a reader who can answer one-half

of the test questions on the passage

PDW = Percentage of Difficult Words = Average Sentence Length in Words.¹⁷ ASL

The Dale-Chall raw score can be converted into corrected gradelevel score which range from approximately fourth and below grade to sixteenth grade (college graduate). To interpret the score, it's presented in the following table:

 ¹⁶ www.ReadabilityFormula.com
 ¹⁷ Davis Foulger, loc.cit.

RAW SCORE	ADJUSTED SCORE
4.9 and below	Grade 4 and below
5.0 to 5.9	Grade 5-6
6.0 to 6.9	Grade 7-8
7.0 to 7.9	Grade 9-10
8.0 to 8.9	Grade 11-12
9.0 to 9.9	Grade 13-15 (College)
10 and above	Grade 16 and above (College Graduate)

Table 2.1 Table of Dale-Chall Score

b. The Fry Graph Readability Formula

The Fry Graph Readability Formula is one of the most popular reading formulas and it is developed by Edward Fry. Fry developed readability test based on graph. This graph-based test determined readability through high school; it was validated with materials from primary and secondary schools and with results of other readability formulas.¹⁸

Expanded directions for working the fry graph readability formula

 Select three samples of 100-words passages randomly (eliminate the numbers from word count).

is:

¹⁸ www.ReadabilityFormula.com

- 2. Count the number of sentences in all three 100-word passages, estimating the fraction of the last sentence to the nearest $1/10^{\text{th}}$.
- 3. Count the number of syllables in all three 100-word passages. Make a table as follows:

	Number of sentences	Number of syllables
First 100 words		
Second 100 words		
Third 100 words		
Total		
Average		

- Enter the graph with average sentence length and number of syllables.
 Plot dot where the two lines intersect. Area where dot is plotted signifies the approximate reading grade level of the content.
- 5. If a great deal of variability is found in syllable count or sentence count, putting more samples into the average is desirable.¹⁹

To estimate reading ages by fry graph and the average of words, sentences and syllables, see the figure below.

¹⁹ Paul C. Burns et al., op.cit., p. 309



* Source: Edward Fry, "Fry's Readability Graph: Clarifications, Validity, and Extension to Level 17" *Journal of Reading* 21(December, 1977):249, as quoted by Burns et al. (1984:309).

c. SMOG Grading

Another formula delivering a general estimated of readability is SMOG Grading that's created by G. Harry McLaughlin; this formula is created as an improvement over other readability formulas. SMOG is an acronym for Simple Measure of Gobbledygook. Like other formulas, it samples words and sentences length.²⁰

The SMOG formula is considered appropriate for secondary age (4th grade to college level) readers, and the pattern is:

SMOG Grade = 3 + Square Root of Polysyllable Count

²⁰ www.ReadabilityFormula.com

The directions for working SMOG grading are:

- 1. Count 10 sentences in a row near the beginning of selection to be assessed, 10 in the middle, and 10 near the end.
- 2. In the 30 selected sentences, count every word of three or more syllables.
- 3. Estimate the square root of the number of the syllabic word counted. This is done by taking the square root of the nearest perfect square, for example, if the count is 95, the nearest perfect square is 100, if the count is 110, take the square root 100 rather than of 121.

d. Reading Ease Formula (Flesch Readability Formula)

Flesch readability formula is considered as one of the oldest and most accurate readability formulas. It was developed by Rudolph Flesch in 1948. This formula is a simple approach to assess the grade level of the reader. It's also one of the few accurate measures around that we can rely on without too much scrutiny.²¹

According to Foulger, the formula is considered easier to use, requiring no comparisons with word lists. The computations involve only the counting of syllables, words, and sentences. The formula is the best combination of simplicity and meaningfulness.²² Moreover, Flesch

²¹ Ibid.

²² Davis Foulger, loc.cit.

readability formula is the best used and appropriate on school text (to assess the difficulty of a reading passage written in English), whereas the other formulas are practical and can be used for other written form, for example newspaper, articles, and journalism.

Flesch readability formula measures length: the longer the words and sentences, the harder the passage to read. Like most of readability formulas, it involves the sampling of 100-word sample. Based on the Flesch, there are three directions to measure the readability. The first step is count the sentences. Second is count the words, hyphenated words, abbreviations, figure, symbols, and either combination are count as single words. Then measure with the Flesch readability formula and find the readability level.

The specific mathematical pattern for the formula is:

	RE	= 206.835 - (1.015 X ASL) - (84.6 X ASW)
Where	RE	= Readability Ease
	ASL	= Average Sentence Length (the number of words
		divided by the number of sentences)
	ASW	= Average Number of Syllables per Word (the number

Flesch sets directions to use the formula by giving series of steps:

of syllables divided by the number of words)

Step 1: Count the sentences

Count a sentence of full units of speech marked by a period, colon, semicolon, dash, question mark, or exclamation point as one sentence. Sometimes a 100-word mark falls in the middle of a sentence. Count such a sentence as one of those in the sample if the 100-word mark falls after more than half of words in it; otherwise disregarded.

Step 2: Count the words

Count each word in the up to 100. After the 100th word, put a mark. Count as one word for numbers, symbols, contractions, hyphenated words, abbreviations, figures, and their combination that are surrounded by one space. For example, count the following as a single word; 1980, \$ 17.2, e.g., C.O.D, hasn't, week-end.

Step 3: Count the number of syllables

Count the syllables as they are pronounced, for example: *asked* has one syllable, *seven* consists of two, *determined* has three, *pronunciation* consists of four syllables. If a word has two accepted pronunciations, use the one with fewer syllables. For example, the word *beloved* has two kinds of pronunciation (*bilavd* and *bilavId*), choose the fewer one. Count the number of syllables in symbols and figures according to the way they are normally pronounced, two syllables for \$ (*dollar*), three for C.O.D (*si-o-di*), and four for 1980 (*nineteen eighty*).

Step 4: Find the readability score

Find the average number of score and word length of the text in the readability table. The instruction of readability score shows on the reading ease score (see table 2.2).

The Flesch reading ease formula is a number from 0 to 100, with a higher score indicating easier reading. If we were to draw a conclusion from the formula, then the bets text should contain shorter sentences and words. The score between 60 and 70 is largely considered acceptable, it has standard as the description of style and the estimated reading grade is eighth to ninth grade. If we find a result of readability with other score, we can compare it with the other criteria in the table. The following table is helpful to assess the ease of readability in a reading text:

	Description	Average	Average	Reading	Estimated
	of	Sentences	Number	Ease	Reading
	Style	Length	of Syllables	Score	Grade
			per 100 Words		
-	Very Easy	8 or less	123 or less	90 - 100	Fifth Grade
	Easy	11	131	80 - 90	Sixth Grade
	Fairly Easy	14	139	70 - 80	Seventh
					Grade
Ī	Standard	17	147	60 - 70	Eighth to
					Ninth Grade
	Fairly	21	155	50 - 60	Tenth to
<	Difficult				Twelfth
					Grade
Ī	Difficult	25	167	30 - 50	Thirteenth
					to sixteenth
					Grade
					(College)
	Very	29 or more	192 or more	0-30	College
	Difficult				Graduated

Table 2.2 Table of Reading Ease Score*

* Quoted from Wahyuni (2006:21)