

The Influence of Reading Level of Students and Readability of Textbook among Malaysian ESL Secondary School Students

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ABSTRACT

Readability of reading materials is important in the ESL reading classroom because readers can benefit from the reading materials only if there is a proper match between the materials and the readers. Past research suggested that materials difficulty is influenced by many factors such as word difficulty, sentence complexity, sentence length, grammatical familiarity, topic of the materials and formatting feature. However, this study focused only on the sentence length of the reading texts. In addition to that, there is evidence to show that reader can be categorized into three levels which are independent, instructional and frustration reading level. This study investigated the readability level of Form Four English textbook used in Malaysian schools and its relationship with students' reading level. It is hoped that the findings of this research will encourage more to pay more attention to the material to be presented to students so that it becomes suitable for students' reading level.

Key Words – ESL Textbook, Readability, Reading Level and Reading Comprehension

1.0 INTRODUCTION

1.1 Background of the study

The issue of matching reading materials (such as textbooks) of suitable difficulty level to a target group of learner has become a concern among ESL instructors (Hussin, 2010; Abdullah & Hashim, 2007). It is not an easy task to guarantee the difficulty level of reading materials is within the range of learners' language ability. Based on the Sijil Pelajaran Malaysia (SPM) result 2011, it showed that only 28% of students achieved minimum credit against Cambridge 1119 standards.

Based from International Student Assessment (PISA) 2009, Malaysia obtained a mean score of 414 which was below mean of all countries involved which was 493 in reading literacy. In the reading literacy assessments, Malaysian students were found unable to do one or more of the following: locate one or more pieces of information in a text, recognise the main idea in a text, make low-level inferences or comparisons between information in the text and everyday knowledge (Malaysian Educational Blueprint, 2013-2025, p 80).

Lack of reading proficiency among our students might happen because of the use of unsuitable textbook (teaching materials) with our students' ability. Reading materials chosen for the readers should suit the readers' ability in helping the

students to improve their skills in reading. According to Stanovich (1985) as cited by Mesmer (2008), readers who spend time reading appropriate texts, they will improve their reading skills, but when they do not, they will increasingly fall behind their peers. A study by (Kaur & Thiagarajah, 1999) among EFL students in Malaysia, indicated that 48.6 percent of the respondents rated their EFL reading comprehension ability as not being very efficient when reading materials in English in general as well as literary works. Meanwhile, study done by Pandian (2000) found that in Malaysia, 76.2% of secondary school students and 80.1% of university students are reluctant readers of English. It shows that students in Malaysian universities have some problem in developing academic readiness due to lack of EFL reading comprehension ability.

Textbooks serve as important instructional materials in the teaching and learning process provided with suitable concepts presentation, activities and exercises. All students are required to have textbooks for their learning process as the main resource. Most teachers and students in Malaysia tend to rely on prescribed textbooks in most of ESL class. Thus, it is an interesting study to investigate whether could there be a mismatch between the text difficulty and students' reading ability.

1.2 Objectives of the Study

The objectives of this study is to investigate on the prescribed form four English textbook readability and students reading comprehension ability of Form 4 secondary school students on the reading passages in the textbook.

1.3 Research Question

Research Question 1

What is the readability score of English language reading passage of form 4 prescribed textbook used in schools

Research Question 2

What are the reading levels shown by the students towards the reading texts in the textbook

Research Question 3

Is there any significant relationship between gender and their reading level towards the reading text?

2.0 LITERATURE REVIEW

2.1 Instructional Materials in Teaching and Learning Process

Ikerionwu (2000) refers to instructional materials as "objects or devices, which help the teacher to make learning meaningful to the learners" as cited by Okobia (2011). Similar with Ikerionwu, Kaewmak & Intharaksa (2011) refer instructional materials to any instruments, devices or even materials that are used to transfer and convey the knowledge, information and skills to learn from teachers or

instructors to the learners or students. Ezegbe (1994) classified instructional materials into two as visual materials, which made up of reading and non-reading materials and audiovisual materials, which comprising electrically operated and non-electrically operated materials.

The purpose of instructional materials is to promote efficiency of education by improving the quality of teaching and learning (Okobia, 2011). The use of these tools and materials will support, facilitate and reinforces the teaching and learning process.

According to Aduwa-Ogiebaen and Imogie (2005), instructional materials and resources include audio tape recorders, video tape recorders, slide projectors, opaque projectors, over head projectors, still pictures, programmed instruction, filmstrips, maps, chart, graphs and many more that offer a variety of learning experiences to meet different teaching and learning experiences. Instructional materials also involved textbooks, workbooks, instructional software, web-based content, homework, projects quizzes and even tests. However, this study only focuses on one instructional material in teaching reading which is textbook.

2.2 English Prescribed Textbook

English is taught as a second language in all Malaysian primary and secondary schools which is hope to enable the students to use the language in everyday life, to further their studies and for work purposes. Thus, the prescribed English textbook is expected to facilitate with the teaching and learning process. The textbook prescribed followed the curriculum specification drawn by the Ministry of Education where it aims to extend learners' English language proficiency in order to meet their needs for English in everyday life, for knowledge acquisition and for future workplace needs (Curriculum Specifications for English Form 4, 2003).

The English syllabus at the secondary level specifies the content to be taught from Form 1 through Form 5. Three areas of language use focus are the Interpersonal, the Informational, and the Aesthetic use. The prescribed English textbooks for English subject in Johor entitled English Form 4 published by Penerbit Mega Setia Emas Sdn. Bhd. The book is divided into 15 chapters. The topics developed in each of the 15 chapters revolve around the six themes as specified in the syllabus which are people, environment, social issues, values, health and science and technology. However, the focus of this study will be just on the reading passages used for reading comprehension in the Form 4 prescribed English textbook only.

2.3 Readability

2.3.1 Definition

"Readability" defined by Klare (1969) is "the ease of understanding or comprehension due to the style of writing". Readability tests, which are mathematical formulas were designed to assess the suitability of books for students at particular grade

level or ages. Reading materials are considered having high readability if readers are interested to read the materials, understand the content of the materials and able to read the materials fluently (Hussin, 2010). It is a must for ESL instructors to ensure a good match between learners and reading materials in order for learning to take place. In fact, “making the match” between materials difficulty and the target learners is one of the most important decisions that ESL instructors have to make (Fry, 1977).

Readability of reading materials is important in the ESL reading classroom because readers can benefit from the reading materials only if there is a proper match between the materials and the readers. Reading materials, which is a type of instructional materials, help learners develop their reading skills and strategies, present and recycle grammar item, extend vocabulary, provide models for writings, give information to learners and stimulate oral work in language classroom (Cunningsworth, 1995).

Generally, ESL instructors use reading materials from coursebooks specifically written for instructional purposes when teaching reading skills to their ESL learners. They usually use coursebook or textbook prescribed by teaching institution or ministry of education to facilitate them with teaching and learning process.

2.3.2 Formula

There are several methods of measuring readability of reading materials. Measuring readability by using readability formula is the most frequently produced and widely accepted method for measuring readability (Gilliland, 1972). The formula uses a mathematical equation to calculate the average number of words per sentence and the proportion of polysyllabic words to indicate the difficulty level of reading materials.

It is estimated that there are over two hundred formulas for readability (Dubay, 2006). Among the popular are The Flesch Formula, The Dale-Chall Formula, The Gunning Fog Formula, Fry Readability Graph, McLaughlin's SMOG Formula and the FORCAST formula.

The Flesch Reading Ease Formula is regarded as one of the oldest and most reliable readability formula (Klare, 1969). The formula was developed by Rudolf Flesch in 1943 and revised in 1948. It is available and free to be used by Microsoft Office application users to be used. The formula uses average sentence length and average word length as predictors of passage difficulty and descriptive categories to describe passage difficulty. The formula uses average sentence length and average word length as predictors of passage difficulty and descriptive categories to describe passage difficulty. The Flesch Reading Ease formula is displayed in figure 2.1.

Figure 2.1 The Flesch Reading Ease Formula

$$Y = 206.835 - 1.015 (X_1) - 84.6 (X_2)$$

Y= Reading Ease Score

X₁ = Average Sentence Length

X₂ = Average number of syllables per word

The Reading Ease score generated by the formula is a number 0 (difficult) to 100 (easy) and the descriptive of the score are displayed below.

Table 2.3 Interpretation Table for Flesch Reading Ease Scores

Reading Ease Score	Style Description	Estimated Reading Grade	Average Sentence Length	Average Number of Syllables/100 Words
90-100	Very Easy	5th grade	-8	-123
80-90	Easy	6th grade	11	131
70-80	Fairly Easy	7th grade	14	139
60-70	Standard	8th – 9th grade	17	147
50-60	Fairly difficult	10th – 12th grade	21	155
30-50	Difficult	13th – 16th grade	25	167
0-30	Very difficult	College graduate	29	192-

(Flesch, cited in Klare, 1988)

2.3.3 Cloze test

There are many types of assessments on reading comprehension. As Pearson and Hamm (2005) summarized, early research identified that reading comprehension involved multiple components that would appear depending on the formats used to present the material to be read and the manner in which the person was asked to indicate their understanding of the material that was read. Three common reading comprehension formats are cloze, question-answering and retellings (Spear-Swerling, 2006). Cloze format tests present sentences or passages with blanks in them. Cloze test was first introduced by Taylor (1953) where the test-taker is required to reproduce accurately a part deleted from a message by deciding from

the context that remains as cited by Ren (2011). The blanks deleted from the text is either mechanically (every nth word) or selectively depending on what aspect it is intended to test for. The score of the cloze test is then used to indicate the reading level and the suitability of reading material by using Table 2.1

Table 2.1 Students' Reading Level in Relation to Scores in the Cloze Test and Suitability of the Reading Materials (Alexander, 1969)

Reading level	Score	Suitability of reading materials
Independent	62-100% correct	Materials are too easy for students
Instructional	47-61% correct	Materials are appropriate for students but need teachers' support and guidance
Frustration	0-46% correct	Material are too difficult for the students

2.4 Research Done in Previous Years

There are quite numbers of studies done in investigating the readability of text suitability with the reader. A study conducted by Arifin, Ab. Halim, & Abu Bakar (2013) who studied the readability level of Balaghah (rhetoric) textbook which is used for the Malaysian Higher Certificate of Religion (STAM) examination. Cloze test was used as a tool to measure readability of the textbook on 78 STAM students. The study findings show that the constructed cloze test set has a high readability level, while the textbook being studied is at a higher readability level than the ability to read level of the study sample.

Fatt (2006) done a study on biology textbook used in Singapore. The study involved 397 'secondary three' students of government secondary schools and 85 biology teachers. Ten cloze tests with every fifth-word deletions were administered and marked by exact-word scoring. The result showed that the readability of these textbooks was found to be at the frustration reading level of the students.

Another study done by Yong (2010) who studied the readability of Secondary Science for Brunei Darussalam Book 1. He used Gunning, Fry and Flesch-Kincaid readability methods and Cloze test to measure the reading level of Grade 7 students. Results showed that the readability of science textbook far exceeds the reading age of the students. It was also found that only about a third of the students were found to be reading at the instructional level, while majority were found to be at the frustration level. Moreover, results also showed that there was a

significant association between student reading level and achievement in science.

2.5 Male and Female Differences in Reading

According to PISA (2009) in every country participated in PISA 2009, girls have significantly higher average reading scores than boys. In the USA, boys are significantly less successful in school than girls: boys are three to five times more likely to have learning disabilities placement in school, boys score significantly lower on standardized measures of reading achievement.

Girls enjoy reading more, they do it more often and they hold more positive attitudes towards reading and they seek out more reading opportunities such as visiting libraries and go to the bookstore compared with boys (Clark, 2012). Boys prefer texts that have purpose: getting information, create things, and helping others (Meriuo-Storm, 2006). Often boys inschool dislike literacy lessons such as reading activities for many purposes outside school. They feel that knowing to read is important, but reading itself is not. For them, there is a contrast between school reading and “life reading” where school reading is unconnected to their interests and the texts are too long and difficult whereas life reading is based on their interests and usually consists of short passages (Meriuo-Storm, 2006). Many groups of boys also regards school literacy is “un-masculine” and thus undesirable, a threat to their masculinity (Rhodes & Shanklin, 1993). Another factor to be considered is the differences between the brains of male and female. Female’s brains are more verbally oriented, and it makes the reading easier for them. Meanwhile, male’s brains are visually oriented (Claiborne & Siegel, 2010).

3.0 METHODOLOGY

The study employed a descriptive correlational research design in order to investigate the readability level of Form 4 English Textbook and its relationship with students’ reading level. The descriptive design was utilized in order to analyze the readability level of Form 4 English Textbook by using the Flesch Reading Ease Formula. Meanwhile, a correlational design was used in order to test the relations between gender.

3.1 Population and Sample

The target population for this study was Malaysian day-time secondary public schools in Johor. Simple-random sampling technique was employed in order to give every school an equal and independent chance to be selected for the sample (Singh, Fook, & Sidhu, 2006). The final population for this study was Form 4 Secondary School students of three different urban secondary schools located at Johor.

3.2 Instrumentation

Two instrumental methodologies were used for this study namely Flesch Reading Ease formula and a Cloze Test. The Flesch Reading Ease formula was used to investigate the readability level of the reading passages in the prescribed textbook. Meanwhile, the cloze test was used to assess students’ reading level.

3.2.1 Flesch Reading Ease Calculation

There are 15 chapters in the selected textbook and in every chapter, there is reading comprehension text provided to help with the reading skills activity as a source of teaching and learning material. All the 15 reading comprehensions text were analyzed using Flesch Reading Ease Formula by using Microsoft Word Office software where the formula is inbuilt in the software itself. The formula uses average sentence length and average word length as predictors of passage difficulty and descriptive categories to describe passage difficulty. The formula for the Flesch Reading Ease Score (FRES) is based on this formula:

$$206.835 - 1.015 \left(\frac{\text{total words}}{\text{total sentences}} \right) - 84.6 \left(\frac{\text{total syllables}}{\text{total words}} \right)$$

After the text has been typed into the Microsoft Word (MS), the readability tool in MS word is enable by ticking 'Show readability statistics' under Grammar settings in Options tools. The use of full stop such as in name, for example; M. Mohandas will be deleted. This is to avoid confusion by the software in indicating the use of full stop to end a sentence or used in noun.

After the calculation of the readability score of the reading passages from every chapter were computed (results in chapter 4), the score was arranged accordingly from difficult to easy. In selecting the passages for the cloze test, these chapters were arranged in a descending order based on the level of readability. Then, the chapters were chosen from the list by choosing the first quarter, second quarter and the third quarter of the list based on the readability level. This was to ensure the reading passages chosen represent the overall readability level of the textbook.

3.2.2 Cloze Test

The cloze test was constructed based from the three reading text chosen and blanks were deleted on every 7th word. As suggested by previous study (Oller & Conrad, 1971), a cloze test should not exceed 350 words. This is to avoid fatigue by the reader in answering the questions. Thus, for text which exceeds that 350 words was summarized with the almost similar finding of the Flesch score.

The first cloze test, which was based on Chapter 2's reading comprehension text, consists of 36 multiple-choice questions. The second cloze test, based on Chapter 13's consists of 38 multiple-choice questions and the third cloze test which is based on Chapter 3's reading comprehension text, consists of 39 multiple choice questions.

3.3 Validity and Reliability

The content validity of the test was given to three experts in the relevant field to measure the extent to which the items adequately represents the content of the construct being measured. The suggestions of the experts were taken into

consideration and minor changes were made on the tests.

Test-retest method was used to assess the reliability of the cloze test where it involved administering the same test twice to the same group with some time interval between tests (Fraenkel, Wallen, & Hyun, 2009). In this study, the time interval between the first and the second test was a week (7days). A reliability coefficient was then calculated to indicate the relationship between the two scores obtained. The first cloze test obtained reliability coefficient of .881, meanwhile for the second cloze test obtained .848 and the last cloze test obtained reliability coefficient of .750. This shows that the test does achieve the acceptable standard as recommended by Singh, Fook, & Sidhu (2006) with a high level of validity and reliability.

3.3 Data Collection Procedures

The tests were administered to the target sample of the population in the chosen schools. All instruments were self-administered by the researcher. Three learning periods were required for every class tests on three cloze tests. Before distributing the questionnaire, the students had been clearly explained on the purpose of the study and they were also told to make sure that the participant would not discuss and use dictionary when answering the test.

They were informed that their responses were confidential and their identities would be kept anonymous. Instructions were then given to the students on how they should answer the test. All the respondents answered and returned the test on that same day.

3.4 Marking Procedure

After the answer sheets were collected, the researcher proceeds with the marking procedure. One mark was given for every correct answer. The maximum score for the first cloze test was 36, second cloze test, 38 and the last cloze test was 39. Total score of all the cloze tests were 113 marks.

3.5 Data Analysis

Data from the questionnaire and the test were subjected to descriptive statistics, involving the analysis of percentages, means and inferential statistics that included the chi square test in order to answer the research questions to look for any significant relationship or association between the variables. This research employed the utilisation of Statistical Package for Social Science (SPSS) Version 18 to analyze the data.

4.0 RESULT AND DISCUSSION

4.1 Readability Level of Difficulties of the Reading Passages in Form 4 English Textbooks

The findings of this study revealed that the reading ease score of the textbook is within the range of 60-70. According to Flesch as cited by Klare (1988) reading ease score of 60-70 is text with standard difficulty of average sentence length of 17 and average number of syllables /100 words of 147. The readability of the reading passages used in the textbook falls below the students' estimated age, which is 13 to 14 years (Table 4.1).

Table 4.1: Readability score of the reading comprehension passages

No.	Chapter	Type of Text	Readability Score
1.	10	Descriptive	23.5
2.	11	Informative	44.9
3.	5	Descriptive	47.4
4.	8	Forum	48
5.	2	Descriptive	48.9
6.	14	Informative	52.1
7.	7	Opinion	54
8.	13	Narrative	62.4
9.	6	Speeches	62.4
10.	15	Message/Speech	63
11.	3	Interview	65
12.	1	Narrative	66.8
13.	12	Descriptive	67.4
14.	9	Brochure	73.5
15.	4	Dialogue	77.8
Mean :		57.14	

Table 4.1 shows the readability scores of every chapter (14 chapters in all) in the textbook. Since the distribution of these scores are extreme with a range of 54.4 (range = 77.8 – 23.5), and the data seemed to be skewed, the median score is used as to represent the readability of the textbook instead of the mean score. The median score is located using the formula $\text{median} = (N+1)/2 = (15+1)/2 = 8$. Thus, the eighth (8th) number is where the median score lies, which is chapter 13 with readability score of 62.4.

Based from reading ease score description (Flesch, 1949), indicates that the textbook Flesch Reading Ease score falls within 60 – 70. It is considered as standard difficulty and suits with 8th – 9th grade students, which is for student age

of 13-14 years old. In other words, the passages readability level in Malaysian Form Four English schools textbook is at the lower level of readability.

This findings is very much similar with studies done by Cepni, Gokdere, & Kucuk, (2002), Arifin, Ab. Halim, & Abu Bakar, (2013), Fatt (2006), (Yong, 2010), who found that the readability of the textbook they were investigated were not equal to the estimated age of the target reader. However, this finding is different with study done by Perekeme & Alex (2012) who found prescribed English language textbook for Junior Secondary schools in Bayelsa State, Nigeria falls within the level of the students.

This finding implies that the textbook provides the targeted readers with reading texts that are easy for reading activities in English language teaching. It is important for the textbook readability to be matched with the targeted reader as textbook plays as an important instructional material in assisting teacher and students in achieving reading proficiency.

4.2 Students' Reading Level towards the Reading Passages of the Textbook
In determining the students' reading level, cloze test was administered and table 2.1 has been used to classify the students' reading level towards the reading materials.

Table 4.2 Students' Reading level based on cloze test

Reading Level	Frequency	Percent
Independent Level	27	15.2
Instructional Level	55	30.9
Frustration Level	81	45.5
Total	178	100.0

Table 4.2 shows the reading level obtained by the students based from the cloze test scores. The scores have been converted into percentage and categorized based on cloze test scoring developed by Alexander (1969). Twenty seven of the students (15.2%) read the text in independent level, fifty five of them (30.9%) read the text in instructional level and eighty-one of the students (45.5%) read the text in frustration reading level. This data suggests that majority of the students read the text at frustration reading level. It was determined that most of the student faced frustration reading level (45.5%) towards the reading text, followed with instructional level (30.9%) and independent level (15.2%). This implies that students involved in this study have a low reading level. It is an interesting finding since the readability of the textbook suggested that the text should be easier for the targetted reader, however, the reading level showed by the students proved to be different. These findings imply that the reading materials are difficult to be read, which is texts that cannot be read with or without assistant (Mesmer, 2008). This finding is similar with a study conducted by Bargate (2012) and Kasule

(2011) which used cloze test to investigate students' reading level towards texts in textbook, and found most of them read the text at frustration level which shows that the text used in the textbook is too challenging for the students to be read and understand.

A good reading material should be a material that progressively increases in difficulty. It is important for the students to learn within their zone proximal development. This is the learning space between that which the learners can do completely independently and that which they cannot do even with assistance. It is where teaching slightly difficult material with support should improve a student's ability.

Table 4.3 Group statistics of Cloze score between male and female students

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Cloze Score	Male	121	47.5389	13.81931	1.25630
	Female	42	50.7164	14.12213	2.17909

Meanwhile, based on table 4.3, male students seem to obtained lower mean score (47.54) compared to female mean score (50.72). To determine if there is relationship between gender with reading level, a chi square test was conducted.

Table 4.4 Chi-Square tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.290a	2	.318
Likelihood Ratio	2.172	2	.338
Linear-by-Linear Association	.883	1	.347
N of Valid Cases	163		

The result in table 4.11 shows that there is no statistical significant relationship between reading levels and gender ($\chi^2(1, N=163) = 2.290, p>.05$). This means that there is no significant relationship between reading levels and gender. Thus, the null hypotheses failed to be rejected. There is no sufficient evidence to conclude that there is a relationship between the reading level and genders among Form 4 students.

Based on gender differences, male students attained a lower ($M=47.54, SD = 13.82$) score than their female counterparts ($M=50.72, SD = 14.12$) in the test.

Studies showed that girls were observed to have more positive reading attitudes at all learning level and girls tend to be more efficacious and more able reader even from a very young age (McCoach, O'Connel, Reis & Levitt, 2006). However, this study found that, although female students obtained higher reading scores than male students in the cloze test, the mean difference was not significant statistically. This is also supported with the findings found by Mehrpour, Razmjoo, & Kian (2011) who found that gender had no significant impact on learners' reading comprehension performance. Therefore to say 'female students perform better than male students' are not applicable, as gender does not give significant impact on reading comprehension ability.

5.0 CONCLUSION

This study has discussed the readability level of prescribed Form Four English textbook and students' reading level toward the reading texts in the textbook. The findings show the readability level of the textbook based on Flesch Reading Ease formula is suitable for students aged 13 to 14 years old. This finding implies that the textbook is easy for Form Four secondary school student to be used as reading materials. However, result from the cloze test proved differently.

From the cloze test given, majority of the students read the reading text from the textbook with frustration reading level. However, there was no association found between gender and reading level. This suggested that the English textbook used among form 4 students is not suitable with the targeted students as it fails to provide scaffolding to the students where the textbook should be progressively in difficulty. It is important for the students to learn within the zone of proximal development; the learning space between that which a learner can do independently and that which she cannot do without assistance. By teaching in this zone, teachers will enable the students to attain higher levels of functioning.

The mismatch between the readability score formula with the reading level obtained by the students might because of the readability formula itself, which measure the text on the text level only (sentence length and syllable count). There are many other factors that might affect readability that should take into consideration such as vocabulary, motivation, background knowledge, topics, organization and text formatting. Thus, teachers or any educational practitioners should not depend solely on any readability formulas in choosing the suitable reading materials for the readers.

From these findings, immediate attention and necessary steps should be taken in order to make sure our students are provided with the best and suitable reading materials for English language teaching. Textbook is important in helping the educational practitioners in delivering the curriculum. In summary, putting the right books in the hands of language learner can improve or break their literacy development.

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