Measuring Reading Competencies in Malay Language among Young Adults with Reading Difficulties

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Abstract

At the moment, most of the readability formulas that measure reading competency are based on English words, using average words per sentence and average syllables per word. Unlike English, words in Malay language are constructed differently and tend to have as much as five or six more syllables per word. This paper will discuss how the existing reading competency formulas are being analysed and improved in the effort of developing a better online screening instrument that can measure potential young adults dyslexics competencies to read texts in Malay. Several reading materials were sampled and scored to evaluate the accuracy of current measurement based on different level of readers' competencies. Early findings from this work-in-progress posed the need for a revised formula as there were other parameters found to affect reading competencies such as the use of advanced words and the inclusion of known difficult word for dyslexics in a passage. It is expected that the revised formula will increase the accuracy of the intended instrument that measures reading competencies in Malay Language for young adults dyslexics in Malaysia.

Keywords: Reading competency formula; young adults dyslexics

1.0 INTRODUCTION

By definition, young adults can be portrayed as people at the age of 18 to 35 years old [1]. However, MIT Young Adults Development Project defined young adults as 18 to 22 or 18 to 25 years old [2]. United Nations Educational Scientific and Cultural Organizations (UNESCO) for statistical consistency across regions, defines 'youth', as persons between the ages of 15 and 24 years, without partiality to different definitions by Member States. UNESCO will then receive the meaning of "youth" as utilized by a specific Member State. It can be constructed for occurrence with respect to the definition given in the African Youth Charter where "youth" signifies each individual between the ages of 15 and 35 years [3]. While, Mail Online newspaper gives different meaning of young adults, which is person aged between as 18 years old up to 25 [4]. Definition of youth perhaps changes with environments and surroundings, especially with the changes in demographic, financial, economic and socio-cultural settings.

According to International Dyslexia Association (IDA), dyslexia is a language-based learning disability described by difficulties with precise and familiar word acknowledgment, spelling and reading decoding. Individuals with dyslexia have issues separating sounds within a word or phonemes, a key factor in their reading and spelling difficulties [5]. The Star online newspaper describes Dyslexia as a brain-based type of learning disability that influences an individual's capacity to read. It is the most well-known learning disability in youngsters. However what precisely causes it remains a medicinal secret. Regardless of having typical or even above-normal insight, an individual with dyslexia peruses at a fundamentally lower level than anticipated [6].

Dyslexia runs in the family and influences individuals of every scholarly level. Individuals with dyslexia are regularly fit or even skilled in ranges that don't require solid dialect abilities, such as art, design, drama,

music and sports [7]. Famous people like Walt Disney, Albert Einstein and even though Tom Cruise demonstrated that dyslexics like them can achieve in their life as long as they have a tendency to discover opportunities to defeat their issues.

The main focus of this paper is to demonstrate additional language parameters that can influence young adults dyslexics' reading competencies such as the used of advanced word and the inclusion of known difficult word for dyslexics in passage. Currently, a readability formula by Khadijah Rohani to measure the readability of the materials in Malay language are based on construction of words, which is number of words in sentences and vocabulary, which is number of syllables. Other parameters that have been found out through experiments are, words that have more than 3 syllables and potential difficult words in Malay language could be factors in reading competencies.

2.0 YOUNG ADULTS WITH DYSLEXIA IN MALAYSIA

Bahasa Melayu or Malay language is our first language that much of the time utilized by lion's share of individuals as a part of Malaysia. Some of young adults possibly have beat the reading issue yet they are not correctly turned into a gifted per users. For grown-ups with dyslexia it can help them promote self-knowledge toward oneself and inevitably coping strategies [7]. Struggling readers with dyslexia may have critical trouble with word acknowledgment and may not have built aptitudes to recognize new words. Older students with untreated dyslexia have not profited from years of perusing, and the introduction to different sorts of complex writings. This detriment may keep them down with other key parts of reading, for example, vocabulary, foundation information, and cognizance aptitudes. It can likewise influence their capacity to spell and write, making it troublesome for them to precisely express their insight and thoughts [8]. When people have difficulties with reading and bothersome, they start to feel upset and feeling incompetent.

In 1999, Malaysian Examinations Council has been entrusted to handle the Malaysian University Bahasa Inggeris Test (MUET). MUET is a test to measure candidates' English language proficiency. MUET is taken by students who intend to pursue their tertiary education at local public universities since it is a mandatory test to gain entry into degree courses offered at all Malaysian public universities [9] [10]. It consists of four components: listening, speaking, reading and writing. This is the only test taken by young adults but this test is to test students' abilities in English components stated earlier.

[11] has suggested that the best way to diagnose people with dyslexia are using assessment, where usually reading comprehension tests are usually timed. Recognizable proof of the children with dyslexia is frequently considered simpler since there

has been less chance to create procedures to overcome or shroud the troubles. In this way it might be contended that a more prominent comprehension of the issues is obliged to fittingly decipher the assessment results. It ought not to be expected that a capability to evaluate a dyslexic youngster is sufficient to additionally survey a dyslexic young adults. Understanding and compassion grew through experience can frequently have minimum as an essential influence is the evaluation of the dyslexic young adults as an understanding of the cognitive profile [12]. From his writing, we can conclude that reading assessment for dyslexic child and young adult could be different based on their reading skills and reading ability.

3.0 READING COMPREHENSION

While reading dyslexic learner experiences overload data, which means the brain will process a lot of data and recollect that it in the same time. This could be worse when they are struggling with their short memory and psychological issues.

There are three main types of reading to consider which are: [13]
• Skim reading - To get a general idea of what the material is about, to identify if it is worth spending more time on it
• Scanning reading - As a visual task whereby the reader is looking for very specific information with a given purpose
• Full text reading – Reading in detail. This could be difficult task for dyslexic user.

Reading comprehension is vital for building a solid base for achievement in study. People with dyslexia dependably have reading comprehension issues as they have to build up a few causal abilities to comprehend the text [14].

Borneo Post Online said that publication of reading materials in Bahasa Melayu and reading programmes need to be expanded to further reinforce the utilization of the Bahasa Melayu as a language or learning as the national language in our mother tongue. It was pivotal for individuals to place trust in the ability of Bahasa Melayu as we used it all the time [15]. In the area of resources, both fiction and nonfiction keep on being prominent among young adults. The young adults reading practices, various key issues identified with both reading ability and reading behaviours [16].

Reading difficulties happen on a continuum, implying that there is an extensive variety of people who experience reading difficulties. There are those people (students) who are diagnosed with a reading-related disability however there is a much bigger gathering of students (without diagnose) who still oblige focused on reading assistance [17].

4.0 CONSTRUCTION OF MALAY WORDS AND READABILITY FORMULA IN BAHASA MELAYU

There are contrasts in developments of Malay and English words. For instance in the number of syllables of words. Usually Malay words can have till five to six syllables, (e.g: penyelenggaraan – six syllables) compared to English words that have commonly two to three syllables (e.g: table- two syllables). Other example, in Malay (e.g: kereta – three syllables) while in English (e.g: car- one syllable) even though both of words have same meaning. Construction of Malay words are divided into four which are Kata Tunggal, Kata Majmuk, Kata Ganda and Kata Terbitan. Different variables that influence the perusing are the structure of the words, the thought of the content, physical of the content, background and enthusiasm of the readers , societies and readers' trustiness [18]. This means that readability can be influenced by the factors of text and readers.

The readability formula for Bahasa Melayu developed by Khadijah Rohani in 1984, [19] are based on construction of words, which is number of words in sentences and vocabulary, number of syllables. In spite of the fact that this formula can calculate the readability level for Malay reading material, the formula, however, stops as the reader's age of 17 years (Form 5) falling a few years apart from young adults as targeted in this study.

Below is the readability formula in Bahasa Melayu:

$Y = -13.988 + 0.3793\ X$ (words per sentence)* + $0.0207\ X$ (number of syllables)*
(*based on 300 words from the reading sample)

Table 1 Readability level according to Year in Primary School and Form in Secondary School [19]

Readability Level	Year/Form
1	Year 1
2	Year 2
3	Year 3
4	Year 4
5	Year 5
6	Year 6
7	Form 1
8	Form 2
9	Form 3
10	Form 4
11	Form 5

Table 1 above shows the readability levels ranging from Level 1 to Level 6 that suits Year 1 until Year 6 at Primary school level, followed by Level 7 to Level 11 that matches the academic level of Form 1 until Form 5 at secondary school level. Should the score falls in decimal place (e.g. 1.9), then the readability level indicates that the material is stronger towards Year 2 level.

5.0 EXPERIMENT PROCEDURE

Readability formula developed by Khadijah Rohani is used as measurement tool to measure the readability level of reading materials samples that to be used as instruments to measure the reading competencies among young adults with dyslexia in Bahasa Melayu. Two sample of text are chosen from web and reference book which are:

Table 2 Readability level for each reading material sample

Reading Materials	Readability Level
Karangan Teknik Cerita -'Berakit-rakit ke hulu, berenang-renang ke tepian, bersakit-sakit dahulu, bersenang-senang kemudian' – Example of online essay (easy)	6.0826
"Kejuruteraan Perisian" (Penyenggaraan Perisian) – University Reference Book	9.0274

Table 2 above shows the readability level for each reading material sample.

Based on the results, the readability level for easy essay (Karangan Teknik Cerita) is 6.0826, which suitable for student 12 years old (primary school reading). The readability level for difficult essay "Kejurutreaan Perisian" - Penyenggaraan Perisian is 9.0274 which suitable for students 15 years old and above (secondary level/ university level).
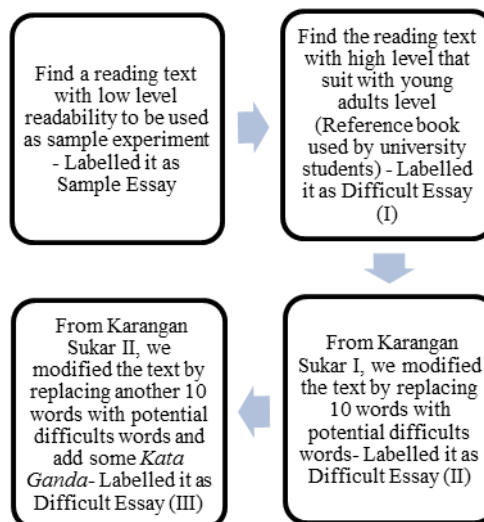
Figure 1 Block diagram of process in selecting and modifying reading sample

Table 3 Classification for each reading sample

Sample Essay	Difficult Essay (I)	Difficult Essay (II)	Difficult Essay (III)
-Readability level : 6.0826 -No additional new parameters	Readability level: 9.0274 -No additional new parameters	- Readability level: 9.0274 -Additional parameters ~Replace 10 words with potential difficult words	-Additional parameters ~ Replace another 10 words with potential difficult words (Total:20 words) ~ Add *Kata Ganda*

Block diagram in Figure 1 illustrates the process in selecting and modifying the instruments used as reading sample for the experiment. Firstly, a sample text that scores a low readability level (readability level for easy sample- 6.0826) is constructed and was used as Karangan Sampel. Next, find the reading text with high readability level (9.0274) to be labelled as Karangan Sukar I. After that, from Karangan Sukar I, modified the contents of the text by replacing 10 words with potential difficult words and labelled it as Karangan Sukar II. Lastly, from Karangan Sukar II, modified the contents of the text by replacing another 10 words with potential difficult words and add some Kata Ganda to be labelled it as Karangan Sukar III. The classification for each reading sample is indicated in Table 3.

The experiment instrument comprises of two sections: questionnaire and reading assessment test. The questionnaire consists of personal information and questions on the participant reading difficulties. Later, the participant we requested to complete the reading assessment test. The participants were asked to record the time they took to read the article given using stopwatch application on their phones. The screening test is considered incomplete if the participant did not complete either one of these assessment tests as both of them are important in this experiment.

The preliminary study was conducted among students at the Faculty of Information and Communications Technology, Universiti Teknikal Malaysia Melaka (UTeM). Each of them received 2 pieces of paper, their consent were sought and the whole session lasted no longer than 15 minutes.
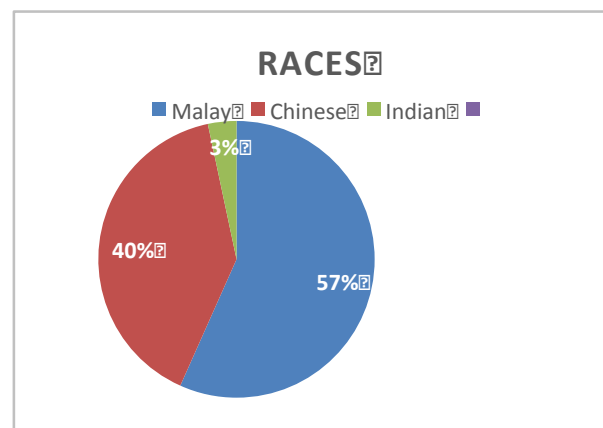
A. Participants

Thirty students that participated in the study were volunteers aged between 20 and 27 years old.
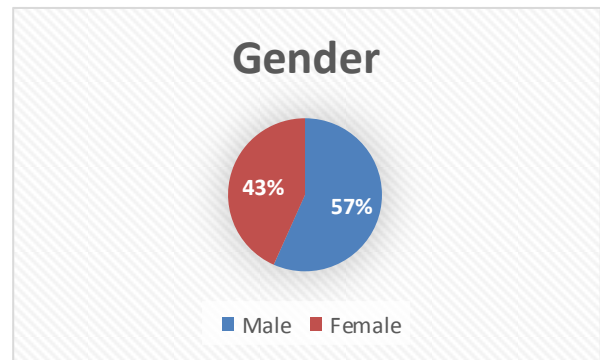
Figure 2 The percentage of participants according to gender

Figure 2 above shows a pie chart that illustrate the percentage number of participants according to gender. Male shows 57% which is equals to 17 people while female shows 43% which is equals to 13 people.

Figure 3 below shows the distribution of participants according to races. Malay shows the highest percentage, 57% of the total respondents which is equals to 17 people. Chinese with the second highest percentage, 40% which is equal to 12 people. Only one Indian participated in this study, which is equals to 30%.

Figure 3 The percentage of participants according to races

A. Procedure

There are two sections in the experiment instrument namely personal information and questionnaires on reading difficulties and reading assessments. The data of these two assessments were analyzed to identify whether the users were potentially dyslexic.

The participant was asked about his/her personal information like name, gender, age, telephone number, email address, primary languages that they used, MUET (band) and marks for reading section in MUET. There were five questions in the learning questionnaires. Every participant answered all the

questions by answering either Yes or No before proceeding to the next section.

The reading assessment is used to determine the time taken for a participant to complete reading an article. The participants were asked to time their reading speed by pressing Start when they begin to read the first word and to press Stop when they read the last word. They were asked to write the time taken in seconds.

6.0 RESULTS

I)   Questionnaires Results

Figure 4 shows the number of participants that answered 'Yes' and 'No' for each questions in the questionnaires. For Question 1, 8 participants answered 'Yes', while 22 answer 'No', which means only a few of them have difficulties in reading.
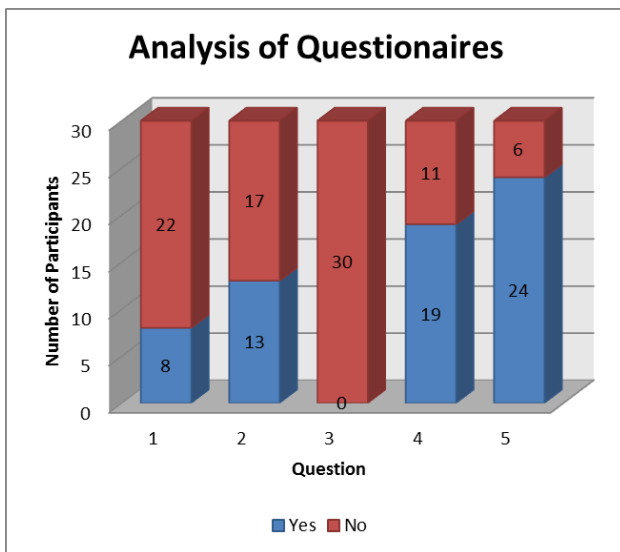

Figure 4 Results of questionnaire for 30 participants

For Question 2, 13 participants answered 'Yes', while 17 answered 'No', means only a few of them take a longer time to read. For Question 3, all of the 30 participants answered 'No', which means they do not get confuse with alphabets. For Question 4, 19 participants answered 'Yes', while 11 answered 'No', some of them maybe find difficult to read words that they have not seen before. For Question 5, 24 participants answered 'Yes', while 6 answered 'No', which means a lot of them experience misspeaks, misuses, and mispronounces words without realizing.

II)   Reading Assessment Results
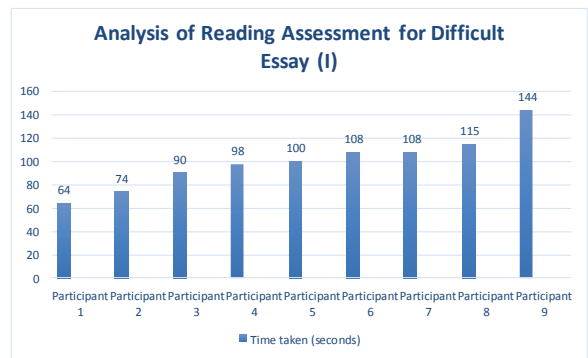
a)   Difficulty Essay(I)

Figure 5 Analysis of Reading Assessment for Difficult Essay (I)

Figure 5 above shows the reading assessment for Difficult Essay (I) conducted by nine participants. Participant 1 took the shortest time (64 seconds) to complete reading the article while Participant 9 took the longest time 144 seconds.
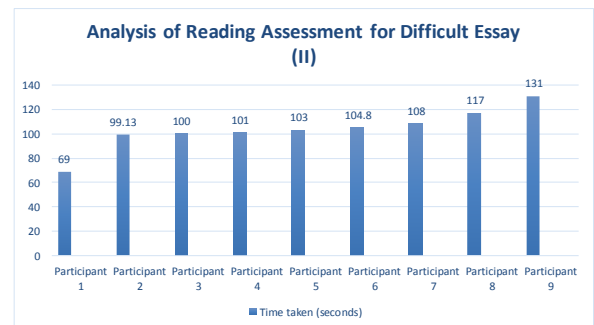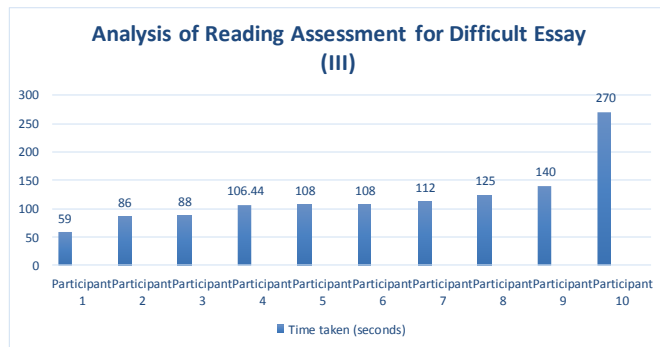
b)   Difficulty Essay (II)

Figure 6 Analysis of Reading Assessment for Difficult Essay (II)

Figure 6 above shows the reading assessment for Difficult Essay (II) conducted by nine participants. Participant 1 took the shortest time (69 seconds) to complete reading the article while Participant 9 took the longest time 131 seconds.

c)   Difficulty Essay(III)

**Analysis of Reading Assessment for Difficult Essay (III)**

Figure 7 Analysis of Reading Assessment for Difficult Essay (III)

Figure 7 above shows the reading assessment for Difficult Essay (III). Ten participants were involved. Participant 1 took the shortest time (59 seconds) to complete reading the article while Participant 10 took the longest time 270 seconds.

Based on 4 graphs, participant 10 in Difficult Essay (III) possibly have difficulties in reading as he took more than 2 minutes to complete reading the article.

Figure 8 shows the average time taken for each essay. There is an increase in the number of average time taken from Difficult Essay (I) to Difficult Essay (III). However in Sample Essay the average time taken is quite high compared to Difficult Essay (I) and Difficult Essay (II) due to an extreme case found in one of the respondents who took too long to finish the text.

Average Time Taken For Each Essay
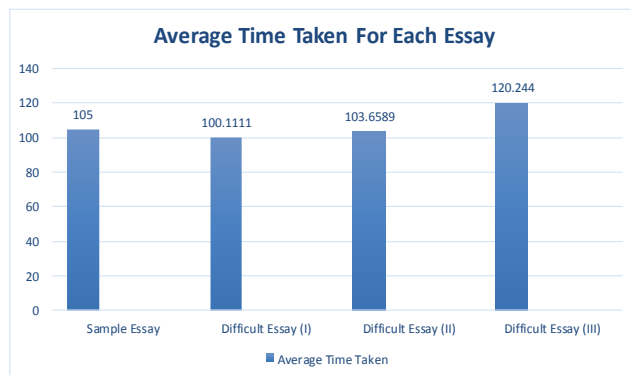
Figure 8 Average Time Taken For Each Essay

7.0 DISCUSSION

In Sample Essay, there were 5 participants involved. Three out of five participants took normal time to read the sample article (primary level). However, two of them took longer time which are 158 seconds and 170 seconds accordingly. This could be due to their lack of fluency in Malay language as both of the participants are Chinese.

In Difficult Essay (I), the article used was extracted from the university reference book. There were nine participants involved. Eight of them spent more than one minutes to complete reading the article, but only one participant took more than two minutes (144 seconds). From the questionnaires that he answered before shows maybe he have reading difficulties as 4 out 5 questions, he answered 'Yes'.

In Difficult Essay (II), the article used was similar to Difficult Essay (I), but there were additional parameters, which we replaced ten words with potential difficult words without changing the word count. Similar to Difficult Essay (I), eight of them took more than one minutes to complete the reading of the article, but only one participant took more than two minutes (131 seconds). However, there was a slight difference in average time taken between Difficult Essay (I) and Difficult Essay (II), which are 100.1111 and 103.6589 accordingly.

In Difficult Essay (III), the article used was modified from Difficult Essay (II), with additional parameters, which were to replace another 10 words with potential difficult words (Total difficult words=20) and 'Kata Ganda'. One of them took less than one minute to read, six of them spent more than one minutes, two of them spent more than two minutes and one participant took more than four minutes to complete reading the article. This candidate has scored 80% in the reading assessment test of which the respondent has agreed of experiencing reading difficulties. The average time taken for Difficult Essay (III) is the highest which is 120.244.

By comparing the average time taken for every test, we can conclude that there is an increment of time spent to read the articles of similar word counts; from simple essay to difficult essay with additional parameters like potential difficult words and words that have more than three syllables.

8.0 CONCLUSION

It is apparent from the experiment conducted that Kata Ganda, difficult words and words that are constructed from many syllables are additional parameters that may increase the readability level of a passage, causing young adults dyslexics to read even slower. As mentioned earlier, Dyslexia is not a disease but it is a life-long condition that cannot be cured. They can experience difficulty to read in their life and therefore an early identification and treatment is the key to assist dyslexics in fulfilling their daily tasks [20]. At the age of young adults, sometimes they are not aware that they are dyslexics since the signs of dyslexia could be different compared to when they were small. Future work of this study will be the development of an online readability tool in Malay language as mostly existing readability tools are in English. This system in the future can assist dyslexics especially those who are young adults to measure the readability of a reading material before they actually read it. It can also be used by language expert to evaluate whether a

passage written in Malay language is dyslexic friendly.

Acknowledgement

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