

Linguistic Features for Development of Arabic Text Readability Formula in Malaysia: A Preliminary Study

¹Kamarulzaman Abdul Ghani, ²Ahmad Sabri Noh and ²Nik Mohd Rahimi Nik Yusoff

¹Faculty of Education National University of Malaysia

²Ministry of Education, Malaysia Faculty of Education
National University of Malaysia

Abstract: Studies of Arabic text readability in Malaysia began to grow in recent years. This spurred on the need to reassess the quality of learning Arabic literature. But the constraints are lack of objective measurement tools besides cloze test. Unlike the other languages, especially English language has developed various formulas for this purpose. Therefore, this study is the initial exploration in identify potential linguistic characteristics as predictors of difficulty to the development of the Arabic text readability formula among non-native-speakers in Malaysia. For that purpose this study was used High Arabic text book (BAT) of Form Four as a sample. Cloze test was used to measure the readability of reading text in this textbook. A total sample of 390 students of SMKA from all over Malaysia was used for the test. Linguistic features involved words, sentences and contents density were analysed on 15 reading texts in the BAT textbook. Data were analysed using mean, percentage, standard deviation and Pearson correlation. Results indicated that the level of readability of reading texts in the BAT textbooks are at frustration level. While the linguistic features that include the three categories have imbalance distribution of consumption. Five linguistic features were most consistent of consumption in reading texts is from the category of sentences and contents density. The tendencies of sentences and contents features in predicting the difficulty of 15 reading texts of Form Four BAT textbooks are consistently high. Therefore, to develop the Arabic text readability formulas for non-native-speakers in Malaysia, this feature has the potential to be the basis of measurement.

Key words: Linguistic features • Readability formula • Cloze test • Linguistic analysis • Non-native-speaker
• Reading text, textbook

INTRODUCTION

The usage of Arabic reading text which is suitable for teaching and learning has to be chosen by the academician for reflection and positive response from students. Therefore, this is necessary, as in the Malaysian context, the access and the opportunity to practice the Arabic language is too limited. Apart from that, this considering reading text usage is appropriate and necessary for learning process because it helps to raise the students' interest and help them to master the language more effectively. Additionally, students need to be trained to have the autonomy and responsibility to adapt student-centred learning, in order to be more independent and active in learning, students are

suggested to find additional reading materials and not simply rely on teacher [1].

As for that, the readability level in Arabic reading text should be measured to ensure the suitability of the material with the level of students' language. In the meantime, this endeavour is to rewrite the text in simplified form for the readers which are non-native speakers. Thus, this effort will be helpful to serve the Arabic language and to contribute widely for the purpose of this study.

Background of the Study: Measurement of Arabic text readability and the study of Arabic readability is still foreign, especially in Malaysia [2], not as English readability measurement which has been long explored and continue to grow until now [3]. Therefore, the

selection, preparation and usage of Arabic reading materials are appropriate to the student's level of Arabic language, especially non-native-speaker should be concerned to ensure continuous reading effectively.

These studies have a long history and long established in the readability field especially in the perspective of education among western scholars that focused about the level of reading such difficulty and suitability for the target reader. These efforts are important as a way to provide quality reading materials and suitable to the level of usage [4].

The study of readability and readability formula development is invented and developed in the world's major languages such as English, German, Spanish, Swedish, Hebrew, Japanese and other languages. In the context of English reading materials, there are formulas built as a benchmark that is based on linguistic variables used in the text. Subsequently, the focus will be on sentence and word complexity. Most popular formula in variables is based on syllables, words, sentences and average word content [5].

Problem Statement: Recently, Arabic language is still in the early stages of such research, there are two Arabic text readability formulas designed and useful for this study such as Formula from Dawood and al-Heeti [3]. According [2] in the context of Arabic reading materials efforts to develop standard measurement of readability is too less. What's more to measure the difficulty level of Arabic reading materials in the context of non-native-speaking readers, especially in Malaysia.

As far as this matter being concerned, Arabic books used in schools and institutions of higher education in Islamic studies in Malaysia the majority are written to Arab readers. Even al-Azhar religious curriculum used at religious schools also oriented language to Arabic readers. Exposure and preparation of reading text from natural resources to the readers that consider non-native-speaker should emphasize the appropriateness of the level of factor from the side of the reader's language. If reading text is not suitable to the readers, for example, text that is too hard, causing the reader refuses to read [6].

In Malaysia there are efforts to evaluate the readability level of textbooks of religious subjects which is conducted by Zulazhan, [7] Kamarulzaman [2] that are based on a survey of students and teachers' perceptions of a particular text book and also by using cloze test scores. However, to measure the level of readability is not

properly genuine if determined based on the individual's perception because it is more subjective in nature and provide indicators of the level of the void [8-9]. Thus, to determine the readability level, readability formula is necessary to measure the level of the more objective to assist the selection of appropriate reading text [10].

The Dawood formula includes five readability features, which are average word length, average sentence length, word frequency, percentage of nominal clauses and percentage of definite nouns [11], while the Al-Heeti formula includes only one feature, which is the average word length. However, the variables that have the highest correlation is the average word length, average sentence length and average word used frequently. Al-Heeti (1984) was also using the same linguistic features with the study of [12] and was constructing a formula based on the average of three linguistic features long sentences, average word length and number of words being used frequently.

However, a study done by the researchers is a sample text from a textbook used by Arabic native-speaker. Therefore, a study in measuring Arabic text readability formula among non-native speakers should be conducted to identify the characteristics of potential linguistic which will contribute to readability in accuracy of the measurement.

Linguistics Criteria in Development of Readability

Formula: In constructing a tool to measure the readability of a text reading, scholars decide based on the features that available on the factors that affect readability. Various factors have been discussed by researchers and some often used as indicators to measure readability and the constructing the formula [13]. In fact, [14] urged that although many factors involved, but it can be categorized into two main factors text and reader. In the context of the developing of readability formulas, text factors become the main focus of researchers in determining the best combination of linguistic features that influence the level of difficulty in the text.

Text Factor: In the context of readability, some language elements have been identified by researchers, this involved with the elements of words or vocabulary, syntax or sentence structure, typography, illustration and colour, graphics and layout.

Words or Vocabulary: Words or vocabulary is the basic unit in the factor analysis to create formula and the calculating short-length paragraph of standard composition. Additionally, knowledge of words is one of

the key elements that can determine the readability of text reading [15]. Based on the factor analysis of the elements of readability by some researchers found that the word factor is the most important factor compared to other factors that been analysed [16]. This finding is supported by [17-18], Khadijah Rohani (1989) who found the word is a main factor, this factor also leads to the sentence structure factors which indicated two factors that have been confirmed to influence many modern languages in the world.

Meanwhile, various aspects related words identified that playing a role in affecting the readability of a text passage reading. The difficulty of the words can be measured in many ways [17, 16]. mentioned that the method of determining readability factor by words is based on frequency. Commonly, determination of the frequency is performed which based on a list of basic words such as Thorndike list, Dale list, a list of Buckingham, Dolch and for English language as well. In fact, if the text for assumption has many words that are in the list, this will be much easier compare with the text that has many words from outside the list of words used. Additionally, according to [19], more difficult words in the passage of essays, that means more abstract idea that exists.

In the context of the Arabic language education, there are many efforts to establish a list of words that were mostly done by scholars in the field of teaching Arabic as a foreign language. The earliest performed by Brill in 1940 [20]. Since 1980's many efforts to establish Arabic word lists have been done, for example: Toiemah word lists, Mecca word list, al-Suwaisi word list, *Mu'jam al-Asasi al-'Arabi* and *Mu'jam al-Tullab* [20].

Besides, from using a list of words, there is another way to measure the difficulty of the word by using a short form of the word length, or the length of the word. It is commonly done by calculating the average number of letters or syllables in a word than a hundred words. Theoretical calculations syllables are related with the tendency of long words by the number of syllables that have many meanings abstract and difficult to understand (Harrison, 1980). Several formulas have been developed based on this theory for example Johnson formula, Flesch, Farr-Jenkins-Paterson and Gunning [17-21].

Additionally, concerning about the Arabic text, Badi (1982) in his study about the factors of a Arabic text difficulty among Arabic speaker in school level, he found that word plays a big role in influencing comprehension and readability of the Arabic text than other factors. As for that, a study about contrastive analysis by [22] found that difficulty of identifying and recognizing the

Arab word among Malay in the term of non-Arabic speakers in Arabic morphology system which involves identifying the type and form of the word. This is including the word of *mujarrad* (divested), *mazid* (one or more of the increase letters), singular or *murakkab* (composite) especially involving *isytiqaq* process (derivation) and affix. This was proven by the study of error analysis by [23] who found the assumption of the study example done by university students.

Another method was also used to measure the difficulty of the word which is called a conceptual difficulty [17-21]. Conceptual difficulty is the frequency of the abstract and difficult meaning in a text. It is also referred to the word meaning which is the technical and non-technical. [24] found that among the factors that have the greatest potential of text difficulty are many sophisticated words. According to [17], that long word carries more abstract meanings than short words.

In Arabic language, Badi (1982) found that a word that is not commonly found is more influence the level of difficulty of a text in the way of easy-hard in reading. [25], in his point of view that based on the theory of readability words, the Arabic loan words in the Malay language as the common factor or identification is necessary as well, as the type and form of the word. Thus, based on this basic theory, indicated that more word which is commonly known, will be more easy an essay can be read and if a lot of words that are not commonly acknowledged, the more difficult that word can be read [26]. As for this matter that has been suggested, other than the word form and level of familiarity to the reader, in the context of learning Arabic in Malaysia the Arabic loan words in the Malay language factor should be consider in this matter [25].

Syntax or Sentence Structure: Traditionally, the factor of sentences structure is one of the measuring tools after the word factor in estimating the readability of a text reading [13]. It is calculated as the second most important factor by most researchers that are often taken into consideration and proved in measuring readability [17]. Strong influence that can be proven by two sources: (a) usage of the sentences of factor in all readability formulas and (b) the findings of the analysis factors in factors that contribute level of the sentence structure which is found among the two strongest factors that contribute to the readability (Klare, 1969). Two features in determining the difficulty of the texts have been studied, such as the short length of sentence and structure or complexity of sentences [16].

Meanwhile, according to [17], there are various ways

to measure the difficulty of sentence structure. A common way which is used is to look at the average length of sentences. If more the length of a sentence, the more difficulty that sentence will be understood. Next, if long sentences exist in a passage, the level of complexity of a text also will be increased. According to Yngve (1961), long sentences are often facing the complex grammatical structures [27]. Usually, in measuring length-short of a certain sentence is to see the average number of words in a sentence [28].

There are another method is also can be used, for instance by calculating the percentage of simple sentences (one layer) compare to complex sentences (layers) in the text of composition measured. The clauses and phrases with a preposition can also be an indication of a complex sentence. Generally, theories related to sentence difficulties concluded that a simple reading material has short sentences and simple to use that little preposition [17] and long sentences usually contain a lot of information [27].

In the context of the Arabic language, Badi (1982), beside of words factor, long sentences and complex grammatical structure also contributes to the difficulty in reading and understanding the Arabic text. [29] describes in his study, the difficulty of sentence structure is derived from the Arabic grammar system that relies on i'rab element (conjugation)) in interpreting meaning and a part of a phenomenon sentence structure that does not exist in the Malay language. In fact, according [30], the difficulty of reading a sentence structure can be affected when the structure of Arabic sentences used less popular or common in students. Therefore, the selection of the text by the student is necessary to read the text can be read properly [31]. Besides of the word element, the level of difficulty of an Arabic sentence can be identified such as a form sentence from simple sentences, complex sentences, short sentences, long sentences, clear sentences and sentences from different figurative language of the Malays. If the sentence is formed that is characterized by simple, short and clear so it is easy to understand, but if the sentence is characterized by complex sentences, long or figuratively, it would be difficult for a text to be read and understood.

Density of Contents and the Concept: Logically, we can really assume that the difficulty of reading a text passage is related to the density of its content and understanding of the reader is also influenced by the level of knowledge (Alderson, 2000). In theory, the difficulty of a text can be identified when the content is quite compact compared

to the number of words in it. Besides that, abstract text content will be more difficult to understand than text describing real items, events and activities (Alderson, 2000). [32], the quantity aspect of the content of the information loaded, new information density, the density of the debate and the way information is presented.

Consequently, according to [17] described that the density of the contents of a text may be estimated indirectly based on the number of phrases position or function words. Generally, text of phrases with the word position is much higher in content and styles are more complicated. Commonly used phrases position statement of additional or extended to simple sentences that have a fill. This means that the length of the sentence increases. Thus the relationship between the usages of phrases position with the length of sentence elements in syntax or sentence structure is very high. According to Chall other elements that have been considered by most establishment of the formula compared to other element is the factor of content density.

The contents of a text can also be measured by the number of words in the content element or concept words (nouns, verbs, adjectives and adverbs) [33] or the rate of word concepts from the total words used in the text to measure. Badi (1982) specified the density of the substance in a sentence can also be difficulty of reading an Arabic text. Over all, the higher percentage of concept word in certain text will lead to the stages in difficulties to read [17].

MATERIALS AND METHODS

This study is a preliminary survey of the features of linguistic predictors in construction of Arabic formula readability for non-native speakers. This paper aims to review the level of the Arabic language textbooks, the pattern of usage of linguistic features in the reading texts of Arabic textbook and the correlation between linguistic features in order to see the relationships that tend to influence the readability of the Arabic text. Therefore, this study is a quantitative research via survey, to the High Arabic textbook (BAT) form four that already been used at the secondary level from 2003 to 2010. To achieve the objectives of the research instruments there is a set of cloze tests to determine the readability of the Arabic text, document analysis to explore the linguistic characteristics and correlation analysis to examine the strength of the relationship between linguistic features in the texts of reading textbooks BAT.

Table 1: Criteria for Arabic Text Linguistic Analysis

Category	Feature	Measurement	Example
Word	Familiarity of usage (FOU)	List of words (Ministry of Education - MOE)	The words in the word list provided by the MOE in the lower secondary level based on Syllabus.
	Easy to Identify	Arabic loan words in Malay words	The Arabic word that is found in the Malay language such as انسان, جاهل etc.
	Meaning	Concrete & abstract Real & Rhetoric	Real meaning and rhetoric (simile, metaphor, and metonymy)
	Word Structure	Root and derivative word (derivative & affixed)	Such as جمع, اجمع, جمع جموع, مجتمعون etc.
	Word form	Singular and composite word	Such as سيارة, يسألني and بسأل and فليشد, يشد and also فليشد etc.
Sentence	Usual Form of sentence	Sum of verbal sentences and nominal sentences in text	verbal sentences and nominal sentences
	Long and Short	Total sentences of verbal or nominal in a sentence	The number of verbal sentences and nominal sentences in a single sentence
	Simple and Complex	Single sentence (phrase) and compound sentences	Such as: distinctive, status, cognate accusative, adjective, genitive construction, passive voice, excluded, etc (in Arabic grammar).
	Meaning of sentence	Real & Rhetoric meaning sentence	Usual and rhetoric (real meaning, simile, metonymy, and metaphor)
Content	Density of content	Prepositions in a sentence	There are several preposition words as a conjunctions such as: بل, ثم, لكن, حتى, و او اللطف and etc. This is based on the ideas which exist in the single sentence.

For cloze test set, implementation procedures and the validity and reliability levels have been done by Kamarulzaman (2009), which he obtained for the KR_{21} value of the reliability is 0.78. Meanwhile the criteria of linguistic analysis, Cohen's kappa coefficient are a statistical measure of inter-rater agreement that indicated 0.84. The following is the table of linguistic criteria for the analysis of reading texts in BAT.

For the cloze test sample selection of reading texts in the textbook BAT Form Four, it was based on selection techniques cloze test procedures that have been forward by [34]. Thus the three texts were chosen to represent the beginning, middle and end of the textbook. This view totally same with [34] and Harrison (1980) that have

suggested the selection of three quotes in the book from different sections. For the sample of students that are undergoing this test, it involves a form four student population in SMKA schools in peninsular Malaysia. They were selected because of the background of Arabic learning students which have achieved a good level of language skills. Sampling method which is used was a stratified multistage stage cluster sampling [36]. As for that, 390 selected students were chosen for this sample. This amount is determined based on the sample size proposed by Krejcie and Morgan (1970), for a population of 5442 people (MOE, 2006) in which the location of the study involved 13 schools were randomly selected from 39 SMKA in Peninsular Malaysia.

Table 2: The measurement of readability scores

Score (%)	Readability levels
0-74	Frustrated
75-89	Instruction
90-100	Independent

Source: Rye, J. (1982)

For the cloze test, review of student answers which is based on the correct answers. Test scores are calculated based on a percentage which is obtained the overall mean for each text that being tested and the overall mean score of all the text. Meanwhile, for confirming the screening exam is done properly, the sample answer sheet has been revised and verified by three persons who really expert in this field. The overall mean score of readability test match score is suggested by [37] this was based on the cloze tests which is using multiple-choice answers. Readability scores are divided into three levels, such as; frustrated the score ranging from 0% to 74%, the level of instruction score between 75% to 89% and independent level, between 90% and 100%. The levels as shown in the table 2:

As for data analysis and text of content analysis based on the features of text linguistics, descriptive analysis based on the frequency and percentage analysis is used. According to [38] ordinary methods that is used in analysing the contents as frequencies and percentages are based on categories that identified. A total of 15 texts, which is used in the text book reading BAT that been analysed. The inferential analysis is to explain and describe the relationship or correlation between variables and the correlation between variables or achievement test scores of students in cloze test. In this study, the strength of correlation obtained between variables interpreted based on the scale of Healy et al. (1997, p 82). He said in most cases in the social studies of science, the correlation is less than estimated 0:10 feeble, 0:10 to 0:30 consider as moderate and can be ignored, while the correlation of 0:30 are generally high and high correlations indicated strong verification.

Table 4: Percentage of linguistic features based on category of word (average number of words per text = 273 from 15 reading texts)

Code	Features of word	Percentage Average word per texts
1	The word is not from the word list of MOE and not from the loan words (FOU)	24.93
2	Word Meaning (abstract / rhetoric)	11.93
3	Word structure (derivative and affixed)	19.07
4	Word form (composite)	7

RESULTS

From cloze test which is performed on the samples to determine the level of the textbooks surveyed, found that obtained the overall score of 48.50 percent, which is at the level of frustration. The following is a table of test scores:

Table 3 above showed the cloze test scores of all texts tested between 46.75 percent and 50.50 percent; all levels indicated the level of frustration. From the linguistic analysis that has been performed on 15 textbooks showed usage patterns of various linguistic features. Generally, pattern of linguistic features are as follows:

Categories of Word: The following tables that are presented about the findings of linguistic analysis in categories of word:

Table 4 above demonstrated the first features involved nearly 25 per cent of the total number of words in reading texts that have been analysed. Meanwhile, the second features represented close to 12 percent, third features 3 was 19:07 per cent and fourth feature was only 7 percent.

Categories of Sentence: The following table presented the findings of the linguistic analysis of text categories:

Table 5 above demonstrated the average of sentence for 5th and 6th features which are the same frequency. For form of features sentence 7th found that a little bit more than form of 8th features sentence.

Table 3: Mean and Standard deviation of readability level scores according to texts and total scores

	Mean	Standard deviation
Texts A	50.50	12.72
Texts B	46.75	14.65
Texts C	48.25	14.36
Total scores	48.50	11.78

Table 5: Average of frequency and percentage of linguistic features based on category of sentence

Code	Sentence Feature	Form of sentence	F	%
5	Type of sentence (commonly)	Verbal sentence (VS) / 1 text	10	
6		Nominal sentence (NS) / 1 text	9.93	
7	Word form	Long verbal sentence (LVS) / 1 text	3.53	
8		Long nominal sentence (LNS) / 1 text	2.87	
9	Sentence complexity (SC)	phrase / 1 sentence	6.60	
10	Sentence meaning (rhetorical) (RS)	Rhetoric sentence / number of simple sentence / text		18.60

Table 6: Correlation matrix between all variables linguistics

Code of Linguistics Feature	2	3	4	5	6	7	8	9	10	11
1	.074	-.112	.124	-.226	.352	-.228	-.293	.132	-.214	-.014
2		.043	.166	.000	.231	-.284	.315	.374	.289	.080
3			.109	-.177	-.407	-.195	-.149	.257	.524	.418
4				-.043	-.259	-.154	.139	-.087	-.119	.371
5					.084	.562	.292	-.071	-.273	-.051
6						-.073	.026	-.244	-.480	-.633
7							.088	.162	-.307	.185
8								.217	-.079	.285
9									.071	.766
10										.135
11										

Meanwhile, in the complex sentences averaged indicated simple sentences in a phrase are seven sentences. The text feature is a rhetorical form of sentence which is indicated that 18.6 percent of the total simple sentences in the texts which has been analysed.

Category of Content Density: Density of content is calculated based on a total of simple sentences per paragraph. In the analysis performed on the 15 reading texts in the textbooks surveyed found the average frequency of total contents in one sentence is seven (7) items.

To explore the strength of the relationship between linguistic variables in the reading texts in the BAT Form four, the correlation analysis performed by Pearson is necessary needed for this test. Below is the table of correlation matrix between features of linguistics which is analysed:

Based on Table 6, there are a few cases demonstrated a strong correlation between linguistic variables with the correlation (r) which is high, exceeding 0.30. From the above table which can be summarized in few cases which is high correlation with the extent and direction of the various relationships and the percentage of shared

variance between the two variables which is the correlation is at level of high 4.7 such as the following table:

From Table 7 above can be summarized that there are four cases of relationship which has a strong correlation coefficient that defines the direction of the relationship which is strong, such as; the VS and LVS, building words and meaning of sentence, NS and content and SC and content. The cases of correlation is likely to have an influence as well as the potential of being a strong predictor of how difficult or easy readability of reading texts in BAT textbooks for form four compared to other cases that have a high correlation coefficient of medium and low.

Actually, to explore the consistency of usage in linguistic features in 15 texts analysed. As for that, the following is a table of standard deviation for each of the linguistic features:

Based on the standard deviations in Table 8, linguistic features can be seen from the most consistent distribution of the usage which is sentences complexity (SC) to the most non-consistent frequency of usage, such as the rhetorical (*balaghah*) sentence (RB) in texts.

Table 7: High correlation cases from relation and the share of total variances.

High correlation case	The coefficient of correlation	Relation	The share of total variances.
Word Meaning (2) and LNS (8)	0.315	Positive	9.92 %
FOU (1) and NS (6)	0.352	Positive	12.23 %
Word form (4) and content (11)	0.371	Positive	13.76 %
Word Meaning (2) and SC (9)	0.374	Positive	13.98 %
Word Structure (3) and content (11)	0.418	Positive	17.47 %
LNS (8) and Meaning of sentence (10)	-0.307	Negative	9.42 %
Word Structure (3) and NS (6)	-0.407	Negative	16.56 %
NS (6) and Sentence meaning (10)	-0.480	Negative	23.04 %
Word Structure (3) and Sentence meaning (10)	0.524	Positive	27.45 %
VS (5) and LVS (7)	0.562	Positive	31.58 %
VS (6) and content (11)	-0.633	Negative	40.07 %
SC (9) and content (11)	0.766	Positive	58.76 %

Table 8: Consistency distribution of linguistic features in the 15 texts based on standard deviation

Code	Linguistic Features	standard deviation
9	Sentence Complexity (SC)	1.64
11	Content	1.88
8	Long verbal sentence (LVS)	2.45
7	Long nominal sentence (LNS)	3.02
5	Verbal sentence (VS)	3.70
4	Word form	4.00
6	Nominal sentence (NS)	4.35
2	Word meaning	4.62
1	The word is not from the word list of MOE and not from the loan words (FOU)	6.49
3	Word Structure.	6.85
10	Rhetorical sentence (RB)	9.60

DISCUSSION

The results of cloze test showed that the level of readability of reading texts in the textbooks studied BAT to be at the level of frustrated. This indicated that reading texts is not suitable for the learning materials for target readers. To identify the linguistic features in these texts that can contribute to readability, analysis of linguistic features have been made to find some of the findings. Linguistic criteria in reading texts BAT Form Four textbook has been divided into three categories: words, sentences and content. The results showed that linguistic features which include the three categories is imbalance distribution of consumption as shown in Table 8 especially word category. This sequence can be observed that five linguistic features are the most balanced application in 15 reading texts are composed of text and content category, while the remaining six characteristics indicated a less distribution of non-consistent such as characteristics of the word and one of features in a sentence. This means that linguistic features which have

a tendency may influence the difficulty of 15 reading texts of BAT textbook Form Four consistently is focus more on feature of sentence and the text content base on its uniformity of usage in the texts studied. This does not mean that the words have no influence on the difficulty of the text, but in reading texts BAT for Form Four textbook which is the distribution of words feature that can give difficulty to read is imbalanced of frequency usage, for example the word is not in the list of MOE words and not Arabic loanwords in Malay (FOU) in the text with the distance of percentage distribution in the texts between 13% to 40% with an average usage per text of FOU by 25%, with the lower text of FOU usage (13%) and there is a relatively high percentage of FOU usage (40%).

When viewed with more specific the relationship of linguistic features of the elements of words, sentences and content from tables 6 and 7, showed that linguistic features which have a strong positive relationship involving eight combinations of variables such as its contents sentences, sentences with words and words to the content. The combination of linguistic variables that

have the highest correlation is between SC and content ($r = 0.766$), followed by VS and LVS ($r = 0.562$), words structure and sentence meaning ($r = 0.524$), words structure and contents ($r = 0.418$), the words meaning and SC ($r = 0.374$), word form and content ($r = 0.371$), FOU and NS ($r = 0.352$) and the words meaning and LNS ($r = 0.315$).

Consequently, the results of this correlation indicated the relationship between SC (sentences complexity) and contents is high which 58.76% the variance between the two variables is shared in determining the difficulty of a text. The analysis showed that the average density of simple syntax element and content in one sentence for all 15 texts studied are similar to the seven (7) simple sentences and seven (7) ideas. This gives a picture of complex sentences, which is sentence from a few simple syntax sentences has relation with the density of the content. In fact, that the both variables are the most consistent feature of linguistic usage than others. This means that the level of understanding of the content of Arabic literature as a foreign language depends on the skill of the reader to read the Arabic syntax system.

The other linguistic features that possess a strong positive correlation with the SC and the content are the words form, the words meaning and words structure. This matter is expected in view of the formation of perfect sentences composed from elements of words, simple sentences and messages to be delivered. However, the correlation between words and sentences and between words and content is smaller than the correlation between sentences and contents. Hence the difficulty of reading texts BAT Form Four textbook has relation with the form of long sentences composed of simple syntax sentences. This text consists of the elements of word featured such as affix and derivation, abstract words and clause words. The combination of word elements and some simple syntax sentences in one sentence makes it difficult for students to understand the content to be delivered. This finding supports the study of Muhammad Zain (1994), Kamarulzaman (1998) and Muhammad Bakhit (1998) stated that the elements of long sentences consist from foreign morphological system for speakers of Malay students can be difficult for Malay students to read and understand the language, if does not revealed and to be understood properly. Thus, in reading Arabic literature as a foreign language, students should be proficient in the language syntax system because this will help students to understand the content that delivered by the author.

In this context, Drews and Schleifer (1993) found that when the expectations of the meaning of a message decrease, the reader will face difficulty to understand the written message. Rye (1982) also noted when a text has meaning of high expectations; the message will be easily to read. This view exactly agree with the Arab proverb about the Arabic language that stated if properly *irrab* or (flection system of grammar) a person would have understood it correctly, some of them viewed that *irrab* is a part or branch of the meaning [39]. The validity of difficulty reading texts BAT Form Four textbook is strengthen with an average readability scores of students who were at the frustration level (49%).

Hence, for what has been suggested by Muhammad Zain (1994), Kamarulzaman (1998) and Muhammad Bakhit (1998), which asserted the system syntax and morphology of the language to be mastered by students to enable them to read texts that the sentences are quite complex with average of seven (7) simple syntax per sentence in a text of BAT textbook Form Four. Therefore, in the context of readability of Arabic reading materials for foreign speakers especially Malay students at SMKA about the level of sentences in simple syntax and morphology of the Arabic language in the text must be taken into consideration because of its connection with the content and meaning of the reading text message.

Besides the SC (sentence complexity) variables and the content that discussed above, the linguistic characteristics that are also strongly correlated between VS (verbal sentence) and LVS (long verbal sentence) ($r = 0.562$). Both of these variables are the most balanced frequency of usage among 15 texts surveyed after SC and content. According to Muhammad Zain (1994) verbal sentence in Arabic is an element that is not in Malay sentences characteristics, thus this will face difficulty to Malay students which is not familiar with this form of sentences. Based on the studies of readability such as [16-17], [40], Pikulski (2002) and Gunning (2003), the element of sentence is the second most important element of measuring readability. In this context, this study proved that the potential of sentence element contributes to the difficulty of reading texts BAT Form Four textbook based on the homogeneity of its usage in 15 texts studied.

Based on the results, indicated the analysis of the average Long Verb Sentence (LVS) in a passage are four (4) sentences, while the frequency of the Verbal Sentence (VS) in a text is 10. The findings also showed variance shared between LVS and shared VS was 31.58%. Apart from LVS average of four (4) sentences per text with a standard deviation=3.02, there was Long Nominal

Sentence (LNS) which average of three (3) sentences per text with a standard deviation=2.45. Where these two variables are between four linguistic features most balanced of its usage frequency in 15 texts studied. As the VS is not a commonly use by Malay students, the frequencies of usage LVS in text possible difficulties to students to understand of reading the text, in addition with the LNS in the text.

This could increase the level of difficulty of text among students to read because of it's a bit awkward compared to the practice of students, which long sentence consisting of several verbal sentences as well as a long sentence nouns are also used. According to Ruddell (1965), the level of reading comprehension of children is easier to understand if the sentences in the text are familiar to them. In this context, [17] and Khadijah Rohani (1982) emphasized longer of a certain sentence, the more difficult to understand and as often lengthy sentences in a text it adds another level of complexity of a text, this is because it brings a lot of information. The fact is, based on this study it will not only increase the compact information, but structure of syntax also becomes more complex.

As for that, [41-50] and Harrison (1980) found that students lack an understanding of reading texts with some complex long sentences and packed with information content. This is because the reader does not have guides that might help him to understand the message that is desired by the author. Therefore in this study, the students do not have enough skills and knowledge of the Arabic system to allow them to be guided as well as to comprehend the texts that they read.

Apart from that, the correlation between the structure of words (derivative words and affixed) and RS (rhetoric sentence) also showed high values and strong relationship ($r = 0.524$). The analysis in this study showed the frequency of words structure per text is 19% with a standard deviation of 6.85 and the interval of percentage of the minimum and maximum of its usage in the text between 9% and 32% and the frequency of RS per text also is 19% with a standard deviation=9.60 and the interval of percentage of the minimum and maximum of its usage in the text between 9% to 41%. Although these two linguistic features are the most imbalanced frequency of use in the 15 texts analysed, only 27.45% shared variance between these features. This showed the word of rhetorical meaning (*Balaghah*) whether in simile, metaphor or *Majaz*, have a strong relationship with the derivative words and affixed. This indicated that the tendency of the derivative and affixed words can mean

rhetorical and abstract meaning and can also influence the level of difficulty of an Arabic text among Malay students.

Commonly, the measurement which is used in measuring word besides base on the word list is by counting the letters or syllables in a word. This theory mentioned the length of a word is dependent on the number of letters or syllables, when a word is long it also has abstract meaning and difficult to understand (Chall & Dale, 1995, Harrison, 1980 and Khadijah Rohani 1982). This calculation is suitable to use for many languages which is mainly relies on the affix system in the form of words such as English and Malay. For languages that are dependent on the derivative system (*'isytiqaq*) rather than compensation in the word formation such as Arabic language (Kamarulzaman 1998), this calculation method can also be applied to readers of Arabic speakers (David, 1977 & Badi 1982). However, to determine the level of difficulty from the perspective of foreign speakers it also should be viewed in terms of words structure either from root or derivative or affixed words because it relates to aspects of the recognition and interpretation.

Based on this study, the findings are not far compared to the studies in English or Malay language as stated above. Based on the words structure, which is derivative and affixed words that are strong correlation to the rhetoric and abstract meaning. Hence, if in certain text possess a high percentage of this kind of words, probably a lot of rhetoric and abstracts meaning contained in the text. This matter can influence foreign speaker especially Malay students to understand the Arabic text that have language culture which is strange to them. According to Harrison (1980) and Venable (2003) conceptual difficulty is more important compared with calculations which based on word lists, where some of the factors which have great potential for influence text difficulty which is many of abstract and sophisticated words.

CONCLUSION

In this context of study, the linguistic criteria is identified by having high correlation in determining the readability of text books BAT Form Four is the complex sentences that are long sentences which is combination of simple syntax sentences in a one sentence. In fact, the frequency of complex sentences with simple sentences by an average of seven has a high relation to the content or the contained idea in the passage. Besides that, the feature of complex sentences, sentences that are not commonly used by foreign students, especially Malay

student, such as verbal sentence either long or short sentences which is also have a fairly strong correlation affect to the readability of text BAT book for form four. Additionally, to its strong ties with complex sentences and content are some of the words, the structure of words (derivative and affixed), word that means abstract and clause. Thus the characteristics of linguistic that need to be consider in evaluation of readability in text book in level of the upper secondary textbooks are complex sentences, contents density, long verbal sentences and derivative, affixed and abstract words and word forms. Even to build Arabic text readability formula for foreign speakers, this feature has the potential to be the basis of measurement. Consequently, this study also shows the Arabic text reading as a foreign language, especially among Malay students in Malaysia, the level of knowledge and skills of the Arabic system can affect the understanding of the text of reading and can also determine the reading level of the text which being read. Based on the level of linguistic analysis that can be concluded is the language in the texts of reading textbooks BAT Form Four involving several features in text, content and word is beyond the level of knowledge and language skills of students.

REFERENCES

1. Pintrich, P.R., 1999. The role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research*, 31: 459-470.
2. Kamarulzaman Abdul Ghani, 2011. Kebolehbacaan buku teks Bahasa Arab Tinggi Berasaskan Ujian Kloz dalam Kalangan Pelajar di SMKA. *GEMA Online® Journal of Language Studies*, 11(2): 53-66.
3. Al-Khalifa, H.S. and A.A. Al-Ajlan, 2010. Automatic Readability Measurements of the Arabic Text: An Exploratory Study. *The Arabian Journal For Science and Engineering*, 35(2C): 103-124.
4. Dubay, W.H., 2002. Using readability tools [Electronic version]. Fourth biennial conference of the PLAIN Language Association International proceedings. September 26-29. Toronto: Plain Language Association International.
5. Newbold, N. and L. Gillam, 2010. The linguistics of readability: The next step of the word processing. *Proceedings of the NAACL HLT 2010 Workshop on Computational Linguistics and Writing*. Los Angeles: California, pp: 65-72.
6. Burke, V. And D. Greenberg, 2010. Determining Readability: How to Select and Apply Easy-to-Use Readability Formulas to Assess the Difficulty of Adult Literacy Materials. *Adults Basic Education and Literacy Journal*, 4(1): 34-42.
7. Zulazhan Ab. Halim, 2012. Kebolehbacaan Buku Teks Balaghah Sijil Tinggi Agama Malaysia Di Sekolah-Sekolah Menengah Agama Negeri. PhD Thesis, unpublished: National University of Malaysia.
8. Hamilton, C. And M. Shinn, 2003. Characteristics of Word Callers: An Investigation of the Accuracy of Teachers' Judgments of Reading Comprehension and Oral Reading Skills. *School Psychology Review*, 32: 228-240.
9. Sperling, R., 2006. Assessing reading materials for students who are learning disabled. *Intervention in School and Clinic*, 41: 138-143.
10. Fry, E., 2002. Readability versus leveling. *Reading Teacher*, November, 56, 3, 286, *Academic Search Elite*: 0034-0561.
11. Al-Ajlan, A.A., H.S. Al-Khalifa and A.M.S. Al-Salman, 2008. Towards the Development of an Automatic Readability Measurements for Arabic Language. *Third International Conference on Digital Information Management*, pp: 506-511.
12. Daud, B.A., 1977. 'Alaqah al-maqrū'iyah bi ba'ḍi al-mutaghayyirat al-lughawiyah. Masters Thesis, unpublished. Baghdad: Faculty of Education, University of Baghdad.
13. Pikulski, J.J., 2002. Readability [Electronic version]. U.S.A: Houghton Mifflin Company.
14. Alderson, J.C., 2000. *Assessing reading*. Cambridge: Cambridge University Press.
15. Day, R.R., 1994. Selecting a passage for the EFL reading class. *TESOL Quarterly*, Jan-March, 32, 20-32. Accessed on 8/8/2005 Retrieved from : <http://exchanges.states.gov/forum/vols/vol32/no1/p20.htm>.
16. Klare, G.R., 1969. *The measurement of readability* (3rd ed.). Ames, Iowa: Iowa State University Press.
17. Chall, J.S., 1974. *Readability: An appraisal of research and application*. Epping Essex: Bowker Publishing Company.
18. Badi, K.G., 1982. Tahdid 'awamil al-suhulah wa al-Su'ubah fi maddah al-maqrū' lada talamidh al-marhalah al-ibtida'iyah. PhD Thesis, unpublished. Cairo: Faculty of Education, Ain Syams University.
19. Chall, J.S. and E. Dale, 1995. *Manual for the new Dale-Chall readability formula*. Cambridge, MA: Brookline Books.

20. cAbd al-Rahman Chik, 1994. Ma'ayir al-tahakkum fi al-alfaz fi ta'lim al-^oArabiyyah li al-mujtama'at al-Islamiyyah fi Janub Syarq Asia. PhD Thesis, unpublished. Alexandria, Egypt: Faculty of Art, Alexandria University.
21. Harrison, C., 1980. Readability in the classroom. Cambridge: Cambridge University Press.
22. Kamarulzaman Abdul Ghani, 1998. Al-Lughah al-^oArabiyyah wa al-Maliziyyah min al-nahiyah al-Sautiyyah wa al-Sarfiyyah: Dirasah wasfiyyah taqabuliyyah. Masters Thesis, unpublished. Faculty of Darul-Ulum, Cairo University: Cairo.
23. Muhammad Bakhit Hj Ali, 1998. Tahlil al-akhto' al-lughawiyah lada tullab Jami'ah Malaya bi Malizia. Masters Thesis, unpublished. Cairo: Fakulti of Darul-Ulum, Cairo University.
24. Venable, G.P., 2003. Readability case study and scenarios. ProQuest Education Journals Jul-Sep, 23, 3, Lippincott Williams & Wilkins, Inc. ProQuest Education Journals, pp: 248.
25. cAbd al-Rahman Chik, 2006. Qabiliyyah al-kalimah li al-ta'allum wa ahammiyyatuhuli muta'allimi al-lughah al-^oArabiyyah al-natiqin bi ghairiha. Proceedings of Fifth Islamic Education Discourse, Bangi: Faculty of Education, UKM., pp: 389-396.
26. Wright, B.D. and A.J. Stenner, 1998, June. Readability and reading ability. Paper presented to the Australian Council on Education, June. Australia. ERIC Document Reproduction Service No. ED 435 979.
27. Khadijah Rohani Md Yunus, 1989. Formula Kebolehbacaan: Satu Cara Objektif Untuk Menentukan Tahap Kebolehbacaan Bahan-Bahan Bacaan. Dewan Bahasa (Jurnal Pembinaan dan Pengembangan Bahasa), 31(4): 274-288.
28. Gunning, T.G., 2003. The role of readability in today's classroom. ProQuest Education Journals, Jul-Sep 2003, Lippincott Williams & Wilkins, Inc., 23: 3.
29. Muhammad Zain Mahmud, 1994. Al-Nizom al-nahw fi al-lughah al-^oArabiyyah wa al-Maliziyyah: Dirasah fi al-tahlil al-taqabuliy. PhD Thesis, unpublished. Alexandria, Egypt: Faculty of Art, Alexandria University.
30. cAbd al-Wahhab Zakariyya, 1999. Ma'ayir ikhtiyar al-tarakib al-nahwiyyah fi ta'lim al-lughah al-^oArabiyyah bi wasfiha lughah thaniyah. PhD Thesis, unpublished. Alexandria, Egypt: Faculty of Art, Assiut University, Egypt & Post Graduate Academy Oxford, UK.
31. Al-Khuli, M.A., 1998. Al-Tarakib al-syasi'ah fi al-lughah al-^oArabiyyah: Dirasah Ihso'iyyah. Suweileh, Jordan: Dar al-Falah wa al-Tawzi'.
32. Marohaini Yusoff, 1999. Strategi pengajaran bacaan dan kefahaman. Kuala Lumpur: DBP.
33. Zukowski, J.A., 1978. Readability criteria used in materials selection for English as a second language. Ph.D. Dissertation, unpublished. USA: University of Arizona.
34. Toiemah, R.A., 1984. Ikhtibar al-tatimmah wa ta'lim al-^oArabiyyah ka lughah thaniyah.
35. Moyle, D., 1971. Readability-the use of cloze procedure. In Merritt, J. (ed.), Reading and the curriculum. Ward Lork.
36. Neuman, W.L., 2003. Social research methods: qualitative and quantitative approaches (5th ed.). U.S.A: Pearson Education, Inc.
37. Rye, J., 1982. Cloze procedure and the teaching of reading. London: Heinemann Educational Books.
38. Singleton, R.A. and B.C. Straits, 2005. Approaches to social research (4th ed.). New York: Oxford University Press.
39. cAbd al-^oalim, A.B.S.M., 1990. Miftah al-I^orab. Kaherah: Maktabah Al-Sa'adah.
40. Gilliland, J., 1972. Readability. London: University of London Press Ltd.
41. Miller, G.A. and J.A. Selfridge, 1950. Verbal context and the recall of meaningful material. American Journal of Psychology, 63: 85-176.
42. Drews-Bryan, A. and L. Schleifer, 1993. A note on readability accounting textbook passages and corresponding GAAP. Accounting and Finance, December, pp: 24-40.
43. Healy, J.F., E. Babbie and F. Halley, 1997. Exploring social issues: Using SPSS for Windows. California: Pine Forge Press.
44. Al-Heeti, K.N., 1984. Judgment Analysis Technique Applied to Readability Prediction of Arabic Reading Material. Tesis PhD, University of Northern Colorado.
45. Kamarulzaman Abdul Ghani, Hassan Basri Awang Mat Dahan and Nik Mohd Rahimi Nik Yusoff, 2009. Penggunaan ujian kloz dalam mengukur kebolehbacaan teks Arab untuk pembaca bukan Arab di Malaysia: Satu kajian rintis. Journal of Islamic and Arabic Education, Issue, 2(1): 15-30.
46. Kamarulzaman Abdul Ghani, 2010. Kebolehbacaan buku teks Bahasa Arab Tinggi Tingkatan Empat di SMKA. PhD Thesis, unpublished. Kuala Lumpur: University of Malaya.
47. Kementerian Pelajaran Malaysia, 2006. Senarai bilangan pelajar tingkatan empat di SMKA seluruh Malaysia. Putrajaya: Education Planning And Research Division.

48. Ruddell, R.B., 1965. The effect of oral and written patterns of language structure on reading comprehension. *The Reading Teacher*, 19: 270-75.
49. Sekaran, U., 1992. *Research methods for business: A skill-building approach*. New York: Wiley & Sons Inc.
50. Dlm 'Abdullah Sulaiman al-Jarbu', 'Abdullah 'Abdul Karim al-'Abbadi, Tammam Hassan 'Umar & Rusydi Ahmed Tu'aimah. *Majallah Ma'had al-Lughah al-'Arabiyyah*, Mecca: University of Umm el-Qura., 2: 513-556.