

USING READABILITY TO MEASURE THE DIFFICULTY OF TEXTS IN ESP MATERIALS DESIGN

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Introduction

When dealing with materials design, teachers usually face issues such as material sources, appropriateness and relevance, teachability of content and tasks, or attuning to learners' proficiency levels. In recent decades, many applications have been developed to assist language teachers and seemed to make innovative changes in teacher's work. This paper addresses a tool of text analysis that scientifically interprets linguistic elements in measuring a text's difficulty. This insightful method might have eliminated subjective judgments in selecting appropriate texts to develop materials suitable for their students' difficulty level. In addition to providing a reliable measurement, this text analysis tool also helps save time, effort, and especially costs (most of which are free) to carry out activities and research projects related to language.

Literature Review

The choice and selection of materials is a critical step that means the difference between success and failure of the designed materials, as Fortez (1995:75) claims:

"Selecting input texts is one, if not the most essential, in the entire process of preparing and writing instructional materials. Text selection involves a considerable amount of time and effort on the part of the writers in searching for, reading, and gathering materials for the book while at the same time critically evaluating the appropriateness of these materials."

In ESP, the choice of authentic materials is much emphasized. According to Fortez (1995:75), for ESP materials, the source can be from:

"...various sources, such as textbooks in the different content area courses in the tertiary level, general reference materials, print ads, pamphlets, brochures, new items, feature articles, poems, and hand-out from contents areas."

The materials chosen must be *"interesting, challenging, and open to serious and comprehensive study"* (Penaflorida, 1995:185) and focus on a particular field. The input resources that we give students to work with must be, to some degree, authentic and relevant to their interests and language level.

Many criteria for selecting materials are established as guidelines for materials writers. Lee & Vanpatten (1995:198), as cited in Swaffar, Arens, and Byrnes (1991:137-139), offer critical considerations in selecting materials for L2 readers. According to them, it is advisable to select:

- topics familiar to students
- topics of interest to students
- texts with overt development of ideas
- texts with greater structural organization
- texts with a recognizable agent or concrete subject
- texts that have little extraneous prose
- texts that have unambiguous intents
- texts of appropriate length

Having the same idea on the problem Fortez (1995:73-74) suggests criteria in text selection by settling several essential questions:

1. Is the text interesting and/or familiar?
2. Is the text readable? Is the text easy or difficult to understand?
3. Does the text challenge the students to think?
4. Does the text have the potential to generate varied exercises, tasks or activities?
5. What language skills are needed and/or required for the learners to understand/ analyse the text?
6. What skills can be developed and or taught via the text?
7. Is the length just right or does it have to be shortened/excerpted or lengthened?
8. Is the text teachable?
9. Does the text need supplementary materials?
10. Is the text a good example of the expository development/ rhetorical function being taught?

Among any criteria, when selecting the texts for materials design, writers must consider their difficulty level primarily based on conceptual and lexical criteria, relevance of content, language level, interest, relevance, and the possibilities of exploiting varied techniques. Day (2000) summarizes the seven factors for selecting input texts:

- Interest
- Exploitability
- Readability
- Lexical knowledge
- Background knowledge
- Syntactic appropriateness
- Organization

And he also encourages teachers themselves to add to these factors and to develop their own lists of criteria for their own specific situations.

To sum up, teachers or writers must carefully and critically select materials before adopting them for materials design to ensure that they fit the proficiency levels and needs of their students and the goals of instruction.

Using Readability to measure the difficulty of input texts

Texts chosen to design a reading lesson must be at a level that the students can cope with. Thus, teachers or writers must evaluate the difficulty in selecting appropriate texts. Researchers have long been concerned with identifying what features make text readable to adjust text difficulty to the intended readership. Several text features have been studied to predict the difficulty of materials. In his review of relevant readability research, Alderson (2000) claims that there are some features causing difficulty for text readers, such as topic, syntactic complexity, cohesion, coherence, vocabulary, and Readability. This leads to the question of how a reading passage's relative difficulty is defined. In other words, how to measure Readability?

Regarding the term "readability" Stephens (2000) writes

"Readability describes the ease with which a document can be read. Readability tests, which are mathematical formulas, were designed to assess the suitability of books for students at particular grade levels or ages."

Readability formulas were developed in the 1940s as a good starting point for considering better writing based upon empirical research into text difficulty. The principle is to measure surface features of text by checking how many words there are on average per sentence. It is commonly assumed that, short

sentences tend to be syntactically simpler than long sentences. In an article reviewing research in the area of Readability, Alderson (2000) makes a primary distinction between techniques designed to measure Readability – for example, comprehension and cloze tests – and formulas developed to predict Readability. The latter use counts of language variables in a piece of writing to produce an index of probable difficulty for readers.

There was controversy regarding the use of the cloze technique in determining the Readability of written materials. Some researchers like Taylor (Alderson; 2000: 72 cited in Taylor; 1953) claim that the cloze could provide a more accurate estimate of Readability since it involves real readers processing tests. However, some like Alderson and Harrison (in Alderson; 2000) caution against uncritical acceptance of cloze test results. Harrison's point is

"the best measure of text difficulty is combined expert judgment, and when that is not available, readability formulae."

(Alderson; 2000: 72 cited in Harrison (1979))

A significant body of work on Readability spans the last 60 years. Chall (1958) and Klare (1963) comprehensively summarize early readability work. According to Williams *et al.* (cited in Smith, 1998), various government departments, military agencies, businesses, and education organizations use readability formulas to measure the relative difficulty of deciphering the words in their documents. In many studies, readability indexes were adopted to obtain useful information in comparing one book or text with another.

Several popular readability indexes exist, such as Dale-Chall, Spache, Fry, Flesch Grade Level, Flesch Reading Ease, FOG, SMOG, FORCAST, and Powers-Somner-Kearl. Some readability indexes estimate the reading level needed to comprehend written material, indicated by grade level. For instance, the Gunning Fog and Flesch indexes are scaled to reflect the years of education of a reader who can easily read and comprehend the piece of writing.

In setting up criteria to determine a text's difficulty level, Alderson (2000) recommends the Flesch Reading Ease formula that was first used in 1948 and is still frequently in use today. This index computes Readability based on the average number of syllables per word and the average number of words per sentence

$$RE = 206.835 - (1.015 \times ASL) - (84.6 \times ASW)$$

where ASL is the average sentence length (the number of words divided by the number of sentences), and ASW is the average number of syllables per word (the number of syllables divided by the number of words).

Williams *et al.* (2002) remarks

"The Flesch formula is one of the best-known and most popular readability measures. Flesch was primarily interested in assessing adult written material, and so he chose a difficulty index which did not relate to grades, but to a notional score out of 100. Flesch scores increase with the Readability of a passage. Comics would generally rate a reading ease score of 90 - 100, academic magazines a score of 30 - 50, and scientific journals a score of less than 30."

The Flesch Reading Ease Scores (FRES) measures Readability as follows:

Scores	Reading Ease level	Descriptions
100	Very easy to read	The average sentence length is 12 words or less. No words has more than two syllables.
65	Plain English.	Average sentence length is 15 to 20 words. The average word has two syllables.
0	Extremely difficult to read.	The average sentence length is 37 words. The average word has more than two syllables.

The Flesch Reading Ease scale

And this is a more detailed scale from the Flesch Reading Ease indexes:

0 - 29 = Very Difficult

70 - 79 = Fairly Easy

30 - 49 = Difficult

80 - 89 = Easy

50 - 59 = Fairly Difficult

90 - 100 = Very Easy

60 - 69 = Standard

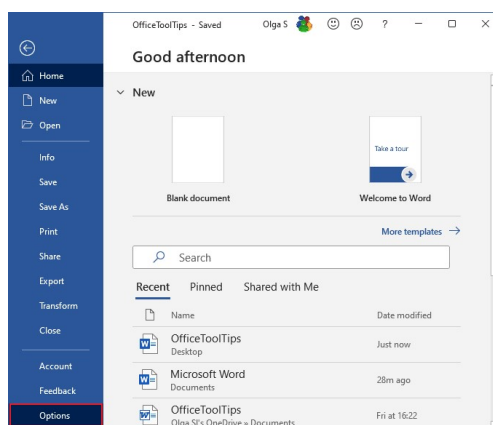
Readability Statistics in Microsoft Word

Microsoft Word is the most widely used word processor in the world. In fact, it's estimated that word is running on more than a billion devices worldwide.

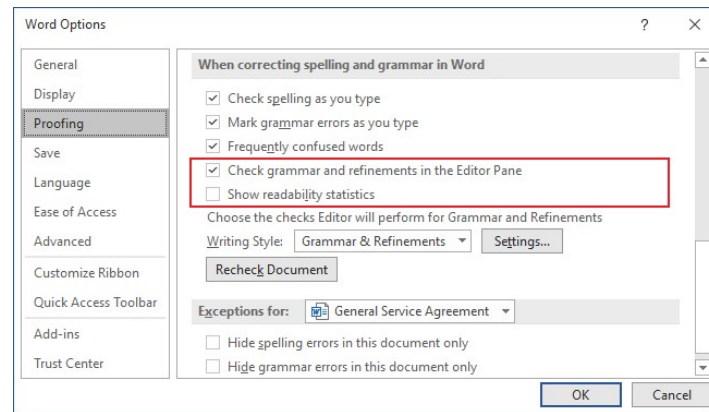
In Microsoft Word, there's a little-known feature about the application Readability that allows a user to display readability statistics as a part of the spelling and grammar check. Specifically, the feature displays information about the reading level of the document, including readability scores based on the Flesch Reading Ease and Flesch-Kincaid Grade Level

To show the readability statistic, follow the next steps:

1. On the **File** tab, click the **Options** button:

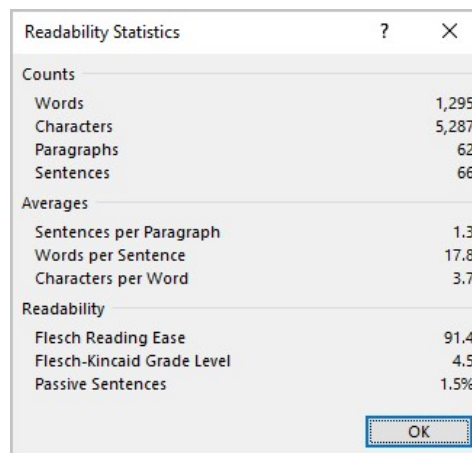


2. On the **Proofing** tab, under **When correcting spelling and grammar in word**, make sure **Check grammar with spelling** is selected.



3. Under **When correcting spelling and grammar in word**, select the **Show readability statistics** checkbox.

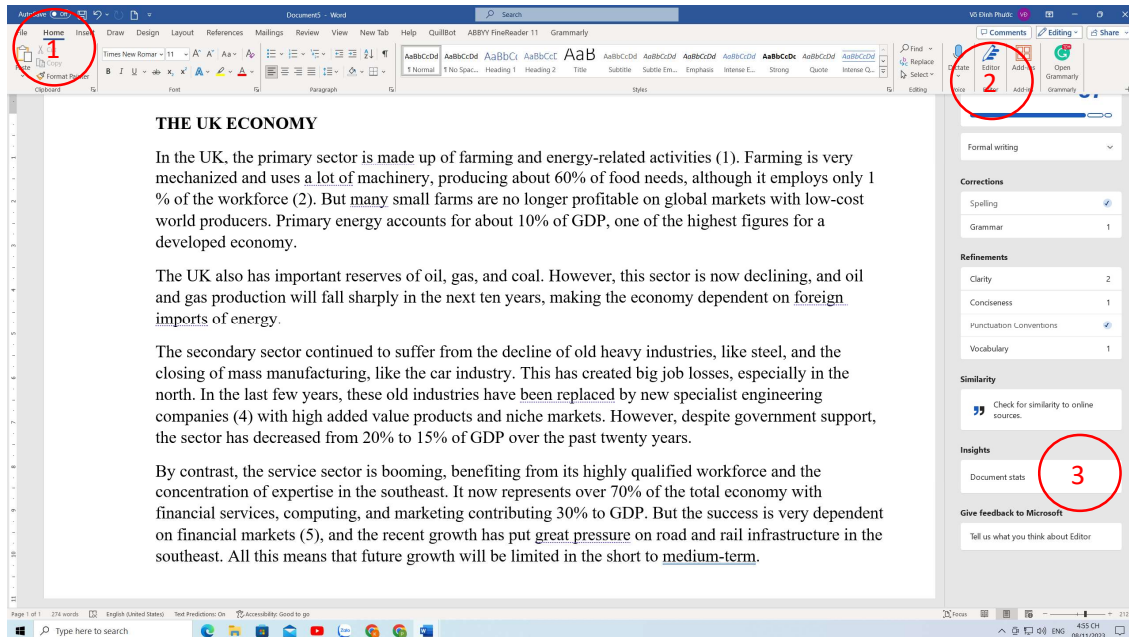
After the grammar check is complete, word displays a message box telling you that the checking is done:



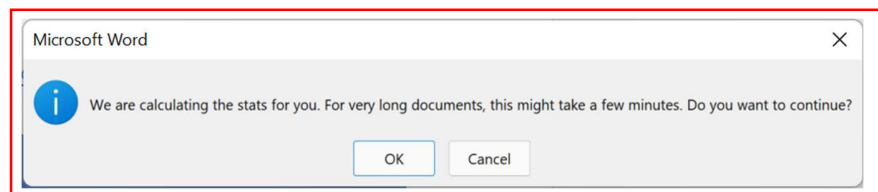
Word for Microsoft 365

When you're using Word for Microsoft 365, you can quickly see readability statistics for your document.

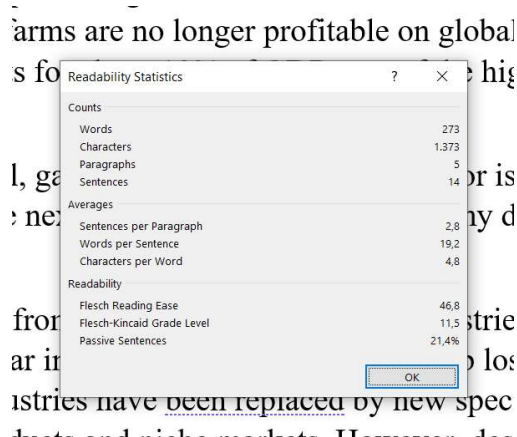
1. **Open** your Word document.
2. Select the **Home** tab. Choose **Editor**, and then go to **Document stats**.



3. A dialog box will appear letting you know word is calculating your document stats. Choose **OK**



4. MS. Word will open a window that shows you information about the statistics and reading level of your document.



text difficulty", (Alderson, 2000:73), they might be used as additional criteria to help materials writers select appropriate texts for learners.

Conclusion

It can be said that the design of teaching materials is a complex process and requires much effort, time, and deliberation. The difficulty of input texts is one of the essential pedagogical criteria the writers must take into account. In other words, the prerequisite for the success of self-designed materials in ESP is that the writers should guarantee the appropriateness of input resources by tailoring contents and tasks to the student's language proficiency level. To measure the difficulty of a text, the writers must consider many different factors. This paper does not aim to identify all those factors; it only introduces an application, that is, the feature "Readability" in MS. Word, to help teachers have a scientific foundation for selecting suitable texts for target learners.

References

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