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Readability

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Readability is generally defined by English-speaking literacy scholars as the level of knowledge and skill required to make full sense of a given printed text. This view of readability is most evident in formulas such as the Flesch Ease of Reading that was developed in 1948 based on the assumption that the fewer words in a sentence and the more familiar these words are in a given text, the less difficult it is for readers to comprehend this text. Word familiarity is an indirect yet stable indicator of students' ability to comprehend a word, which in turn has an effect on a reader's comprehension of a given text. Furthermore, the more simple and brief the sentence structures within a text, the greater the ease for readers to understand the intended messages carried within such structures.

The most currently ubiquitous readability indicator is the Flesch-Kincaid, which is essentially a revised version of the original Flesch formula, producing a grade level as its readability score. Originally developed by the U.S. Navy in 1975 to determine the relative difficulty of their various technical manuals, the Flesch-Kincaid formula has become an integral component of many widely used online reading programs and linguistic analytic tools.

Like other readability algorithms, the Flesch-Kincaid determines the word-level familiarity of a printed text by the average *frequency* of individual words (i.e., the likelihood that a reader would be exposed to a particular word based on the analysis of a corpus of books read by adults) and the average sentence length. The lower the average likelihood, or frequency value of words presented in the text, the more difficult the text is deemed for readers. Similarly, the longer the average sentence length, the more assumed difficulty in comprehending key points presented in embedded sentence structures. Simply put, the more frequently a word occurs in a language, the greater the likelihood that students will know its meaning. However, high-frequency words tend to denote more general concepts or categories such as *man* or *work*, rather than more specialized words like *radiologist* or *employment*. Thus, it may be argued that the more *frequent* a word, the greater the likelihood that while students will know its meaning, this meaning may be less precise than what was intended in the text.

Applications of readability or text analytic software for analysis, research, or text development purposes generally follow more qualitative efforts to achieve textual accuracy, coherence, and meaningfulness to readers. Even quantitative programs focused on determining textual cohesion can only do so at a lexical level; that is, the extent to which ideas presented in a text support one another can only be determined by a reader. Thus, while readability indicators offer a general idea about the difficulty of printed texts, such metrics should not be the sole guides for text development.

Readability and Text Quality

Much goes into the development of accessible and considerate texts for readers, particularly within the K–12 context. For instance, a text developer must be mindful of conceptual and linguistic parsimony. Readers should not be overwhelmed by the amount of conceptual information presented in a text, nor should there be too many unfamiliar words or phrases that would inhibit understanding, especially if those words or phrases are not providing critical information. Equally important is the presentation of concepts that foster accurate understandings and avoid potential misconceptions that may inadvertently develop from the use of everyday language to describe concepts. Thus, there is a tension between accuracy and familiarity for readers, which has a direct impact on the relative readability of a given text, and as such, school-based texts must have an optimal balance between these two qualities. Conceptual mapping of textual content can be helpful in clarifying ideas represented in a text, which in turn affects its general readability.

Any account of text difficulty that uses sentence length to establish the readability of texts assumes, at least implicitly, that unpacking the ideas within a single, complex sentence is more difficult for readers than making connections across related propositions stated in separate sentences. As such, a short sentence in itself may be easier to comprehend than a complex one. However, the challenge may come when the reader needs to integrate a cohesive meaning from a series of short sentences, which leads to greater demands on readers to make accurate inferences about how such short sentences connect and support one another in communicating larger ideas. Questions remain about whether the memory burden of complex sentences trumps the inference demands of integrating ideas across separate propositions.

The Multidimensionality of Readability

Readability formulas account for only a few variables that affect the level of difficulty of a text. Such formulas cannot take into account the inherent interest and motivation that readers may have when engaged in a printed text. The greater the interest in or desire for reading a particular text, the greater a reader's capacity for comprehending such a text. Stylistic qualities can also affect the relative ease of comprehending a text. For example, ideas inscribed in first person (i.e., using *I* and *you*, as if the author were having a personal conversation with a reader) tend to be easier for readers than if these ideas are written in passive voice. Narrative structures that follow a familiar pattern of conflict and resolution have been recently found to support comprehension of conceptual information compared to nonnarrative versions of the same content.

Determining the relative difficulty of texts requires both qualitative and quantitative approaches that include the considerations of genre, voice, and topic interest. A formula cannot account for the polysemy of words like *base*, which may at first seem like a generally familiar word (running to first *base*) but may actually be a specialized term (a *base* material use in chemistry).

See also Literacy; Reading Comprehension; Reading Comprehension Assessments

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Further Readings

Arya, D. J., Hiebert, E. H., & Pearson, P. D. (2011). The effects of syntactic and lexical complexity on the comprehension of elementary science texts. International Electronic Journal of Elementary Education, 4(1), 107.
Arya, D. J., & Maul, A. (2012). The role of the scientific discovery narrative in middle school science education: An experimental study. Journal of Educational Psychology, 104(4), 1022.
Bowey, J. A. (1986). Syntactic awareness in relation to reading skill and ongoing reading comprehension monitoring. Journal of Experimental Child Psychology, 41, 282–299.
Klare, G. R. (1984). Readability. In P. D. Pearson (Ed.), Handbook of reading research: Vol. 1 (pp. 681–744). New York, NY: Longman.
McNamara, D. S., Kintsch, E., Songer, N. B., & Kintsch, W. (1996). Are good texts always better? Interactions of text coherence, background knowledge, and levels of understanding in learning from text. Cognition & Instruction, 14(1), 1–43.
Pearson, P. D., & Camperell, K. (1981). Comprehension of text structures. In J. T. Guthrie

(Ed.), Comprehension and teaching: Research reviews (pp. 448–468). Newark, DE: International Reading Association.