

READABILITY RESEARCH

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Primary Disciplinary Field(s): Communications, Psycholinguistics, Education, Technical Writing

1. Core Definition

Readability research is an academic and applied discipline dedicated to the analysis, measurement, and improvement of written material based on its level of difficulty, comprehensibility, and other intrinsic characteristics, such as the degree of human interest it evokes. The overarching objective of this research is fundamentally pragmatic: to simplify the reader's task and enhance the efficiency of communication, ensuring that text is accessible to its intended audience. While initial efforts acknowledge the role of physical presentation, such as improved layout and legibility of the printed page, the core focus of psychologists, linguists, and reading specialists within this field remains firmly fixed on the linguistic elements--specifically, the **content, form, and structural complexity of the language used**. This emphasis stems from the recognition that text characteristics, particularly vocabulary choice and sentence structure, are the dominant determinants of reading ease and comprehension levels for a mass audience.

2. Historical Context: Vocabulary Control

Early readability research placed significant weight on the necessity of vocabulary control as a primary mechanism for dictating reading ease. The rationale posits that a reader's comprehension is highly dependent upon the familiarity of the words encountered; consequently, vocabulary constitutes one of the most critical factors influencing the difficulty level of a text. To assist copywriters, educators, and others concerned with effective communication to broad audiences, resources detailing word frequency became essential. A seminal tool in this area was the Teachers Wordbook of 30,000 Words, compiled by Thorndike and Lorge. This comprehensive resource provided an alphabetical listing of common English words along with their measured frequency of use. The compilation was the result of exhaustive word counts across diverse material types, spanning from cookbooks and classic literature to postal regulations, academic textbooks, and contemporary magazines.

The underlying principle of vocabulary control is that comprehension correlates directly with usage frequency: a word with a high frequency of occurrence, such as 100 times per million words, is significantly more likely to be understood by the average reader than a word with a rare frequency, such as only one occurrence per million. The *Wordbook* included lists not only of the most common words but also detailed listings of rare words and the 511,000 most common usages, establishing a foundational metric for writers aiming for specific audience demographics by prioritizing high-frequency vocabulary.

3. Readability Formulas: The Flesch System

While vocabulary lists provided valuable guidance, the field of readability research evolved toward objective quantitative measurement through the development and application of "readability formulas." These mathematical models were devised based on textual characteristics that demonstrated the strongest correlation with measured reading ease, such as average word length, the frequency of abstract terminology, and the complexity of sentence structures. The most influential and widely adopted system remains the formulas developed by Rudolf Flesch (1948, 1949). The primary Flesch metric is the **Reading Ease (RE) index**, calculated from an analysis of 100-word passages. The formula combines two statistically significant elements: average word length in syllables (wl) and average sentence length in words (si).

The calculation, $RE = 206.835 - 84.6 \text{ wl} - 1.015 \text{ si}$, yields a score that correlates directly to required educational level for comprehension. For instance, a score ranging from 0 to 30 is classified as **very difficult**, typically requiring a college graduate level of education; this material is characterized by 192 or more syllables per 100 words and an average sentence length exceeding 29 words, often found in specialized scientific literature. Conversely, material scoring between 70 and 80 is deemed **fairly easy**, containing roughly 139 syllables per 100 words and 14 words per sentence, readable by an average seventh-grader, common in popular slick-fiction magazines. These formulas provided the first widely accessible, standardized method for objectively scoring text difficulty.

4. Key Components and Secondary Metrics

In addition to the core Reading Ease formula, Flesch also devised supplementary metrics to gauge the engaging quality of a text, focusing attention on the emotional and personal connection established with the reader. These formulas rely on easily quantifiable linguistic metrics to assess complexity and engagement:

Average Word Length (wl): Measured as the average number of syllables per 100 words. This serves as a primary proxy for vocabulary difficulty, operating under the assumption that polysyllabic words are generally less common and harder to comprehend than shorter words.

Average Sentence Length (si): Measured as the average number of words per sentence. This metric reflects the complexity of syntactic structure; longer sentences typically introduce more clauses and require greater short-term memory load for processing by the reader.

Human Interest (HI) Score: This formula assesses the engaging quality of a text, $HI = 3.635 \text{ pw} + 0.314 \text{ ps}$. It is based on the percentage of **personal words** (pw)--including proper names and personal nouns--and **personal sentences** (ps), which encompass spoken dialogue, questions, and exclamations. A score of 60 to 100 HI is considered highly dramatic, often found in fiction, whereas a 0 to 10 HI score is rated dull, typical of scientific material.

Abstraction Index: An alternative Flesch metric used in some academic studies (Haskins, 1960), designed to measure the degree of abstractness in the language used. Research indicated a high negative correlation between an article's abstraction index and a "finishing index," meaning the more abstract the article, the less likely a mass audience reader was to complete it.

5. Applications and Impact on Communication

The establishment of standardized readability formulas served to focus critical attention on the importance of audience-appropriate communication, leading to significant practical applications across various industries and media. These tools have contributed to a measurable simplification of style among professional communicators, including journalists, copywriters, and corporate authors targeting mass audiences. In industrial and legal communication, readability studies exposed severe comprehension deficits. For instance, Lauer and Paterson (1951) demonstrated that typical management-union contracts consistently scored in the **very difficult range**, demanding a college education for full comprehension. Further analysis by Tiffin and Walsh (1951) of fifty-nine union-management agreements found that the complexity of the language significantly exceeded the educational level of approximately 70% of the very workers expected to read and comply with the agreements.

In mass media and advertising, readability research facilitated the analysis of content evolution and target adaptation. A study comparing advertising and editorial content in publications like **Time** and **Newsweek** (Trenchard and Crissy, 1952) suggested that advertisers consciously attempted to adapt the level and style of their material to align with the surrounding editorial environment. While advertising copy was initially found to be easier to read than editorial content, a comparison spanning pre- and post-World War II eras indicated a convergence: the advertising was becoming more difficult, while the editorial material was simultaneously becoming easier. Controlled experiments, such as split-run tests using easy and hard versions of the same articles, reported changes in readership volume for the simpler versions, sometimes resulting in gains of up to 66%, though the structural quality of the "difficult" counter-versions often complicated definitive conclusions.

6. Debates and Criticisms

Despite their utility and measurable influence, readability formulas are not universally accepted within academic and writing communities. Critics contend that this "computer" approach risks turning writing into a purely mechanical exercise, thereby overlooking essential aesthetic values inherent in effective communication, such as the evocative power of figures of speech, metaphor, and deliberately complex or unusual vocabulary necessary for literary or philosophical depth. A core criticism centers on the homogenization of writing and the failure of a single, objective scale to adequately differentiate between material types and communicative intent.

Critics question whether scientific or literary material can be justly rated on the same scale as instruction manuals, especially when such a scale dismisses sophisticated or specialized language as merely "dull" because it lacks a high Human Interest score. As Anastasi concluded in 1964, the Flesch approach and similar formulas have a specific, limited but vital application: they are most appropriate and effective when the communication goal is the efficient transmission of **simple, actionable messages** to mass audiences. This utility extends perfectly to practical forms of writing such as advertising copy, cookbooks, instruction sheets, government bulletins, and training manuals, where clarity, directness, and guaranteed comprehension override stylistic artistry or specialized academic depth.

7. Further Reading

[Readability \(Wikipedia\)](#)

[Flesch-Kincaid Readability Tests \(Wikipedia\)](#)

[Rudolf Flesch \(Wikipedia\)](#)

[Thorndike-Lorge Word List \(Wikipedia\)](#)