

This Week's Citation Classic

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Dale E & Chall J S. A formula for predicting readability.

Educ. Res. Bull. 27:11-20; 37-54, 1948.

[Bureau of Educational Research, Ohio State Univ., Columbus, OH]

By providing a list of 3,000 familiar words we enable the analyst to make use of two factors in readability levels: 1) the semantic and frequency levels of the words, and 2) the length of the sentence which governs its complexity. [The *Science Citation Index*[®] (SCI)[®] and the *Social Sciences Citation Index*[®] (SSCI)[®] indicate that this paper has been cited in over 355 publications since 1961.]

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"The study on readability which Jeanne Chall of Harvard and I completed in 1948 had its roots in the long past. When I was teaching in Winnetka, Illinois (1924-1926), Carlton Washburne, superintendent of schools, and Mabel Vogel, research assistant, were working on their readability formula which appeared in 1928.¹

"I became interested in developing a technique for finding the grade levels of instructional materials. This was when new materials were being rapidly developed and teachers were concerned about reading grade levels. The vocabulary was sometimes too hard for the readers, and less commonly too easy.

"My doctoral dissertation, *Factual Basis for Curriculum Revision in Arithmetic with Special Reference to Children's Understanding of Business Terms*,² disclosed that in studying specific technical fields glossaries were necessary. I developed a list of 2,276 business words and tested 200 of the important ones by a multiple-choice test.

"When Chall was enrolled in the graduate school at Ohio State University she studied the possibility of determining readability levels by scaling paragraphs. Her 1947 master's thesis was entitled *Graded Reading Paragraphs in Health Education, Readability*

by Examples. We now had two major causes of reading difficulty: the words used and the sentence length.

"Fortunately, we had already compared the vocabulary of children before entering the first grade prepared by the Child Study Committee of the International Kindergarten Union with E. L. Thorndike's most frequent thousand words.³ This was reported in an article entitled 'A comparison of two word lists.'⁴

"Irving Lorge next used the Dale list of 769 common words in his readability studies and added a factor of sentence length.⁵ Edward W. Dolch took the Dale list of 769 words and added 231 words obtained by interviewing samples of children early in the first grade, thus making a list of 1,000 words.⁶ Clarence Stone removed 173 words and added 173 making a list of 1,000 words.⁷ George Spache first used the Stone list, then added 361 words and removed 87 words, making a total of 1,041 words.⁸

"Another early readability study was by myself and Ralph Tyler. Our formula was described in an article entitled 'A study of the factors influencing the difficulty of reading materials for adults of limited reading ability.'⁹

"After exploring the use of the Dale 769 list we concluded that it was satisfactory for early reading but had weaknesses when used with the upper grades. The 3,000 word list was then developed which was more broadly applicable.

"It is likely that the next extensive research on readability levels will be a semantic approach using the familiarity scores on each word. These data will be found in *The Living Word Vocabulary*, a list of 44,000 words with their scores.¹⁰

"The data available on readability levels suggest: more critical use of readability formulas, better exchange of results of appraisals, and more use of the formula in preparing readable materials at or near the sixth grade level."

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3. Thorndike E L. *The teacher's word book.* New York: Teacher's College, Columbia University, 1921. 134 p.
4. Dale E. A comparison of two word lists. *Educ. Res. Bull.* 10:484-9, 1931.
5. Lorge I. Predicting readability. *Teach. Coll. Rec.* 45:404-19, 1944.
6. Dolch E W. *Problems in reading.* Champaign, IL: Garrard Press, 1948. 373 p.
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8. Spache G D. *Good reading for poor readers.* Champaign, IL: Garrard Publishing Company, 1974. p. 201-4.
9. Dale E & Tyler R W. A study of the factors influencing the difficulty of reading materials for adults of limited reading ability. *Lib. Quart.* 4:384-412, 1934.
10. Dale E & O'Rourke J. *The living word vocabulary.* Chicago: World Book-Childcraft International, 1981. 682 p.