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# Readability and analysis of eighth grade American history textbooks

Linda R. Burton

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**READABILITY AND ANALYSIS OF EIGHTH GRADE  
AMERICAN HISTORY TEXTBOOKS**

**by**

**Linda R. Burton**

**A RESEARCH PAPER  
SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF  
MASTER OF ARTS IN EDUCATION (READING SPECIALIST)  
AT CARDINAL STRITCH COLLEGE**

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This research paper has been  
approved for the Graduate Committee  
of the Cardinal Stritch College by

Sister Marie Colette  
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## CHAPTER I

### NATURE OF THE PROBLEM

#### Introduction

The readability of basal readers has been frequently studied, but the readability of content area texts has seldom been studied. The purpose of this paper was to examine eighth grade history books for readability.

The difference in the readability levels of history textbooks became apparent when the writer taught in an inner city junior high school. Not only were the available textbooks too difficult for nearly all the students, but also few of the teachers, supervisors, or textbook salesman could identify any books written on a lower level. For students in the eighth grade on a third to fifth grade reading level, the regular textbook was far too difficult to handle. Hildreth made this statement about the suitability of books to students.

When reading materials are too far over the heads of the children, they are likely to lose interest and become discouraged. On the other hand, if the assigned books are too easy, the children become bored and lose interest. Ill-fitting books can be as useless as ill-fitting shoes. If we want a child to love reading and to use reading as a tool for study, we must make sure that the materials supplied them are written within reasonable range of their readership.<sup>1</sup>

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<sup>1</sup>Gertrude Hildreth, Teaching Reading (New York: Holt, Rinehart, and Winston, 1958), pp. 369-70.

### Statement of the Problem

The purpose of this paper is to determine the readability of seventeen eighth grade history textbooks according to Fry's Graph for readability.<sup>1</sup> Also, the headings, cartoons, pictures, maps, and additional activities and sources will be described and evaluated.

### Limitations

The textbooks selected include those available at the Milwaukee Public Schools Curriculum Library which were published since 1968 and were currently in use within the school system. The author selected those textbooks since they are the ones which the Milwaukee Public School teachers may use.

Fry's readability graph was selected for its ease in computation and accuracy. It also is based on the average number of sentences and the average number of syllables in each sample.

### Significance

History teachers are concerned about the readability of the textbooks. Both the National Conference for the Social Studies Teachers and the Wisconsin Conference for the Social Studies Teachers have devoted considerable time to the aspect of the readability of history textbooks. It is hoped that this study will help teachers select textbooks which are suitable to their students.

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<sup>1</sup>Edward Fry, "A Readability Formula That Saves Time," Journal of Reading, XI (April, 1968) pp. 575-78.

Summary

Today a variety of history textbooks are available with many different readabilities and format. The writer used Fry's readability graph to determine the grade level. Then, the writer analysed the headings, cartoons, pictures, maps, and additional activities and sources to determine their usefulness. Hopefully, this study will be helpful to other history teachers.

CHAPTER II  
ASPECTS OF READABILITY FORMULAS AND  
HISTORY OF READABILITY FORMULAS

Definition of Terms

The terms readability and readability formula have several different meanings. Dale and Chall believed readability was related to interest, legibility, or ease of reading.<sup>2</sup> A Dictionary of Terms and Concepts in Reading gave an entirely different version. According to it, readability was an "objective measure of the difficulty of a book usually in terms of average sentence length and vocabulary load."<sup>3</sup>

A definition of a readability formula was not generally agreed upon either. As Klare said,

A readability formula would seem to be clear-cut and easy to recognize. It should be possible, for example, to review the literature of readability, count the formulas developed, and report the number that has appeared up to any given date. It is not as simple as that, however, largely because the description of what, exactly, constitutes a formula has never been clearly stated. If the strict definition of a formula as a

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<sup>1</sup>Jeanne S. Chall, Readability---An Appraisal of Research and Application (Columbus, Ohio: The Ohio State University Press, 1958), pp. 4-5.

<sup>2</sup>Delwyn G. Schubert, A Dictionary of Terms and Concepts in Reading (Springfield, Ill.: Charles C. Thomas Publisher, 1964), p. 198.

regression equation is adopted, several studies that deserve mention are excluded; if the looser notion of a formula as any method of measuring readability is accepted, it is difficult to set limits that are exclusive enough.<sup>1</sup>

A Dictionary of Terms and Concepts in Reading said a readability formula was a "method estimating the difficulty or readability of printed material usually based on vocabulary difficulty, sentence length and other factors."<sup>2</sup>

In this paper readability formula was used as meaning a method of measuring printed material as a predictive device.

### History of Readability Formulas

Klare and Spache have been the major writers on the history of readability formulas, and they constitute the principle resources for this section of the chapter.

About 1840 educators became aware of some of the problems in reading as the vocabulary in the McGuffey Readers was selected for its ease of understanding.<sup>3</sup>

In 1889 the Russian Rubakin made a list of fifteen hundred familiar words in his native language which indicated that an interest in vocabulary lists was becoming worldwide.<sup>4</sup> Also, he believed that the main problems with readability were too many

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<sup>1</sup>George Klare, The Measurement of Readability (Ames, Iowa: Iowa State University Press, 1963), p. 33.

<sup>2</sup>Schubert, A Dictionary of Terms and Concepts in Reading, p. 30.

<sup>3</sup>Klare, The Measurement of Readability, p. 30.

<sup>4</sup>George D. Spache, Good Reading for Poor Readers (Champaign, Ill.: Garrard Publishing Co., 1964), p. 24.

long sentences and unfamiliar vocabulary.<sup>1</sup> After a variety of approaches, many of the modern-day formulas were based on the idea of vocabulary and sentence length.

The interest in vocabulary in Germany became apparent with Kaeding's scientific study of word count to correlate vocabulary with reading difficulty in 1898.<sup>2</sup>

Yen, an American-educated Chinese scholar, made a list of one thousand basic Chinese characters. He later used his basic vocabulary to start an adult school and a newspaper for illiterate coolies in China.<sup>3</sup>

Even though in the beginning the researchers seemed to agree that vocabulary was an important factor in reading problems, other studies were made which concentrated on other areas. Rubakin not only compiled a list of familiar Russian words, but he also studied the use of long sentences as a reason for reading difficulty.<sup>4</sup> In 1893 Sherman and his student Gerwig were the earliest Americans to study aspects of readability.<sup>5</sup> They studied sentence length quantitatively as a source of problems. After analysing the average sentence lengths of famous writers, they discovered a decrease in sentence

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<sup>1</sup>Klare, The Measurement of Readability, p. 30.

<sup>2</sup>Ibid.

<sup>3</sup>Spache, Good Reading for Poor Readers, p. 24.

<sup>4</sup>Klare, The Measurement of Readability, p. 30.

<sup>5</sup>Spache, Good Reading for Poor Readers, p. 24.



length from fifty words in the Elisabethan times to twenty-three in their time. Furthermore, with the decrease in sentence length, there was a corresponding increase in the use of simple sentences. Lastly, the writers were remarkably consistent in their sentence patterns.<sup>1</sup> As a result of these three tendencies, Serman believed that random sampling was just as accurate as complete analysis.<sup>2</sup> This laid the foundation of samples being used in readability formulas.<sup>3</sup>

In 1931 Edward Thorndike published The Teacher's Word List, which was considered to be the most important work in the area of vocabulary before the development of formulas.<sup>4</sup> In this work Thorndike listed twenty thousand words and ranked them according to their importance.<sup>5</sup> His study gave other researchers the data for determining the vocabulary difficulty of the literature.<sup>6</sup> In fact it was the bases for Lively and Pressey's reading formula in 1923. This was the first method which could be considered a formula.<sup>7</sup>

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<sup>1</sup>Klare, The Measurement of Readability, p. 30.

<sup>2</sup>Spache, Good Reading for Poor Readers, p. 24.

<sup>3</sup>Klare, The Measurement of Readability, p. 31.

<sup>4</sup>Ibid., p. 30

<sup>5</sup>Edward L. Thorndike, A Teacher's Word Book of the Twenty Thousand Words (New York City, N.Y.: Teacher's College, 1932) p. 5.

<sup>6</sup>Spache, Good Reading for Poor Readers, p. 25.

<sup>7</sup>Klare, The Measurement of Readability, p. 30.

Following Thorndike's study, over twenty-nine objective studies were made relating to readability formulas in the period from 1923 to 1953.<sup>1</sup>

The developers of the first readability formulas ignored the previous research on sentence length. Also, they disregarded the work by Kitson in 1921. He tested the "lowbrow" Chicago American, American magazine, and Century magazine to the "highbrow" Chicago Evening Post. The highbrow publications had greater number of words per sentences and greater number of syllables in the words. He concluded that readability was important in advertising copy.<sup>2</sup> Even more important, he discovered a direct relationship of the readability of the author's style, word length in syllables, and sentence length to the ease with which a reader could read the material.<sup>3</sup>

Bear made a study on one aspect Kitson had examined. Bear believed that the syllable length of a word was a reason for word difficulty. "She found that the percentage of monosyllabic words in a reading selection provided a fair index of reading difficulty. She also found a high correlation between the length of the word and the frequency of its use."<sup>4</sup>

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<sup>1</sup>Spache, Good Reading for Poor Readers, p. 25.

<sup>2</sup>Klare, Measurement of Readability, p. 31.

<sup>3</sup>Spache, Good Reading for Poor Readers, p. 24.

<sup>4</sup>Ibid., pp. 31-32.

Johnson used Bear's study as a means of devising a method of grading the difficulty of materials in 1930. However, Zysf is the person who was given credit for quantitatively studying the relationship between word frequency and word length although his study was completed eight years after Johnson's study.<sup>1</sup>

Also, in the mid 1920's two events helped the development of readability. The first was the librarians' campaign for readable adult material while the educators were primarily interested in materials for children. In 1925 the Subcommittee on the Library and Adult Education was formulated. Also, at the same time the Russians became interested in adult literacy, particularly in relation to the Red Army. The second event was the development of the Standard Test Lessons in Reading by McCall and Crabbs in 1925. In the beginning the tests were seldom used, but they later became a criterion for devising readability formulas.<sup>2</sup>

Up to this point none of the early studies had developed a formula although they did establish a number of items which were to be important in the development of reading formulas.<sup>3</sup>

According to Jeanne Chall, Lively and Pressey were the first to make a quantitative study in readability. They estimated the vocabulary difficulty after analyzing one thousand

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<sup>1</sup>Klare, Measurement of Readability, pp. 31-33.

<sup>2</sup>Ibid., p. 32.

<sup>3</sup>Spache, Good Reading for Poor Readers, p. 25.

words which were systematically selected in the material. Their formula was particularly tedious as it took about thirteen hours to evaluate one book. However, their study was completed two years after Kitson's study in 1921 which analysed sentence length and the number of syllables of words to determine the readability of two magazines and two newspapers. Regardless of which study was conducted first, the fact remains that future readability formulas were based on Lively and Pressey's study.<sup>1</sup>

The first study which was prompted by Lively and Pressey's formula appeared in 1926. Washburne and Vogel analysed seven hundred children's books according to the Lively and Pressey formula. Washburne and Vogel then gave each book a grade rating according to the Stanford Achievement Test. Their work became important as it provided a method of validating reading formulas and it also gave other authors a base on which they could devise their own formulas.<sup>2</sup>

In 1928 Dolch developed a method for determining the "vocabulary burden."<sup>3</sup> Vocabulary would be important in his later formula.

A year later Lowerens developed an unusual system of readability which was based on the beginning letter of each word as a means of determining difficulty. The next year he developed

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<sup>1</sup>Klare, Measurements in Readability, p. 37.

<sup>2</sup>Ibid., pp. 38-39.

<sup>3</sup>Ibid., p. 40.

a completely different formula. This was based on the ratio of Anglo-Saxon words to those of Greek and Roman derivation.<sup>1</sup>

Vocabulary continued to be important for Lowerens as he added vocabulary interest to his formulas in 1935 and 1938. In 1939 he added a different aspect of vocabulary, which was polysyllabic words. Each aspect of his vocabulary factors was supposed to give a separate vocabulary grade placement score which was based on standardized reading tests. However, his results are difficult to evaluate as he did very little work to validate his formulas.<sup>2</sup>

Vocabulary continued to be an important aspect of the formulas in the 1930's. In 1931 Patty and Painter developed a formula to measure the vocabulary burden which was based on the frequency and Thorndike word value. They then determined the average word weighted value and calculated the index number. However, they did not check the validity of the formula, and so they allowed the validity to rest on Thorndike's word count.<sup>3</sup>

E.L. Thorndike formulated the last formula of this period. According to his formula, the number of words in a ten thousand word sample which appeared in the Teacher's Word Book were counted. Then, Thorndike's grade norms were consulted. Thorndike's study was typical of this period as the era was characterized by two factors. First, vocabulary was the basis

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<sup>1</sup>Klare, Measurement of Readability, p. 41.

<sup>2</sup>Ibid.

<sup>3</sup>Ibid., pp. 43-44.

for all the formulas. Secondly, the researchers depended on Thorndike's Teacher's Word Book as a measure of vocabulary difficulty.<sup>1</sup>

In the period of 1934 to 1938 vocabulary remained an important part of the formulas, but the researchers were also studying other aspects. They began to look at sentence length and structure, parts of speech, and whether the material was fiction or nonfiction.

In 1934 Ojemann decided to investigate the factors which related to reading difficulty, reading ability among adults, and the characteristics of the materials at the different reading levels. The factors he used were the number of simple, complex, and compound sentences, the percentage of Thorndike's words, and qualitative factors such as concrete versus abstract ideas and obscurity and incoherence in expression.<sup>2</sup> This became the first formula which studied other factors in addition to vocabulary.

In the same year Dale and Tyler completed a study on the factors which influenced the reading difficulty of adults who had limited reading ability. The factors they included were technical, nontechnical, and easy words, the length and type of sentences, and the number of clauses, pronouns, and monosyllabic words.<sup>3</sup>

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<sup>1</sup>Klare, Measurement of Readability, p. 44.

<sup>2</sup>Ibid., pp. 44-45.

<sup>3</sup>Ibid., p. 46.

Later in 1934 McClusky pursued the concept of reading difficulty in nonfictional words. One passage was selected from books in the areas of economics, political science, psychology, sociology, physics, and fiction. The reading difficulty was found to vary with the subject matter. Fiction was the easiest, and physics was the hardest. Also, the easy material had short, simple sentences with short, concrete words. Surprisingly, there were the same number of ideas per words in both easy and hard materials.<sup>1</sup>

Gray and Leary continued the trend in 1934 for a detailed study of readability. Their study was the most extensive of any formula in the history of readability. Like Dale and Tyler, Gray and Leary made a study of what made books readable for adults who had limited reading ability.<sup>2</sup>

The next year Morris and Halverson developed a method of word analysis. However, their technique was different from previous studies in that it analyzed the words only as they were used in context. Thus, this method overcame the common criticism of other word analyses which was the problem of hard versus easy meanings. Also, since only key words were considered, the content rather than meanings were analyzed. Also, they wanted their formula to be able to predict the difficulty of the reading material, and so they included

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<sup>1</sup>Ibid., pp. 47-48.

<sup>2</sup>Ibid., p. 48.

some norms for the words. However, this was the extent of their development of validity until Lorge evaluated the formula in 1939. In spite of an attempt to evaluate words in context and validating the results, the formula did not attain much popularity as it was cumbersome and inaccessible as an unpublished manuscript.<sup>1</sup>

After 1937 the formulas emphasized simplicity and efficiency. The first study of this period was Washburne and Morphett's revision of their 1928 formula. This revision consisted of one less factor and the use of Thorndike's fifteen hundred words instead of his list of ten thousand common words. Furthermore, the formula was to cover first and second grades.<sup>2</sup>

Edgerton devised a short version of the Washburne-Morphe'tt formula in 1945. He used their factors which related to uncommon words. From the Gray-Leary formula he used the idea of the average number of words in a sentence.<sup>3</sup>

Lorge developed the next significant work in 1939. His goal was to develop an efficient formula that was accurate. He used McCall-Crabbs Standard Test Lessons in Reading along with three other elements.<sup>4</sup> According to Lorge, the vocabulary load was the most important factor in deter-

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<sup>1</sup>Ibid., pp. 50-51.

<sup>2</sup>Ibid., pp. 41-52.

<sup>3</sup>Ibid., p. 53.

<sup>4</sup>Ibid., p. 53.



mining reading difficulty.<sup>1</sup> It was the first formula which was used in fields other than education such as business and government.<sup>2</sup>

Another formula appeared later the same year. Yoakan devised a system of using Thorndike's words. In 1948 Yoakan revised and mimeographed the formula for wider use.<sup>3</sup>

Kessler developed a short version of Gray and Leary's formula in 1941. However, he did not develop a criterion for checking his factors although his difficulty rating for thirty-five books was the same as Lowerens had found.<sup>4</sup>

In 1943 Flesch published his formula which became one of the best-known of all the formulas. There were several reasons for its popularity. First, it was a simple formula with only three factors. Secondly, it claimed to be different from other formulas in that it measured something other than vocabulary although this has been disputed. Most importantly, Flesch's skillful popularisation made it well-known. Through his books and articles, his formula and ideas on readability became known to business, journalism, and government. Until this, readability was known almost solely in educational circles.<sup>5</sup>

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<sup>1</sup>Irving Lorge, "Predicting Reading Difficulty of Selections for Children," Elementary English Review (October 1939): 16-229.

<sup>2</sup>Klare, Measurement of Readability, p. 53.

<sup>3</sup>Ibid., p. 55.

<sup>4</sup>Ibid., p. 56.

<sup>5</sup>Ibid.

Flesch had strong beliefs about the importance of vocabulary in readability. He felt the emphasis on vocabulary made previous formulas unsuitable for adult material. Also, he believed that abstract words had little to do with difficulty. Lastly, he felt that sentence length was important.<sup>1</sup>

Flesch's formula was based on the number of affixes and personal references and the average sentence length. He applied these factors to five different magazines which had different levels of difficulty.<sup>2</sup> Also, he used some data from Lorge's 1939 formula to develop his regression formula.<sup>3</sup>

In 1948 Flesch revised his formula and developed the Reading Ease formula which omitted the burdensome factor of counting affixes and personal references. Also, he added a human interest factor as some books were rated too high because of the use of personal words for editorial purposes.<sup>4</sup>

The ease of applying Flesch's revised formula plus the adult levels made it valuable and popular. "It was destined to continue the wide popularity accorded the original, and, in fact, it has become the most frequently used of all the reading formulas."<sup>5</sup>

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<sup>1</sup>Ibid.

<sup>2</sup>Ibid., p. 57.

<sup>3</sup>Lorge, "Predicting Reading Difficulty of Selections for Children," p. 233.

<sup>4</sup>Klare, The Measurement of Readability, p. 58.

<sup>5</sup>Ibid., p. 59.

In 1948 Dale and Chall also designed a formula to correct the original Flesch formula. Their hypotheses included the following two factors. First, the number of personal references was unnecessary. Secondly, a larger list than the Dale 769 word list would provide a better predictive device.<sup>1</sup>

So, they developed an easier formula which was based on the number of words outside the Dale list of three thousand words and the average words in a sentence.<sup>2</sup>

Two formulas for children's materials appeared in 1948 in addition to the Dale-Chall and Flesch formulas for adult material.<sup>3</sup> The first was developed by Dolch. He examined three ways in which books varied. The factors he studied included content factors, physical factors, and manner of presentation. Since the first two factors were not easily controlled, he concentrated on the last aspect. Then, he developed a formula based on the average sentence length and the number of words excluding those on the Dolch list of one thousand. From this study he noticed that with each successive grade the number of harder words and longer sentences increased.<sup>4</sup>

Lester and Viola Wheeler developed the second formula for the readability of children's materials. It was called

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<sup>1</sup>Ibid., p. 59.

<sup>2</sup>Rudolf Flesch, How to Test Readability (New York, N.Y.: Harper & Brothers, 1951), p. 39.

<sup>3</sup>Klare, Measurement of Readability, p. 60.

<sup>4</sup>Ibid., p. 61.

the University of Miami method and gave several evaluations of a book so that the difficulty and instructional and independent levels could be determined. However, like the early formulas, it was dependent on Thorndike's word list, and it did not offer any other criterion to check the validity of the formula.<sup>1</sup>

Flesch felt that Dale and Chall's formula relied on limited vocabulary. He believed that authors could not write using a limited vocabulary.<sup>2</sup> Also, many words were abstract which added to the vocabulary difficulty. So, in 1950 he devised the "Level of Abstraction" formula which was based on abstraction and other factors.<sup>3</sup>

The "Level of Abstraction" was quickly criticized by Jenkins and Jones as adding little to readability. Flesch, however, thought the count of definite words would be a useful clinical and diagnostic device for the measurement of readabilities. This became a forerunner to the specialized formulas rather than an efficient formula as the others were in this period.<sup>4</sup>

In 1957 the Level of Abstraction was adapted by P.J. Gillie so that it became more efficient. However, the validity of Gillie's revision was only as valid as Flesch's formula.<sup>5</sup>

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<sup>1</sup>Ibid., p. 62.

<sup>2</sup>Flesch, How to Test Readability, p. 39.

<sup>3</sup>Kiars, Measurement of Readability, p. 62.

<sup>4</sup>Ibid., p. 63.

<sup>5</sup>Ibid.

Three formulas evolved in the early 1950's which were based on Flesch's Reading Ease formula. The first was a simplification of the formula by Farr, Jenkins, and Paterson in 1951. They substituted the number of one-syllable words for the total syllable count. This revision made the formula easier to compute, and it also had a high correlation with the original formula.<sup>1</sup>

The next year Gunning published the Fog Index which was similar to Flesch's Reading Ease formula except that the syllable count had been replaced with the number of words which had three or more syllables.<sup>2</sup>

In 1953 McElroy developed a formula which was similar to Flesch's Reading Ease formula and Gunning's Fog Index. He believed that reading difficulty increased as the number and difficulty of the ideas increased. Therefore, he decided that each word was an idea and each sound in the word was part of the idea. So, he devised a formula which counted all the syllables.<sup>3</sup>

After 1953 many formulas were developed for a particular aspect of reading and many of them were designed to measure the readability of materials at a certain grade level.

Forbes and Cottle developed a formula to determine the readability of standardized tests. To test the validity of

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<sup>1</sup>Ibid., p. 64.

<sup>2</sup>Ibid., p. 65.

<sup>3</sup>Ibid.

their formula they computed the mean score of the Flesch, Dale-Chall, Leverens, Lorge, and Yeakam formulas. The mean of these formulas was then compared to the Forbes and Gottle formula. There was a .95 correlation.<sup>1</sup>

In 1953 Spache devised a formula for primary grade materials. It was based on the number of words not included in the Dale "Easy Word List" of 769 words and the average number of sentences.<sup>2</sup>

In 1954 Wheeler and Smith developed a primary grade reading formula.<sup>1</sup> It was similar to Spache's formula in that the publisher's grade designations were the criterion. It was also somewhat like Gunning's formula since it used polysyllabic words.<sup>3</sup>

In the same year Flesch published an "experimental" reading formula. It was composed of two parts. The first was to measure the forcefulness and vividness of the author's style, and the other part measured the concreteness and realism of the material. Instead of using McCall-Crabbs Test Lessons as he had in the past, he used academic, journalistic, and professional writing in addition to the writing of fiction and drama.<sup>4</sup>

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<sup>1</sup>Ibid., pp. 66-67.

<sup>2</sup>Ibid., p. 67.

<sup>3</sup>Albert J. Harris, How to Increase Reading Ability (New York, N.Y.: Longmans, Green and Co., 1956), p. 477.

<sup>4</sup>Klare, Measurement of Readability, p. 68.

<sup>5</sup>Ibid., p. 69.

Another formula was designed for elementary school materials in 1956. Tribe's formula involved the counting of the number of sentences, the total number of words, and the number of words not included in Rinsland's A Basic Vocabulary of Elementary School Children.<sup>1</sup>

Taylor devised a somewhat different type of readability measurement. His "Close" procedure was to omit a word every certain number of words to measure the reader's comprehension.<sup>2</sup> This has been found successful in lower primary, high school, and adult books.<sup>3</sup>

More recently the SMOG (Simple Measure of Gobbledygook) was developed. This was based on counting polysyllabic words in three ten-sentence samples. Sentence length was considered in the formulas as the SMOG would be higher if one sentence were twice as long as another.<sup>4</sup>

In 1962 Betel devised a formula based on a hundred-word sample and a word list. The initials, first names, and numbers were eliminated in the analysis of the sample. Then the reading level was calculated from Betel's list which had a reading level assigned to each word.<sup>5</sup>

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<sup>1</sup>Ibid., pp. 69-70.

<sup>2</sup>John R. Bormuth, "Readability: A New Approach," Reading Research Quarterly 1 (Spring 1966): p. 82.

<sup>3</sup>Jonathan Anderson, "Research in Readability for the Classroom Teacher," Journal of Reading 8 (May 1965): p. 210.

<sup>4</sup>G. Harry McLaughlin, "Clearing the SMOG," Journal of Reading 8 (December 1969): 212.

<sup>5</sup>Merton Betel, Predicting Readability Levels (Chicago, Ill.: Follett Publishing Company, 1962) pp. 11-14.

### Fry's Readability Formula

Of all the formulas which have been developed, only a handful are commonly used today. However, these were still specialized in that they were invalid beyond a certain level. The Flesch, Lorge, and Dale-Chall formulas were not good below the fourth grade. The Flesch formula was good mainly for upper grades and adult reading. The Lowerens formula could be used for the primary levels although it was cumbersome. The Dolch and Spache formulas were easy to use once one has learned the word list, but they did not extend beyond the elementary level.<sup>1</sup>

The problems with the formulas were twofold. First, they used a regression formula which was not easy to understand. Secondly, the formulas did not have a wide range and hence could not cover the primary, intermediate, and secondary levels. A definite need existed for an easy to use and understandable readability formula for the pre-primer through high school levels.<sup>2</sup> Such a formula was developed by Fry.

Fry devised the Readability Graph when he was in Uganda and needed a formula that was very simple. The original version was read mostly by the British. Consequently, it was not too well-known by Americans. Emerging nations have accepted it fairly readily, perhaps because it was originally geared to African readers. Fry has since adapted his Readability Graph

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<sup>1</sup>Spache, Good Reading for Poor Readers, p. 410.

<sup>2</sup>Botel, Predicting Readability Levels, pp. 7-8.



for the American education system with American grade level designations. The formula is still simple as Fry considered this a universal requirement.<sup>1</sup>

Simplicity was an element which was missing from the previous formulas. Dale-Chall's formula took eighteen printed pages. SRA did develop a simple formula, but it required a costly device and had only four difficulty designations. Fry's Readability Graph took about two pages.<sup>2</sup>

Fry's formula was based on two aspects of the reading material: word and sentence length. McLaughlin had this to say about the importance of these two factors:

In English, word length is associated with precise vocabulary, so a reader must usually make extra effort in order to identify the full meaning of a long word, simply because it is precise. Long sentences nearly always have complex grammatical structure, which is a strain on the reader's immediate memory because he has to retain several parts of every sentence before he can combine them into a meaningful whole.<sup>3</sup>

Using these two important factors, Fry combined them in the following way in the directions for using the Readability Graph:

1. Select three one-hundred-word passages from near the beginning, middle and end of the book. Skip all proper nouns.
2. Count the total number of sentences in each hundred word passage (estimating to the nearest tenth of a sentence). Average these three numbers.

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<sup>1</sup>Edward B. Fry, "A Readability Formula That Saves Time," Journal of Reading 11 (April 1968): 513-16.

<sup>2</sup>Ibid.

<sup>3</sup>McLaughlin, "Clearing the SMOG," Journal of Reading 12 (May 1969): 640-41.

3. Count the total number of syllables in each hundred-word sample. Find the average total number of syllables for the three samples.
4. Plot on the graph the average number of sentences per hundred words and the average number of syllables per hundred words. Most plot points fall near the heavy curved line. Perpendicular lines mark off approximate grade level areas.<sup>1</sup>

One initial criticism of the Readability Graph was that it did not extend through the primer and pre-primer levels.<sup>2</sup> Fry validated his graph at the primary levels by comparing his results with the Spache and Cloze formulas. However, this study did not go lower than the first grade.<sup>3</sup>

The next question which was asked about the Readability Graph was how accurate the scores were. This question received considerable attention.

Fry said that there had not been any rigid standards as to what fourth grade difficulty was and what fifth grade difficulty was. Also, tests have changed. One would find the class mean reading score in terms of grade level would be quite different if a class were given the 1957 California Reading Test and the 1965 California Reading Test. The newer tests would be more difficult as students were assumed to be reading better than they were a few years ago.<sup>4</sup>

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<sup>1</sup>Fry, "A Readability Formula That Saves Time," p. 514.

<sup>2</sup>George H. Maginnis, "The Readability Graph and Informal Reading Inventories," The Reading Teacher 22 (March 1969): 516-8.

<sup>3</sup>Edward B. Fry, "The Readability Graph Validated at Primary Levels," The Reading Teacher 22 (March 1962): 534-8.

<sup>4</sup>Fry, "A Readability Formula That Saves Time," p. 515.

Fry suggested two methods of testing his formula. The first was testing a group of books to determine if the Fry Readability Graph ranked them in the same order as the other formulas. The second method was to measure the readability difficulty of books by examining the mean comprehension scores of those who read the books.<sup>1</sup>

The Readability Graph's grade level designations were determined by plotting many books which were classified by publisher in grade levels such as third, fourth, and fifth grade levels. Then, Fry looked for clusters and developed a curve from these. Once the formula was completed, Fry compared several books with three widely-used formulas. Fry's Readability Graph and the SRA formula ranked the books about the same. The Dale-Chall formula ranked them slightly harder in some cases than Fry. The Flesch formula also ranked the books at the same level of Fry's formula or sometimes slightly higher. Thus, all four of these formulas were very close in their evaluations of the books.<sup>2</sup>

In another study the Fry Readability Graph was found to correlate highly not only with the Flesch and Dale-Chall formulas but also with the Spache formula. In addition Fry's formula had the attribute of being easier to use.<sup>3</sup>

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<sup>1</sup>ibid.

<sup>2</sup>ibid., p. 515-16.

<sup>3</sup>"Readability." Grade Teacher 87 (April 1970): 14.

Another study was also completed to test the validity of Fry's Readability Graph. In this study the formula was compared with the formulas of McLaughlin and Dale-Chall. Fry and McLaughlin's formulas consisted of the aggregate number of words with three or more syllables. Dale-Chall's formula consisted of the average sentence length and a list of three thousand common words.<sup>1</sup> From the study McLaughlin's grade levels were much higher than Fry's as his scores reflected the levels at which the reader could have complete comprehension rather than being able to read the material with understanding as in the case of Dale-Chall. The difference in the different criteria in these readability formulas resulted in the different grade level scores.<sup>2</sup> When the same twenty exact samples were compared with Fry and the Dale-Chall formulas, all were at the same grade level except in two cases. One would expect somewhat similar results as average sentence length was a common factor in both formulas. The formulas differed in that Dale-Chall discriminated between non-common and three thousand common words. Fry did not give individual words a difficulty rating although all the words were weighted by counting their syllables. Then, these three formulas were compared as to their ease of calculation and

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<sup>1</sup>Walter Pauk, "A Practical Note on Readability Formulas," Journal of Reading 13 (December 1962): 207-10.

<sup>2</sup>Anderson, "Research in Readability for the Classroom Teacher," p. 209.

amount of time they required. McLaughlin and Fry's formulas took ten and fifteen minutes respectively while the Dale-Chall formula required forty minutes.<sup>1</sup>

The validity and ease were the two main reasons for using the Fry Readability Graph in this research. However, formulas can be used only as indicators which trying to suit the material to the child as formulas do not take into consideration the vital aspects of the interest, maturity, motivation, or experience of the reader.<sup>2</sup>

### Reading Problems in Social Studies

Social studies has been defined as "those whose subject matter relates directly to the organization and development of human society, and to man as a member of social groups."<sup>3</sup> This included the vast areas of history, civics, geography, sociology, economics, anthropology, and current events.

Reading has been one of the most important aspects of the social studies. As Bamman said,

Of the so-called academic subjects the social studies probably make the greatest demand on reading time. It is safe to say that this academic field requires from one fourth to one third of all the time spent in reading in the junior and senior high schools, especially since the social studies are offered in all grades from seven to twelve.<sup>4</sup>

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<sup>1</sup>Pauk, "A Practical Note on Readability Formulas," p. 207.

<sup>2</sup>Anderson, "Research in Readability for the Classroom Teacher," p. 402.

<sup>3</sup>Henry A. Bamman, Reading Instruction in the Secondary Schools (New York, N.Y.: Longmans, Green and Co., 1961), p. 135.

<sup>4</sup>Ibid.

Not only did social studies require a great deal of the student's time because of the amount of reading that must be done, but also reading was frequently the only available means the student had to understand the subject. Wesley explained the reason for this.

This area of desirable experience in the social studies is practically unlimited, and the area of actual experience is necessarily quite limited. Reading offers practically the only means by which the students can, at least vicariously acquire all the rich and illuminating experiences which the human race has had.<sup>1</sup>

Once the student had mastered the beginning stage of reading, he began to learn from reading. It was this ability to read which was so important to one's success in social studies.<sup>2</sup> Besides reading being the only way of obtaining the experiences, reading in social studies required a variety of specialized skills among which were the reading of maps, graphs, cartoons, and pictures which were important to the understanding of the subject.<sup>3</sup>

Other skills which the student needed were the ability to distinguish fact from opinion, to relate effect to cause, and to interpret pictures.<sup>4</sup> In addition the student needed

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<sup>1</sup>Edgar Bruce Wesley, Teaching the Social Studies (Boston, Mass.: D.C. Heath and Co., 1942), p. 306.

<sup>2</sup>Edgar Bruce Wesley and William H. Cartwright, Teaching Social Studies in Elementary Schools (Boston, Mass.: D.C. Heath and Company, 1938), p. 173.

<sup>3</sup>Shelley Umans, New Trends in Reading Instruction (New York, N.Y.: Teachers College, 1963), p. 27.

<sup>4</sup>Wesley and Cartwright, Teaching Social Studies in Elementary Schools, p. 1.

to develop an appropriate rate of reading, have a good understanding of vocabulary, and be able to organize ideas.<sup>1</sup>

The reading difficulties in social studies were usually caused by the difficulty of the materials or the limitations of the reader. Some of the reader's language difficulties prevented him from comprehending material when it was read to him. Other times the student frequently lacked interest in the material. The materials were often completely unfamiliar and abstract.<sup>2</sup> Furthermore, the student's reading ability also correlated positively with his IQ. The intelligent students were usually good readers. However, the average student could do well with the harder materials if they were related to his experiences.<sup>3</sup>

The very nature of the textbooks made social studies difficult as Bamman pointed out.

Reading in the social studies is more difficult than the reading of narrative material to which the student has typically become accustomed in his daily "reading" assignments at the elementary school level. The content of the typical social studies textbooks is condensed; the vocabulary is not controlled and is more difficult than in literature; the student is required to read and organize a mass of seemingly unrelated facts and to organize them in proper relationships; the ideas are complex and require wide read-

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<sup>1</sup>Helen McCracken Carpenter, Skills in Social Studies: Twenty-Fourth Yearbook of the National Council for the Social Studies (Washington, D.C.: National Council for the Social Studies, 1954), p. 117.

<sup>2</sup>Bamman, Reading Instruction in the Secondary Schools, p. 136.

<sup>3</sup>Wesley and Cartwright, Teaching Social Studies in Elementary School, p. 181.

ing for clarification; much supplementary material is necessary for full appreciation of person and events; previous knowledge must be recalled to illuminate ideas and develop depth of concepts.<sup>1</sup>

In addition to the basic difficulties of social studies, namely, requiring broad experiences and the ability to understand difficult vocabulary and abstract facts, each individual field of the social studies required specific skills for reading its materials. Each subject was written in a different way because the author decided the subject should be written in a narrative form while geography was written in a strictly factual method by elaborating on facts about the land and people of specific countries.<sup>2</sup>

Many causes have been attributed to the reason for reading difficulty. Among these are sentence structure, sentence length, abstractness of style, figurative language, overuse of specialized words and lack of supporting details. However, vocabulary and difficulty of the ideas seemed to be the two main causes as words can be of low difficulty but still cause problems for the reader if the ideas were complex.<sup>3</sup>

Vocabulary was probably the basic cause of difficulty as it was so important to both the development of reading

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<sup>1</sup>Banman, Reading Instruction in the Secondary Schools, p. 136.

<sup>2</sup>Ibid.

<sup>3</sup>Wesley and Cartwright, Teaching Social Studies in Elementary Schools, p. 182.



ability and understanding of the concepts in the subject. Each field in the Social studies had its own vocabulary.<sup>1</sup>

Vocabulary problems could be divided into five different areas in social studies. The first is the area of technical terms as many words were not in the student's knowledge. For example, vassal, feudalism, and primogeniture might be used in English history. The student must be able to pronounce the word, use the dictionary, and use context clues for the meaning in the context. The second area was the use of multisyllabic words. These words gave students trouble if they did not look for root words such as communicate in telecommunication.<sup>2</sup> Flesch advocated the idea of using smaller words for the longer and more complicated words whenever possible to solve this problem. For example, instead of using continuous, he could use keep up.<sup>3</sup> The third aspect of vocabulary was the use of abstract words. Some words were meaningless until the reader matured and had watched their application to everyday experiences. Examples of these words were justice, liberty, democracy, and equality. The fourth area was the use of general terms which the student probably

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<sup>1</sup>J. Allen Figurel, "Development of Competence in the Interpretation of Social Studies Material," ed. Donald L. Cleland, Reading in the Content Areas: A Report of the Fifteenth Annual Conference and Course on Reading (Pittsburg: University of Pittsburg Press, 1959), p. 87.

<sup>2</sup>Bauman, Reading Instruction in the Secondary Schools, p. 140.

<sup>3</sup>Rudolf Flesch, The Art of Readable Writing (New York, N.Y.: Harper and Brothers Publishers, 1949), p. 130.

associate elevator with the usual meaning of a passenger carrier when he read of grain elevators. The last aspect of vocabulary was the use of mathematical terms as all branches of the social studies had made extensive use of math in the form of graphs, charts, and population statistics.<sup>1</sup> The social studies textbooks have tried to lessen the vocabulary load by replacing difficult words or phrases with less difficult ones. Also, a study showed that an article that was originally three hundred words was better understood when written into six hundred or twelve hundred words. As a result, authors increased the length of an article to make comprehension easier.<sup>2</sup>

Much of social studies was based on concepts which were frequently difficult for students. Not only must they understand the words, but they must also get a mental image. Furthermore, the amount an individual understood depended on his maturity, intelligence, and direct experience. For example, a child's concept of tolerance might be narrow, but as he matured, he would realize that it referred to race, religion, values, and ideas.<sup>3</sup>

Two concepts played an important role in the social studies. The first was place concept because the students

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<sup>1</sup>Bamman, Reading Instruction in the Secondary Schools, p. 141.

<sup>2</sup>Figure 1, "Development of Competence in the Interpretation of Social Studies Material," p. 88.

<sup>3</sup>Bamman, Reading Instruction in the Secondary Schools, pp. 141-142.

must be aware of place relationships and know of specific places. Geography was very important in itself and was very influential in history. For example, Pressey found college freshmen had to know one hundred fifteen geographical places in American history. The second concept concerned time. One hundred eighteen words of Thorndike's first two thousand five hundred words were related to time. Furthermore, chronology was an important aspect of social studies.<sup>1</sup>

Charts, graphs, and pictures further increased textbook difficulties. The use and complexity of charts and graphs had become more apparent in present-day textbooks. Also, pictures were more plentiful since they added to the student's comprehension, interest, and retention. All of these helped effective learning. However, pictures varied in the number, quality, and difficulty of the captions. Studies showed that students must be taught to read pictures and to integrate the printed material with the pictures.<sup>2</sup>

Considering the factors which created problems in social studies such as the vocabulary, concepts, and visual aids, the selection of textbooks became very difficult. Most importantly, the readability of the material must be geared the students' reading abilities. Many textbook committees unquestioningly accepted the publishers' grade

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<sup>1</sup>Figure 1, "Development of Competence in the Interpretation of Social Studies Material," pp. 88-89.

<sup>2</sup>Ibid., p. 90.

designations of readability. The publishers tried to make reasonable and accurate judgments, but still teachers complained that the textbooks were inappropriate and misgraded for the students.<sup>1</sup> When reading teachers graded these books, they verified that they were misgraded. The problem remained that parents and teachers still believed the publisher's grade designations.<sup>2</sup>

Publishers have defended their position by stating that it was impossible to grade children's textbooks accurately since the reading standards vary widely throughout the country. However, one-half of the publishers did not use a formula to determine the readability of the textbooks. Instead, they relied on educational consultants and authors who often were out of touch with the current school systems and children. Furthermore, the publishing companies defended themselves by stating that they could not control all the factors. However, they should have been able to control the mechanical ones such as vocabulary and sentence length.<sup>3</sup>

Besides the difficulty of reading a social studies textbook, there were other problems. First of all, the authors felt compelled to pack as much information as possible into the books without helping the student by giving supporting

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<sup>1</sup>Spache, Good Reading for Poor Readers, pp. 21-22.

<sup>2</sup>Robert E. Mills and Jean R. Richardson, "What Do Publishers Mean by 'Grade Level'?" Reading Teacher 16 (March 1963): 359-62.

<sup>3</sup>Ibid., pp. 395-361.

details.<sup>1</sup> Also, this information was thrown at the student at a terrifying pace as the syllabus required that the teacher and textbooks cover a huge amount of information.<sup>2</sup> Secondly, the textbooks were frequently very boring.<sup>3</sup> This problem would be alleviated somewhat if the authors would include some of the interesting sidelights which would make the material more readable without adding greatly to the size of the textbook.<sup>4</sup> However, Peterson defended the social studies textbook authors by saying:

In fairness to authors of social science textbooks, however, it should be said that they possibly do not write any more obtrusely than do authors of other textbooks. They are dealing with complex social relationships, and it is sometimes difficult to make them lucid. Yet it appears at times that some writers lean over backward in an attempt to keep from popularizing their style.<sup>5</sup>

Since the textbook remained the basic tool of the teacher and was often the criterion for measuring whether a student mastered the course, readability of the textbooks was extremely

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<sup>1</sup>Constance McDullough, Ruth Strang, and Arthur Traxler, Problems in the Improvement of Reading (New York, N.Y.: McGraw-Hill Book Co., 1946), pp. 79-80.

<sup>2</sup>Peterson, Aspects of Readability in the Social Studies, pp. 5-6.

<sup>3</sup>Rudolf Flesch, The Art of Plain Talk (New York: Harper & Brothers, 1946), p. 148.

<sup>4</sup>A. Sterl Artley, "Types of Reading Development in the Social Studies," ed. W.S. Gray, Improving Reading in the Content Fields (Chicago: University of Chicago Press, 1947), p. 64.

<sup>5</sup>Peterson, Aspects of Readability in the Social Studies, pp. 1-2.

important. As a result, several studies were made of social studies and other subject area textbooks. Mallinson used the Flesch formula on science books and discovered that their level was too high for most of the students. More recently he tested physics texts and found the reading grade levels varied from average to difficult within the individual texts.<sup>1</sup> Johnson completed a study of book from five publishers. According to his findings, some books were acceptable to the average student although more were suited to the above-average readers. Also, none of the texts were good for the low-achieving reader.<sup>2</sup> Another study was made by Ayer which analyzed elementary school history books. The results of the study showed that the students did not understand the material as they repeated the textbook verbatim whenever they did not understand it.<sup>3</sup>

Social studies textbooks had certain inherent problems such as the vocabulary, concept load, and amount of facts. These problems were further aggravated by the publishers' failure to use readability formulas or to control the vocabulary and sentence length. Also, the teachers contributed to the

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<sup>1</sup>Peterson, Aspects of Readability in the Social Studies, pp. 1-2.

<sup>2</sup>Roger E. Johnson and Eileen B. Vardian, "Reading, Readability and Social Studies," Reading Teacher 26 (February 1973): 483-8.

<sup>3</sup>Peterson, Aspects of Readability in the Social Studies, p. 3.

problem by emphasizing the mastering of the textbook as a method of evaluating the student and also by failing to make adjustments for students who were below grade level.

## CHAPTER III

### PROCEDURE

In social studies the textbook has remained the basic tool of the teacher in spite of innovations.<sup>1</sup> In fact the mastery of the textbook was an important tradition that has still been maintained. The textbook often determined not only the content but also the procedures of the class.<sup>2</sup>

Textbooks have improved recently. The authors were at least aware of the need to control vocabulary to help alleviate the difficulty level. Also, more emphasis has been placed on better maps, graphs, charts, and illustrations to make the materials more interesting and readable. The importance of the interest factor was finally realized as a child could read much more difficult material if he had an interest in it.<sup>3</sup>

Seventeen eighth-grade social studies textbooks were evaluated in this research according to the Fry readability graph, quality of headings, cartoons, pictures, maps, questions for discussion or review, additional activities, and sources.

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<sup>1</sup>Peterson, Aspects of Readability in the Social Studies, p. 1.

<sup>2</sup>Edith P. Merritt, Working with Children in Social Studies, (San Francisco, Calif.: Wadsworth Publishing Company, 1961), p. 66.

<sup>3</sup>Figure 1, "Development of Competence in the Interpretation of Social Studies Material," p. 84.



Adventures in American History by Joseph H. Dempsey. Silver Burdett Company, Morristown, N.J., 1971.

Fry readability: 5th grade

Headings: The headings were clear, concise, and frequent enough to give the reader the main ideas.

Cartoons: The few cartoons which were used were explained well and gave good insight into the problems of the times.

Charts: The charts were easy to understand and further explained the reading.

Maps: Nearly all of the maps were small and in brown tones. Also, the lettering was too small to read easily.

Pictures: Pictures appeared on every page. They were small, black and white, and unattractive in the writer's opinion.

Questions for discussion or review: Each chapter contained two pages of review questions. The questions included supplying a word, finding the main idea, and naming geographical places.

Suggested activities for individuals or groups: None was included.

Listed additional sources: None was included.

Comments: This would be an uninspiring textbook for the student. The pictures were dull, and the review section might be confusing and repetitious. However, the material in the narrative was presented in a fairly simple manner.

American History for Today by Margaret Stimmann Branson. Ginn and Company, Boston, 1970.

Fry readability: 6th grade

Headings: Headings appeared every one or two paragraphs. In the text they were always in the form of a question to give the student some guidance in reading. The chapter subdivisions were orange, but they could have been printed in larger letters to enable the reader to find them.

Cartoons: Several cartoons appeared which pertained to specific historical events. The captions always explained any information the reader needed to understand the cartoon.

Charts: Several types of charts were used. At the end of each chapter there was a time line to be used as a means of review. A flow chart was used to illustrate checks and balances. The last type was a graph to demonstrate the population.

Maps: The maps were clear and uncluttered. All had excellent keys which made map reading easy. The only drawback was that all the maps were in green and orange.

Pictures: Black and white pictures appeared every few pages. Most of the captions were short, but they had some difficult words.

Questions for discussion or review: Headings were in question form, and questions were also used at the end of each section. Also, at the end of each chapter were questions for individuals and for class discussion. Thought questions were used to make the student think about what he would have done during that historical era.

Suggested activities for individuals or groups: No additional activities were provided.

Listed additional sources: The teacher's manual listed five to ten books at the end of each chapter, and these were rated as easy to read or for capable students.

Comments: The material was very well-written. However, the textbook could have been made more appealing by using colored pictures and maps.

The Americans by Edwin Fenton. Holt, Rinehart and Winston, New York, 1970.

FRY readability: 7th grade

Headings: Each chapter was divided into several parts. A part would be identified with a huge boldface heading and the reading would be one or two pages long.

Cartoons: None was included.

Charts: A few charts were used, but they were not too clear and lacked enough guidance through questions or the reading for the student to comprehend them.

Maps: Small, black and white maps appeared infrequently. More could have been used to explain the reading.

Pictures: A few small, black and white pictures were included in each chapter.

Questions for discussion or review: A workbook was provided, containing questions the student should answer on each part of the text. They were fact or thought questions or sometimes they required interpretation of a graph.

Suggested activities for individuals or groups: None was included.

Comments: The book was designed for the slow learner and hence the short reading selection and questions. However, the vocabulary was more difficult than the readability level suggested. Examples of the vocabulary were the words parody, glamor, and surge.

Building the American Nation by Jerome R. Reich and Edward L.

Billler. Harcourt, Brace & World, Inc., New York, 1968.

Fry readability: 7th grade

Headings: The headings were extremely easy to find as they were in black boldface type or orange letters. They appeared every two or three paragraphs.

Cartoons: The authors did not include any.

Charts: Time lines were given at the beginning of each chapter. No other charts were included.

Maps: The maps appeared whenever they were needed to illustrate a point in the reading. They were very simple and uncluttered, containing only the information which was essential for the reader. All the maps were orange and grey.

Pictures: Most of the pages had either a map or a picture. All of the pictures were black and white. They had short, simple captions.

Questions for discussion or review: Each chapter in the book contained introductory and review questions. At the beginning of the chapter were listed several facts that student should know. Also, the main idea was in bold print along with questions to help the student remember it. The introduction included a list of vocabulary words and a time line.

The review questions covered all the important facts of the chapter. The questions related to comprehension of the information, vocabulary, geography, people, and the main idea.

Suggested activities for individuals or groups: No activities were included.

Listed additional sources: Only the teacher's copy contained any references.

Comments: The textbook would be fairly good for the poorer reader as the reading selection was short, easy to understand, and contained questions before and after it. However, the textbook could have used some colored pictures to arouse the student's interest.

The Challenge of America by Mitchell Okien and Stephen Bronz.

Holt, Rinehart and Winston, Inc., New York, 1973.

Fry readability: 7th grade

Headings: The headings were short, frequent, and small in size.

Cartoons: None was included.

Charts: The only charts were timelines at the beginning of each chapter. They were confusing as they had too many lines and facts. For example, the time line on pp. 150-51 had five differently colored horizontal lines. Underneath the lines were years which divided the lines into nine areas. Fifteen facts were then placed on these lines according to the year they occurred.

Maps: The maps were very good. They were usually large, clear, and in color.

Pictures: Several pages in each chapter were devoted to pictures. Most of these were in color or reproductions of originals.

Questions for discussion or review: Usually four or five questions were included at the end of each subdivision in the chapter. They were review questions on the information only, not on concepts.

Suggested activities for individuals or groups: None was included.

Listed additional sources: Only the teacher's manual contained lists of other materials.

Comments: The authors' orientation was toward factual knowledge. They did not include any interesting sidelights or ask any thought-provoking questions. The lack of activities or sources was further proof of their theory.

The Developing Years by Sidney Schwartz and John R. O'Connor.  
Globe Book Company, New York, 1971.

Key readability: 8th grade

Headings: The headings were short and frequent enough to give the student the main idea of a section.

Cartoons: None was included.

Charts: Several charts in the form of graphs or diagrams were used. One unique feature of this book was that the chapter always had several questions at the end to guide the student in interpreting the chart.

Maps: The maps were rather small, infrequent, and usually in black, white, and green. The text would have been better if more maps had been used to illustrate the narrative.

Pictures: The pictures were small and black and white. Nearly all were portraits rather than pictures of events.

Questions for discussion or review: Each chapter contained sections on vocabulary and understanding the facts. However, the textbook had one unusual feature. Two pages of each chapter were devoted to improving the students' skills in the areas of maps, graphs, outlining, finding the main idea, and answering essay questions.

Suggested activities for individuals or groups: A variety of activities were suggested which included reports, explaining the difference between words, and staging events or simulations.

Listed additional sources: None was included.

Comments: The best part of the book was its emphasis on study skills. It was the only book reviewed which had questions on graphs and maps. In the other books these materials were shown but would not be discussed in the text or in review questions. The book could have enhanced its appeal to students with colored pictures and graphs.

Discovering American History by Allan O. Kowmslar and Donald B.

Frissle. Holt, Rinehart and Winston, Inc., New York, 1974.

Fry Readability: 10th grade

Headings: The main headings appeared in black bold-face type and the subheadings in large blue type. They were simple and to the point.

Cartoons: A few cartoons were included which related to various phases of American history. They had a brief explanation for the student, and this was followed by one or two thought questions.

Charts: Two types of charts were used. The introduction to each unit included a colorful, easy to read time line of important events of that period. Also, multi-colored graphs were used to illustrate statistical information.

Maps: The maps related to battles were excellent in their simplicity and clearness. The other maps were good, but they should have been much larger. Also, reference maps of the United States and the world were missing.

Pictures: Nearly all the pictures were in color except for a few original black and white sketches. The majority were reprints of pictures from the historical periods. These would give the student a better understanding of the people and the times.

Questions for discussion or review: Questions appeared at the end of each selection in a chapter. These included both factual and thought questions. The chapters also had a summarizing question so that the student had to synthesize his information into a generalization.

Suggested activities for individuals or groups: None was included.



Listed additional sources: The only sources included were the ones which the authors put next to the reading selections.

Comments: The entire book was composed of excerpts from various authors. This textbook might be useful as a sourcebook of readings but certainly not as a main textbook because of its lack of continuity among the readings.

Episodes in American History by Robert E. Burns, John J. Lyon, and Philip Gleason. Ginn and Company, Lexington, Ky., 1973.

Fry readability: 10th grade

Headings: The headings appeared often and were short although many of the words were difficult. Examples of the difficult words were rationalisation, husbandry, statistical, and advocates.

Cartoons: None was included.

Charts: The chronology charts were good summaries of the reading, but the graphs lacked sufficient questions to aid the student's understanding.

Maps: Maps appeared very infrequently, were small, and in brown tones. The textbook would have been better if more maps had been used and they appeared as they related to reading instead of several pages of maps spread sporadically throughout the book.

Pictures: Nearly all the pictures were tiny black and white portraits. Only a few pictures were included which illustrated events discussed in the reading.

Questions for discussion or review: Three questions sometimes appeared at the beginning of a chapter. They required the student to explain the effect an event made. The following are examples taken from pp. 88-9 of the Division, Unity and Expansion book in the Episodes in American History series:

1. How did railroads affect the growth of cities?
2. How did railroads try to encourage settlement of lands granted to them by the Federal government?
3. What inferences about the impact of railroads on Indian life are suggested by these pictures?

Suggested activities for individuals or groups: None was included.

Listed additional sources: None was included.

Comments: This textbook was composed of four paperback books. All of the book were inquiry orientated. Several viewpoints of a person or event were presented so that the student could draw his own conclusions. However, much of the background information surrounding the events was omitted. Also, the books lacked a sufficient number of good pictures which would show what had occurred.

Exploring American History by Melvin Schwartz and John O<sup>\*</sup>

Conner. Globe Book Company, New York, 1968.

Key readability: 6th grade

Cartoons: None was included.

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<sup>1</sup>Robert E. Burns, John J. Lyon, and Philip Gleason, Division, Unity and Expansion (Lexington, Ky.: Ginn and Company, 1973), pp. 88-9.

Charts: Charts were frequently used at the end of a chapter to summarize contributions of important political figures or to show causes and effects.

Maps: The maps were simple and clear. All were in black and white.

Pictures: Each page had at least one or two small pictures. However, in this author's opinion, they would not provoke much student interest as they were in black and white.

Questions for discussion or review: Half of the chapter was devoted to review questions to help the student understand the facts, main ideas, and the reasons for events.

Suggested activities for individuals or groups: None was included.

Listed additional sources: Each unit contained an annotated bibliography.

Comments: The authors have presented the material in short units with plenty of questions to give the student direction. Also, social studies skills such as making charts and outlines and understanding maps were emphasized.

The Free and the Brave by Henry F. Graff. Rand McNally & Company, Chicago, 1972.

Key readability: 7th grade for regular edition  
6th grade for starred edition

Cartoons: Several cartoons were used, but they could have been explained better. For example, the only explanation of a picture of a man pouring tea down the throat of a man who had been tarred and feathered was that it was a popular cartoon.

Charts: A few charts were included to illustrate facts in the reading. Questions were included to help the student understand the main idea of the chart.

Maps: The maps were easy to read and in color. However, more were needed to show places and areas which were mentioned in the narrative.

Pictures: The textbook was filled with outstanding pictures. They included portraits, pictures of events, and reproductions of original pictures. Most of these were in color, and all of them correlated exceptionally well with the reading.

Questions for discussion or review: The majority of the review questions were geared to help students understand the concepts and trends once they knew the facts. Their emphasis was on understanding why an event occurred and the importance of a person or a term.

Suggested activities for individuals or groups: Many possible activities were offered in the form of discussions, research, or art projects.

Listed additional sources: Each unit included an annotated bibliography.

Comments: This was a textbook which would probably interest the student with its unusual pictures and story-like narrative. The subject was dealt with in a thorough manner with an ample amount of additional activities or references. Also, two editions of the textbook were published.

One was for the students reading near grade level and the other for the slightly lower readers.

Impact of Our Past by Bernard A. Weisberger. Webster Division, McGraw-Hill, St. Louis, 1972.

Fry readability: 8th grade

Headings: Each chapter was divided into subdivisions which were several pages long. The subdivisions had concise headings, but there were no other headings within the subdivision to point out the main ideas.

Cartoons: Several cartoons were used, and most of them were in color. They were explained well and would enrich the student's understanding of the times.

Charts: None was used.

Maps: The author included numerous maps. While most of them were not in color, they were easy to understand and illustrated the narrative very well.

Pictures: Pictures were this book's best attribute. Every page had at least one, and most of them were in color. The pictures were the type that would not only explain the text, but also arouse the student's curiosity.

Questions for discussion or review: Each subdivision and chapter had questions for discussion. Also, the teacher's manual contained many questions to ask the student about the narrative and pictures. Some of the questions were fact questions but most were inquiry orientated.

Suggested activities for individuals or groups: None was included.

Listed additional sources: A bibliography appeared at the end of each chapter.

Comments: This was an extremely attractive and appealing textbook. It fostered an inquiry approach to learning, and the pictures, questions, and narrative supported this goal very well.

Liberty and Union by Martin Ridge, Raymond J. Wilson, and George Spiero. Houghton Mifflin Company, Boston, 1973.

Fry readability: 8th grade

Headings: Each chapter subheading was presented in the form of a question to give the student direction. Also, smaller headings were used every two or three paragraphs to help the student understand the main ideas.

Cartoons: None was used.

Charts: Many graphs and time lines were scattered throughout the book. They were simple and concise.

Maps: The book contained numerous maps. They were all in color, and the important ones took a whole page. The maps were presented to help the student locate places, boundaries, routes, and geographic features or to illustrate important ideas which were developed in the narrative.

Pictures: All the pictures were in color and presented in an attractive manner. Many were works of artists of a period so that the student could visualize the times through the eyes of someone who lived then.

Questions for discussion or review: At the end of each chapter there was a glossary of new terms and a set of questions requiring inferential thinking.

Suggested activities for individuals or groups: Several activities were suggested at the end of each chapter. Most of these were in the form of written or oral reports.

Listed additional sources: In the student's textbook the only sources were included in the section on suggested activities. The teacher's manual did not have a bibliography either, although there was an extensive listing of audio-visual materials.

Comments: The textbook was based on the inquiry approach. As a result, many original readings and pictures were included to give a better idea of the times. The book was well-written and thought-provoking.

One Nation Indivisible by Landis R. Heller, Jr. and Norris W. Petter. Charles E. Merrill Publishing Co., Columbus, Ohio, 1971.

Fry readability: 10th grade

Headings: The headings were frequent, in large type, and short. They would be helpful to the student.

Cartoons: Only one cartoon was included. The authors explained it well and then questioned the reader as to how it reflected on the times.

Charts: None was included.

Maps: The maps were small and the two tones of one color made them hard to read.

Pictures: Nearly all the illustrations were small, black and white portraits. The book would be interesting if the authors had chosen colored pictures which related to the text.

Questions for discussion or review: Nearly half of the review section was devoted to identification of people, places, times, or dates. Another section consisted of questions which required the student to assimilate ideas through comparison and evaluation. The last section required the student to place himself in history.

Suggested activities for individuals or groups: None was included.

Listed additional sources: None was included.

Comments: The textbook needed improvement in the areas of maps, pictures, activities, and resources. However, the authors have included a great deal of information in a readable style.

One Nation: The United States by Leonard S. Kenworthy. Ginn and Company, Lexington, Ky., 1972.

Prereadability: 7th grade

Headings: The headings were in large black type and appeared every few paragraphs.

Cartoons: None was included.

Charts: A few time lines and graphs were used to illustrate points made in the reading. They were exceptionally well done and easy to understand.

Maps: The maps were rather small but clear.

Pictures: The pictures were abundant and well coordinated with the reading. Many were drawings or pictures taken at the events which would give the student a better understanding of the times.



Questions for discussion or review: No questions were found in the student's textbook although various kinds of questions were included in the teacher's edition.

Suggested activities for individuals or groups: None was included.

Listed additional sources: A list of books, films, and filmstrips appeared at the end of each chapter.

Comments: One Nation: The United States was composed of two sections. The first section was about various aspects of the land, people, and government today. The second half of the book was devoted to the history of the country. Since most eighth grade social studies curricula stress only the history of the United States, the first half of the book might not be used. However, the author did offer some helpful suggestions for activities.

Profile of America by Richard E. Gross and Robert F. Madgic.

Field Educational Publications, Incorporated, Palo Alto, Calif., 1971.

Key readability: 10th grade

Headings: The only headings used were the chapter headings.

Cartoons: None was included.

Charts: None was included.

Maps: None was included.

Pictures: A few pictures were included at the end, but none was used anywhere else in the books.

Questions for discussion or review: None was included.

Suggested activities for individuals or groups: None was included.

Listed additional sources: None was included.

Comments: Profile of America was composed of five large paperbacks. All of the material was from segments of various authors' works which related to the historical period of each particular book. There was little explanation of why the events in the readings occurred or how they were linked together. The series was intended for inquiry but other than the readings there was nothing else to stimulate the reader's interest or comprehension in the form of any sort of graphic or pictorial aids.

Promise of America by Larry Cuban and Philip Roden. Scott, Foresman, and Company, Glenview, Illinois, 1971.

Fry readability: 8th grade

Headings: The headings were extremely large, to the point, and interest-arousing.

Cartoons: A few were included, but they were not explained in any way.

Charts: None was included.

Maps: A few maps were used in each of the five books. They were fairly large and easy to read.

Pictures: Many pictures were taken at an event or else were drawings of the times. They supported the reading well and were in brown tones except for seven pages of colored

pictures at the beginning of each book. The captions were so small that they were hard to find, and several pictures did not have any.

Questions for discussion or review: Each chapter ended with about six questions which tried to get the student to consider what he would have done during particular historical events.

Suggested activities for individuals or groups: None was included.

Listed additional sources: None was included.

Comments: The Promise of America was composed of five large, glossy paperbacks. Much of the material was in the form of reports which are conducive to the inquiry approach. However, the textbook could have used more factual reading to tie the primary source materials together better.

Study Lessons in Our Nation's History by Jack Abramowitz.

Pellegrin Educational Corporation, Chicago, 1970.

FRY readability: 9th grade

Headings: The format and number of headings made the chapters confusing. Three headings were used at the beginning of each chapter to introduce the vocabulary. The actual text was simply labelled The Reading Selection. The selection was one to one and a half pages, and it was followed by two more pages of headings for review questions.

Cartoons: None was included.

Charts: None was included.

Maps: The maps were small, infrequent, and in black and white.

Pictures: Most of the pictures were small, black and white portraits. Only a few were pictures of events discussed in the readings.

Questions for discussion or review: The number of questions was entirely out of proportion to the text. They took up half of the chapter.

Suggested activities for individuals or groups: None was included.

Listed additional sources: None was included.

Comments: The book contained the minimum amount of information as only one-fourth was devoted to the narrative. The remainder of the book contained questions on this material.

#### Summary

The textbook has been an important tool for the social studies classroom. For that reason it was important that students be able to read it.

Of the seventeen books reviewed, thirteen were at the eighth grade reading level or below. Table 1 shows the reading levels. The problem remained that the students' reading abilities could range one-third of their age above or below their grade level. This would mean the average class would be reading in the range of fourth through twelfth grade reading level. The seventeen books in this study might be acceptable to the average student, but the ones at either end of the continuum would either be lost or bored.

TABLE 1

## READING LEVELS OF TEXTBOOKS

Textbook	Grade Level					
	5	6	7	8	9	10
Adventures in American History.	X					
American History for Today. . .		X				
The Americans . . . . .			X			
Building the American Nation. .			X			
Challenge of America. . . . .			X			
The Developing Years. . . . .				X		
Discovering American History. .						X
Episodes in American History. .						X
Exploring American History. . .		X				
Free and the Brave (regular). .			X			
Free and the Brave (starred). .		X				
Impact of Our Past. . . . .				X		
Liberty and Union . . . . .				X		
One Nation Indivisible. . . . .						X
One Nation: The United States.			X			
Profile of America. . . . .						X
Promise of America. . . . .				X		
Study Lessons in Our Nation's History . . .						X

All of the books reviewed had fairly large and frequent headings. Exceptions were The Americans which used headings only for chapter divisions and Study Lessons in Our Nation's History which had so many that they would confuse the reader.

Ten books did not have any cartoons. Of the remaining seven texts only Discovering American History and Impact of Our Past explained and asked questions about the cartoons.

Four textbooks did not include any charts. Several of the texts which had charts did not present them well. Building Our Nation and the Challenge of America had only time lines. Developing Our Nation and One Nation Indivisible had exceptionally well-done charts with questions to guide the students in interpreting them.

Though maps are important to the study of American history, the books reviewed were deficient in them. Profile of America did not have any, and four had small, black and white maps. Eight had small maps which were uncluttered. Liberty and Union, Challenge of America, The Free and the Brave, and Impact of Our Past were excellent as theirs were in color, large, and exceptionally easy to read.

Pictures are another important aspect of a social studies textbook as they are frequently the only way the student can visualise the events. However, Profile of America did not have pictures. Eleven texts had only black and white pictures and sometimes only a few were used in a text. Impact of Our Past, The Free and the Brave, and Liberty and Union were outstanding in this area as they were filled with large colored pictures.

With the exception of two texts all had some type of questions for discussion or review. Some emphasized factual material while others were interested in concepts. The best text in this area was The Developing Years as it included not only questions on vocabulary and facts but also two pages of social studies skills in each chapter.

Activities are a large part of a social studies program as they are excellent ways of getting the student involved and learning more about a particular aspect of history. However, only three textbooks suggested any activities.

Teachers and students often need additional sources for projects or to find information about a particular area which the class may have. Eleven textbooks did not list any sources, and three had lists in the teacher's manual only. Three textbooks had an annotated bibliography at the end of each chapter, and The Free and the Brave had the best listing with good descriptions of each book.

This study has shown that most of the textbooks which were reviewed were poor in the areas of cartoons, charts, maps, pictures, questions for discussion or review, activities, and additional sources.

#### Suggestions for Further Research

Further research in the content areas would be useful for the content area teachers. An analysis of the social studies and other content area textbooks at the elementary and high school levels would be very useful. Also, studies

could be done in which a variety of textbooks would be used with classrooms. The students could be given an opportunity to rate the textbooks. Then, the teacher selection could be based on student ratings, readability levels, and other supplementary features of a textbook.



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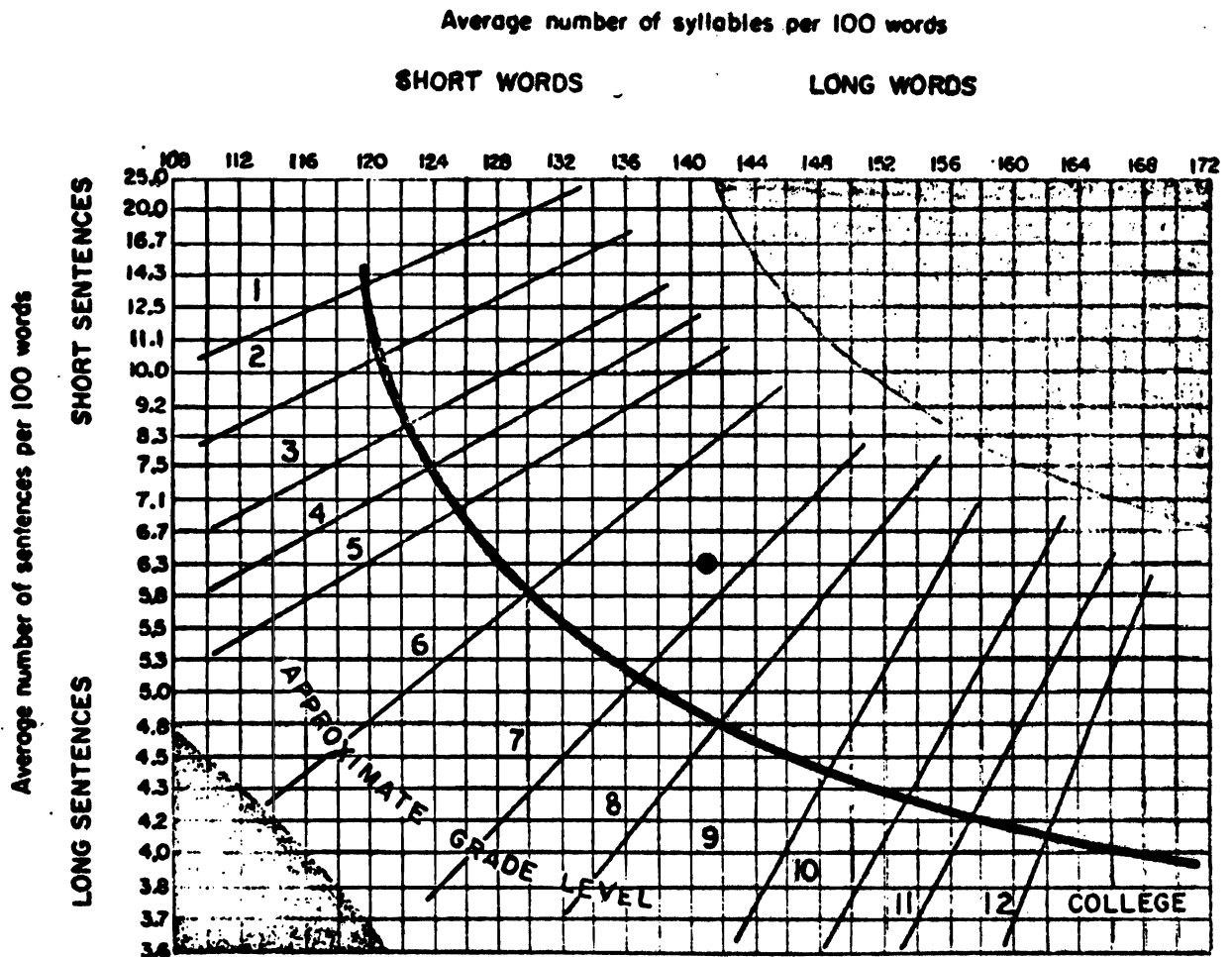
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**GRAPH FOR ESTIMATING READABILITY**by Edward Fry, Rutgers University Reading Center,  
New Brunswick, New Jersey

**DIRECTIONS:** Randomly select three 100-word passages from a book or an article. Plot the average number of syllables and the average number of sentences per 100 words on the graph to determine the grade level of the material. Choose more passages per book if great variability is observed, and conclude that the book has uneven readability. Few books will fall in the gray area, but when they do, grade level scores are invalid.

	SYLLABLES	SENTENCES
<b>EXAMPLE:</b> 1st Hundred Words	124	6.6
2nd Hundred Words	141	5.5
3rd Hundred Words	158	6.8
AVERAGE	141	6.3

READABILITY 7th GRADE (see dot plotted on graph)

For further information and validity data, see the April, 1968 Journal of Reading and the March, 1969 Reading Teacher.