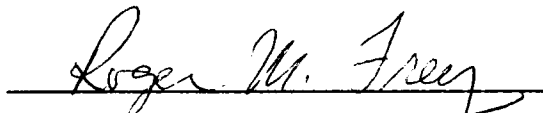
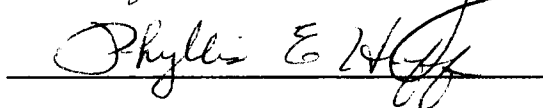


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AN EVALUATION OF THE READABILITY OF
FIVE SOCIAL STUDIES SERIES

A Thesis
Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

Lynda Carol Wheeler

May 1989

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ABSTRACT

The purpose of this study was to evaluate five social studies series as to the readability scores, consistency of readability scores within the texts, and the reinforcement of new vocabulary words. The readability scores were calculated by using the Harris-Jacobson Wide Range Readability Formula. The new vocabulary words introduced in each series were listed on the Worksheet for Analysis of Instructional Materials Beyond Readability Scales (Schindler, 1980). The reinforcements of the new vocabulary words were checked on this worksheet.

Only two of the five publishers had every text written at a readability level which was the same as the publishers' estimated grade level. The five social studies series were not consistent throughout each text with regard to readability, with only three of the fifteen texts examined having computed readabilities for each sample within one year of the actual mean readability of the text. The five social studies series also did not adequately reinforce new vocabulary words the recommended five or more than five times. These findings stress the need for publishers and educators to carefully evaluate the readability of textbooks in order to insure that all students can read and comprehend the information presented to them in this major teaching tool.

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CHAPTER I

STATEMENT OF THE PROBLEM

1. Purpose of the Study

Social studies is a very important aspect of a child's curriculum. It is in social studies class that a student learns about his city, state, country, world, total environment and the student's relationship to these. Students learn that there is more to the world than their hometown. Students learn about history, and how people and events have shaped the world and even the student's own life today. They discover other civilizations and cultures and open their minds to new ideas. Even the youngest children who begin working in social studies are fascinated by the way people in other cultures live. However, we hope our children will not simply learn facts about other ways of life, but that they will learn open-mindedness and a respect for ways of life other than their own. This is quite a task for the social studies teacher. Consequently, faced with such an enormous task, it is essential that the teacher have available materials that students can understand. In most fourth, fifth, and sixth grade classrooms, the most utilized tool in teaching social studies is the textbook. Therefore,

it is vital that these texts are on a readability level that the students can read and comprehend. The purpose of this study was, then, to determine the readability of fourth, fifth, and sixth grade social studies textbooks. Specifically, the following were evaluated:

1. The overall readability level of each fourth, fifth, and sixth grade social studies text from five publishers, and any discrepancy between these readability levels and the publishers' stated grade levels.

2. The degree of consistency of readability within each grade level of each text.

3. Reinforcement of new words by their appearance at least five times in the lesson in which they were introduced and the next three lessons.

2. Need for the Study

Within any one classroom, there is a wide variety of ability levels among the students. Even among so-called "normal" children (children with no handicapping condition), there are a wide range of reading abilities. For example, in a hypothetical fourth grade classroom, let us suppose that all the students are nine years old. Hargis (1988) states that

assuming none of the children have Intelligent Quotients (IQ's) considered to be below or above

the normal range, there is still the possibility of an IQ range from eighty through one hundred and twenty. Using the formula which multiplies IQ by chronological age to determine mental age, these children would have possible mental ages of 7.2 through 10.8.

Obviously, there is a wide range of cognitive ability among these children. It is also obvious that not all children in a fourth grade class will be nine years old, which further causes a span of ability levels. Additionally, in a typical classroom there will be students with learning disabilities or even with borderline mental retardation. All of this must be taken into consideration when selecting textbooks. Even if a textbook's readability is on the grade level for which it was intended, there will be students who will have difficulty comprehending the material. Therefore, it is essential that school systems select textbooks that are, at the very least, on grade level.

There is a strong case to be made for publishers printing social studies texts with readability actually below grade level. Social studies is an area that presents the student with an abundance of new ideas and concepts. The student should have the freedom to concentrate on learning these new ideas rather than struggling to read the text. It is therefore necessary that our social studies textbooks are comprehensively evaluated to ensure that their readability is not above grade level, and thus to enable students to succeed in their social studies endeavors. If

publishers do not accurately and completely evaluate the readability of their social studies texts, then it is up to educators to do so. It would seem that school systems would want to be absolutely certain that students are comprehending the materials on which the schools are spending vast amounts of money. If texts are not appropriately evaluated, then not only is money wasted, but students are being done a great disservice.

3. Definition of Terms

For use in this study, terms were defined as follows:

1. Comprehensive evaluation is an evaluation technique which utilizes the Harris-Jacobson Wide Range Readability Formula and the Worksheet for Analysis of Instructional Materials Beyond Readability Scales (Schindler, 1980).

2. Comprehensive readability is the grade level of textbooks as computed by a readability formula and the number of times words introduced in a chapter are reinforced.

- A. Actual readability is the grade level computed by a readability formula.

- B. Estimated readability is the grade level designated to each textbook by the textbook publishers.

3. New words are the vocabulary words introduced for the first time in a lesson.

4. Readability formula is a method used to compute the probable success a reader will have in reading and understanding a piece of writing (Klare, 1963).

5. Reinforcement is the number of repetitions of new vocabulary words within a lesson.

6. Social studies is an area of the curriculum which deals specifically with people and their dynamic relation to the social and physical environment, including how they are influenced by their environment and how they alter it to satisfy individual and group needs, how customs and institutions have emerged, and how people are attempting to solve current and future problems.

7. Word lists accompany readability formulas to check the percent of hard words in the samples examined. The words on the lists were chosen by the authors of readability formulas to validate the calculated results.

8. Worksheet for Analysis of Instructional Materials Beyond Readability Scales is a worksheet on which new vocabulary words can be listed and the frequency of reinforcement of these words can be computed.

9. Textbooks are books dealing with a definite subject of study, systematically arranged, and intended for use at a specific level of instruction.

4. Assumptions

The following assumptions have been made by the companies that publish and the school systems that purchase social studies texts:

1. The social studies textbooks have a readability consistent with the grade level for which the texts are intended by the publisher.

2. It is not up to the teacher to evaluate the readability of texts in social studies and other content areas, as these have been evaluated accurately and completely by the publisher.

3. The majority of students in a given classroom will be able to comprehend social studies materials published for the grade level in which the students are placed.

4. It is assumed that the students in a given classroom are on approximately the same ability level and will progress at the same rate.

5. Null Hypotheses

1. There is no difference between the publishers' estimate of readability and the actual computed readability scores based on a readability formula.

2. The difference between the computed individual readability level of each sample and the mean computed readability level of the text is one year or less.

3. There is no difference between the publisher's number of reinforcements of the new vocabulary words and the recommended five times or more within the introductory lesson.

6. Limitations

1. Factors that influence readability such as sentence structure, style of writing, and logical organization were not evaluated in this study.

2. Five samples from each text were used to compute readability. Although these are probably enough samples to give a fairly accurate readability score, it should be remembered that the score obtained should be used as a guideline and not as an exact indication of readability, since it is possible that the random samples may not be truly representative of the text as a whole.

7. Summary

Reading and comprehending textbooks is essential for a student to be able to learn the information presented in

content area classes such as social studies. Therefore, it is vital that textbooks have a readability level on (or even below) the grade level for which they are intended. It is up to educators to be aware of readability levels and the consistency of these throughout textbooks selected for their students. The purpose of the study, need for the study, definition of terms, assumptions and null hypotheses were presented in this chapter.

CHAPTER II

RELATED LITERATURE

1. Introduction

The purpose of this chapter is to review the aspects of readability, readability in relation to teaching social studies specifically and the comprehensive evaluation of readability.

The Aspects of Readability

The most common definition of readability is given by Klare (1963). He states that the term readability is used "to indicate ease of understanding or comprehension due to the style of writing." Peterson (1954) then further defines comprehension as:

that aspect of the total reading process which relates to understanding and interpreting written material as evidenced by the following specific abilities:

1. Understanding the words in context.
2. Grasping the pattern of thought as a whole.
3. Noting the relationship of specific details.
4. Drawing correct inferences.
5. Integrating the ideas expressed with experience. (p. 13)

An extensive computer search reveals that while there has been ample research done on the subject of readability

in general, there have been very few studies done concerning the readability of social studies textbooks specifically.

Historically, it is pointed out by Klare (1963) that concern for readability has been in evidence for hundreds of years among religious writers who were the only literate persons of their day. He adds that readability has long been an area of concern for educators, citing the consideration given to ease of understanding of vocabulary in the McGuffey Readers (about 1840) as an example.

Typically, readability formulas have been used to determine readability. Maxwell (1978) states that:

It was Rudolph Flesch who popularized the concept of readability through his books and articles and who ushered in the era of plain-speak. Flesch's books spawned a writing revolution. Authors became painfully aware of the length of sentences they wrote and the number of polysyllabic words they used. Many other researchers developed readability formulas which were simpler than Flesch's Reading Ease formula but used similar variables--sentence length (or number of independent clauses) and some of word length (number of syllables or number of three-syllable words, for example). Among the attempts to simplify Flesch's formula were the J. N. Farr-J. J. Jenkins-D. G. Paterson formula, Lorge R. Gunning's FOG Index, E. Fry's readability formula, and G. H. McLaughlin's SMOG grading. The E. Dale-J. S. Chall readability formula, still widely used, involves sentence length and the number of words NOT appearing on a list of 3000 common words. All of the scales were validated against some measure of reading comprehension. (p. 39)

Duvall (1971) analyses the basic philosophy underlying readability formulas. He quotes Chall as stating the belief

that readability meant matching the reader and printed material, assuming that readers differ in their reading ability.

According to Standal (1978), it has been assumed that "higher frequency words aid comprehension, and that lower frequency words retard comprehension" (p. 55), and that "long sentences contribute to the difficulty of reading material" (p. 56). However, while conceding that readability formulas are of inestimable value in matching reading material to the ability of a given child, he reminds us that:

Each child comes to school with a unique background of experiences, interests and abilities. But no one has devised a readability formula that includes components for measuring individual interests and experiences. (p. 54)

The consensus of most researchers then appears to be that while utilizing readability formulas should not be considered an exact means or the only means used in selecting textbooks, it is an excellent means of helping insure that most textbooks are comprehended by most students. Whipple (1969) states that a useful method of evaluating textbooks is applying statistical procedure to content to ascertain readability. Brittain (1981) suggests that teachers be aware of the excessively high levels of readability in content area materials and the heavy demands this places on the students' cognitive abilities. Backus (1988) feels that not only should educators be aware of the research done

regarding textbook readability, but that they need to conduct their own readability tests rather than relying on the stated grade levels of the publishers.

Readability in Relation to Teaching Social Studies

As previously stated, there has not been an abundance of research done in the area of readability of social studies texts. Earnest Horn was one of the first to be concerned with the readability of the social studies textbooks used in our school systems. Peterson (1954) quotes Horn as stating:

Many of the ideas presented in typical textbooks in geography, history, or other social studies are so intrinsically complicated that they would be difficult to understand even if described in liberal detail, in untechnical language, and in a lucid, attractive style. Actually, however, they are presented in the form of condensed and abstract statements that are readily understood only by those who have already formed the generalization for which the statements stand. (pp. 157-158)

Peterson (1954) agreed with Horn and did a study which investigated the readability of social studies texts. However, rather than studying the more commonly investigated aspects of readability (vocabulary level, sentence length and sentence structure), she focused on two phases she felt needed further research: organization and interest. In her study, two passages of one thousand words each on feudalism and imperialism were rewritten into modified versions--one

intended to increase interest and one to provide more logical organization. Ninety-nine tenth grade students were divided into three groups, and each group read a different version of the passages. The students' comprehension was measured with two tests, a free-response item, and a rating scale for their opinions. Both the tests and the free-response data warranted the conclusion that the modified versions were all more readable than the originals. Peterson concluded that due to the complex material presented in social studies texts, the books needed to be rewritten with regard for interest and organization, with special emphasis on vocabulary, inferences and organization.

Duvall (1971) studied the readability of all intermediate grade level social studies textbooks authorized for purchase in the adoption made by the Textbook Commission of the Indiana State Board of Education on December 12, 1968. He used the Dale-Chall readability formula to analyze twenty-three texts. Duvall concluded that all the fourth grade textbooks were written above grade level, five of seven fifth grade texts were above grade level, and most of the sixth grade texts were within the grade level designated. None of the texts were written with "progressive difficulty".

Brittain (1981) used the Dale-Chall formula to analyze a chapter taken from a sixth grade social studies text. She

found the average readability of six one hundred word samples taken from the chapter was grade eight, with a range from grade six all the way up to eleventh grade.

Consistency of grade level within social studies texts has also been recognized as a problem in other studies. Estes (1972) reports on the Arnsdorf study of 1963. He states that Arnsdorf applied the Spache Readability Formula and the Dale-Chall Formula to twenty-five books of four series in both primary and intermediate levels and found that although readability conformed to the intended grade levels, readability within a text ranged an average of 2.14 years. Estes reported on a similar study by Wyatt and Ridgeway done in 1958 using nine fifth grade level social studies texts. The average readability was fifth grade level, but the range averaged 4.33 years within a text.

2. Comprehensive Evaluation of Readability

The use of a comprehensive evaluation to determine a text's readability is of inestimable value to the teacher. By using such an evaluation, the teacher can be sure that the text studied is on an instructional level for the students. This level represents a book where the student can pronounce 95-97 percent of the words orally and achieve a score of 75 to 89 percent on a silent reading comprehension

test over the material. To insure adequate comprehension of the text, the teacher need to be sure that there is a match between the instructional reading level of the reader and the reading level of the book (Cushenbury, 1985). A comprehensive evaluation can be used to determine if such a match exists. Two aspects of a comprehensive evaluation were used in this study: (a) use of a readability formula and (b) use of a worksheet for further analysis.

Readability Scales

A readability formula can be a valuable instrument in determining the readability of textbooks. Harris (1985) states that "readability formulas have value, especially when their limitations are understood" (p. 601). Obviously, a readability formula does not constitute a complete evaluation of readability, but it can be used as a basic tool for educators beginning to evaluate their textbooks.

After examining several well-known readability scales, the Harris-Jacobson Wide Range Readability Formula was chosen for this study. Although the Dale-Chall formula was previously the most widely used formula for the grade levels evaluated in this study, Harris (1985) states that the Harris-Jacobson formula "is easier to apply than the aforementioned formula, and is based on basal readers in wide use in 1980" (p. 598). The Harris-Jacobson formula surpasses

the Dale-Chall formula (and also the Fry, Wheeler-Smith and SMOG formulas) when these were correlated with the McCall-Crabbs Comprehension Means. (The McCall-Crabbs test lessons have been used as the criterion in developing more than twelve readability formulas, including the Dale-Chall formula.) Harrison (1985) states that the Harris-Jacobson formula equals the Dale-Chall formula at the fourth, sixth and ninth grade levels and surpasses it at the twelfth grade level when correlated with the McCall-Crabbs Comprehension Means. Harris (1985) also notes that formulas have higher correlations with the formula used in developing them than with other criterion scales. He reports that also this is true of the Harris-Jacobson formula which has a higher correlation with publishers' designations than with McCall-Crabbs. Harris also reports that the word list utilized by the Harris-Jacobson formula is the most up-to-date available. The formula provides concise instructions for selecting sample passages, computing the percent of hard words (those not on the Harris-Jacobson Readability List), and determining the average sentence length. The number of hard words is divided by the number of words in the passage. The number of words is divided by the number of sentences. These two quotients are each multiplied by a constant factor and added to a constant to obtain a predicted raw score. A

table is used to convert the raw score to a readability (grade level) score.

A Worksheet for Further Analysis

In addition to the Harris-Jacobson Readability Formula, the Worksheet for Analysis of Instructional Materials Beyond Readability Scales was used in this comprehensive evaluation (Schindler, 1980), to record the number of new words introduced in a chapter and the number of times these words were reinforced. Cushenbery (1985) states that "once new words are introduced and taught, they should be included in succeeding lessons to provide sufficient learning reinforcement. For words to become a permanent part of one's reading and speaking vocabularies, they need to be reviewed and used regularly at later intervals during various school lessons" (p. 49). Kingsley (1965) states that there should be five repetitions of a word within the introductory lesson. Gates (1930) did a study that stressed importance of adequate reinforcement of vocabulary words. He found that even bright students had difficulty learning new words without sufficient reinforcement. Below are listed his findings on the number of repetitions necessary for students to retain new vocabulary words.

120-	I.Q.	-	20 repetitions
110-119	I.Q.	-	30 repetitions
90-109	I.Q.	-	35 repetitions
80-89	I.Q.	-	40 repetitions
70-79	I.Q.	-	45 repetitions
60-69	I.Q.	-	55 repetitions

It is obvious from the above findings that an important aspect of readability is the number of reinforcements of new vocabulary words.

3. Summary

While there has been ample research done on the subject of readability in general, there has been little research done on the readability of social studies texts specifically. If social studies texts are to be adequately evaluated, a comprehensive evaluation utilizing (a) a readability formula to calculate grade levels and consistency of readability within a text and (b) a worksheet to record new words and to determine frequency of reinforcement of these words is necessary. Previous research has pointed out that social studies texts often do not have an actual readability level that is equivalent to the publisher's estimated readability level. It is necessary for educators to be aware of this when selecting textbooks.

CHAPTER III

DESIGN FOR EVALUATION OF SOCIAL STUDIES SERIES

1. Purpose

The purposes of this study were:

1. To determine if there is a difference between the publishers' estimated grade level of five social studies series and the actual readability of the series, as determined by the Harris-Jacobson readability formula.
2. To determine if there is a consistency of grade level and readability within each text.
3. To determine if there is a difference between the number of times new words are reinforced and the recommended five or more times.

2. Data Collection Procedures

Five social studies series which are on the Tennessee adopted textbook list and are used in various school systems in Tennessee have been chosen for this study. The series chosen were as follows: Follett (1983); Ginn (1983); Holt (1983); Laidlaw (1983); and Scott, Foresman (1983). The

grades to be evaluated are fourth, fifth and sixth grades. Data were gathered by the researcher.

3. Instrumentation

The following instruments were used to collect data for this study: (a) the Harris-Jacobson Wide Range readability formula (see Appendix A) and (b) the Worksheet for Analysis of Instructional Materials Beyond Readability Scales (Schindler, 1980) (see Appendix B). These instruments were chosen for this study due to their validity and ease of administration.

The Harris-Jacobson uses five two hundred word samplings from a selected text. The number of hard word (words not on the Harris-Jacobson word list), number of sentences and average length are computed. A formula raw score is given and then converted to a grade level.

The Worksheet for Analysis of Instructional Materials Beyond Readability Scales developed by Schindler (1980) takes samplings of three samples (beginning, middle and end). The new words introduced in these samplings are recorded and checked for number of reinforcements. Reinforcements are also checked in the next three lessons. It should be noted that in several of the texts (in no particular series and in no particular grade level) the same amount

of material that was presented as a lesson in other tests was presented as a chapter. Because the amount of material in these lessons and chapters was equivalent and only their titles were different, both were evaluated as lessons on the Schindler (1980) worksheet.

Data were analyzed by charting each social studies series according to readability scores and frequency of new word reinforcements.

To compare the data results, an index number for each book was computed by using a ratio placing the publishers' estimated grade level over the readability level computed by the Harris-Jacobson Wide Range readability formula. The result was then subtracted from 1. A 20% confidence interval was utilized as the allowable tolerance for index numbers close to 0, +.1 and -.1. A positive index number indicated that the actual readability level was higher than the publishers' estimated readability level. A negative index number showed that the actual readability level was lower than the publishers' estimated readability level.

The number of reinforcements for each new word listed on the Worksheet for Analysis of Instructional Materials Beyond Readability Scales were checked and categorized into three columns: less than 5, 5, and more than 5. Percentages were calculated by placing the number of reinforcements over the total number of new words presented in each book.

4. Summary

This chapter discussed the design for the evaluation of the social studies series. The five social studies series chosen were listed. The instruments used to evaluate the series were described. Finally, the process to be used for analyzing the data was discussed. The results of the study are discussed in Chapter IV.

CHAPTER IV

RESULTS

1. Introduction

The purpose of this study was to comprehensively evaluate the readability of five social studies series that have been adopted for use in Tennessee. In this chapter, the first section analyzes the null hypotheses for each individual textbook examined and is titled Individual Analysis of Each Social Studies Series. The second section compares the five social studies series and is titled Comparative Analysis of the Five Social Studies Series.

The five social studies series are discussed in this order: (a) Follett (Allyn and Bacon) (1983); (b) Ginn (1983); (c) Holt, Rinehart and Winston (1983); (d) Laidlaw (1983); and (e) Scott, Foresman (1983). The fourth, fifth and sixth grade texts were evaluated.

2. Individual Analysis of Each Social Studies Series

Follett

The observations of the Follett series, according to the null hypotheses, are as follows:

Hyo:1. There is no difference between the publisher's estimate of readability and the actual computed readability scores based on a readability formula.

The actual computed readability of the three Follett texts evaluated in the study is higher than the publisher's estimated grade level, according to the Harris-Jacobson formula. The fourth grade text has an actual readability (5.4) that is most likely too difficult for this grade level. The index number for this text (.26) is not close to the confidence interval (+.1 through -.1) which is tolerable for this study. The fifth grade text has an actual readability (6.4) that also may be too difficult for the intended grade level. The index number for this text (.22) is also not close to the tolerable confidence interval. The sixth grade text has an actual readability (8.4) that is well above grade level and probably too difficult for six graders. The index number for this text (.29) is the farthest away from the publisher's estimated grade level according to the calculated index numbers.

The hypothesis that there is no difference between the publisher's estimate of readability and the actual readability scores is not supported in the fourth, fifth or sixth grade texts of the Follett series (see Table 1).

Table 1. Estimated and Actual Readability, Index, and Percentage New Words Reinforced for Follett Social Studies Series

Text	Estimated	Actual	Index	Percentage Reinforced		
				Less	5	More
<u>World Regions</u>	4	5.4	.26	83	0	17
<u>Our United States</u>	5	6.4	.22	40	10	50
<u>Latin America and Canada</u>	6	8.4	.29	67	0	33
Means			.26	63	4	33

Hyo:2. The difference between the computed individual readability level of each sample and the mean computed readability level of the text is one year or less.

In this series the fourth grade text had an actual computed readability level of 5.4. All of the samples from this text had computed readability levels within one year of the mean computed readability level of the text. The fifth grade text had an actual readability of 6.4. Three of the samples from this text had computed readability levels within one year of the mean. One of the samples had a computed readability more than a year below the text's mean readability. The fifth sample had a computed readability that was almost three years above the actual mean readability of the text. The sixth grade text had a readability level of 8.4. Three of the samples from this text had computed readabilities within one year of this level. However, one of the samples was almost three years below this

level, and another was almost two years above the actual mean readability of the text. Only the fourth grade text from this series supports the hypothesis that the difference between the computed individual readability of each sample and the mean computed readability level of the text is one year or less (see Table 2).

Table 2. Estimated and Mean Computed Readability, Computed Individual Readability of Each Sample for Follett Series (1983)

Text	Estimated	Actual	Samples				
			1	2	3	4	5
<u>World Regions</u>	4	5.4	5.7	4.8	5.7	6.0	4.7
<u>Our United States</u>	5	6.4	5.9	5.0	6.7	5.5	9.1
<u>Latin America and Canada</u>	6	8.4	9.2	8.3	10.3	5.9	8.1

Hyo:3. There is no difference between the publisher's number of reinforcements of the new vocabulary words and the recommended five times or more than five times within the introductory lesson.

In this series only the fifth grade text had over half of the vocabulary words reinforced five or more than five times. The sixth grade text reinforced only 33% of the vocabulary words at least five times, while the fourth grade text only reinforced 17% of the vocabulary words the recommended number of times. All of the texts in this series did not reinforce new vocabulary words a sufficient number of

times to insure that the students can learn them (see Table 1).

Ginn

The observations of the Ginn series, according to the null hypotheses, are as follows:

Hyo:1. There is no difference between the publisher's estimate of readability and the actual computed readability scores based on a readability formula.

According to the Harris-Jacobson formula, two of the texts in the Ginn series have an actual readability the same as the publisher's estimated grade level. The fourth grade text has an actual readability (4.4) that may be quite appropriate for the intended grade level. The index number for this text (.1) is within the confidence interval tolerable for this study. The fifth grade text has an actual readability (5.9) that may be slightly too difficult for this grade level. The index number for this text (.15) is close to the tolerable confidence interval. The sixth grade text has an actual readability (6.1) that may be very appropriate for the intended grade level. The index number for this text (.02) is well within the tolerable confidence interval.

The hypothesis that there is no difference between the publisher's estimate of readability and the actual readability scores is supported for the fourth and sixth grade Ginn texts, but not for the fifth grade text (see Table 3).

Table 3. Estimated and Actual Readability, Index, and Percentage New Words Reinforced for Ginn Social Studies Series

Text	Estimated	Actual	Index	Percentage Reinforced		
				Less	5	More
<u>The People</u>	4	4.4	.1	50	10	40
<u>The Country</u>	5	5.9	.15	69	23	8
<u>The World</u>	6	6.1	.02	67	0	33
Means			.09	62	11	27

Hyo:2. The difference between the computed individual readability level of each sample and the mean computed readability level of the text is one year or less.

In this series the fourth grade text had an actual readability of 4.4. All of the samples but one had a computed readability within one year of the mean computed readability of this text. The fifth grade text had a computed readability of 5.9. Three of the five samples had computed readabilities that were within one year of this level. One of the samples had a computed readability more than one year below the actual readability level, while another had a computed readability almost three years above

the actual readability level of the text. The sixth grade text had a mean computed readability level of 6.1. Only one of the samples had a computed readability level that was within one year of the mean readability level of this text. Although the fourth grade text came close, none of the texts in this series supported the second hypothesis (see Table 4).

Table 4. Estimated and Mean Computed Readability, Computed Individual Readability of Each Sample for Ginn Series (1983)

Text	Estimated	Actual	Samples				
			1	2	3	4	5
<u>The People</u>	4	4.4	4.3	3.7	3.9	6.0	4.0
<u>The Country</u>	5	5.9	4.0	5.0	5.4	8.5	6.7
<u>The World</u>	6	6.1	3.9	5.9	4.6	8.7	7.3

Hyo:3. There is no difference between the publisher's number of reinforcements of the new vocabulary words and the recommended five times or more than five times within the introductory lesson.

All of the tests in this series fell short of the recommended five or more times reinforcement of new vocabulary words. The fifth grade text had only 8% of the vocabulary words reinforced as recommended. The sixth grade text had only 33% reinforcement. The fourth grade text had the highest percentage of reinforcement (40%), which is

still too low to insure that the students are actually learning the new vocabulary words (see Table 3).

Holt, Rinehart and Winston

The observations of the Holt series, according to the null hypotheses, are as follows:

Hyo:1. There is no difference between the publisher's estimate of readability and the actual computed readability scores based on a readability formula.

The actual computed readability of the three Holt texts evaluated in the study is higher than the publisher's estimated grade level, according to the Harris-Jacobson formula. The fourth grade text has an actual readability (5.4) that may be very difficult for this grade level. The index number for this text (.26) is the farthest away from the publisher's estimated grade level according to the calculated index numbers. The fifth grade text has an actual readability (6.3) that may also be very difficult for the intended grade level. The index number for this text (.21) is not near the tolerable confidence interval. The sixth grade text has an actual readability of 7.5 which will probably be extremely difficult for sixth graders. The index number for

this text (.20) is not within the tolerable confidence interval.

The hypothesis that there is no difference between the publisher's estimate of readability and the actual readability scores is not supported in the Holt series (see Table 5).

Table 5. Estimated and Actual Readability, Index, and Percentage New Words Reinforced for Holt Social Studies Series

Text	Estimated	Actual	Index	Percentage Reinforced		
				Less	5	More
<u>Our Regions</u>	4	5.4	.26	70	20	10
<u>Our History</u>	5	6.3	.21	100	0	0
<u>Our World</u>	6	7.5	.20	83	0	17
Means			.22	84	7	9

Hyo:2. The difference between the computed individual readability level of each sample and the mean computed readability level of the text is one year or less.

In this series the fourth grade text had a mean computed readability of 5.4. Only two of the five samples for this text had computed readabilities within one grade level of this mean. Two of the samples were more than one year below the mean, and one was almost three years above the mean readability level of the text. The fifth grade text had an actual readability of 6.3. Three of the samples had

computed readabilities within one year of this level. One of the samples had a computed readability level that was more than one year below the actual readability of the text, and one had a computed readability that was two years above the actual readability of the text. The sixth grade text had an actual readability of 7.5. Only two of the samples had computed readabilities within one year of this level. One had a computed readability that was actually two years below the actual readability of the text, and two had computed readabilities that were almost two years above this level. The hypothesis that the difference between the computed individual readability level of each sample and the mean computed readability level of the text is one year or less is not supported in this series (see Table 6).

Table 6. Estimated and Mean Computed Readability, Computed Individual Readability of Each Sample for Holt Series (1983)

Text	Estimated	Actual	Samples				
			1	2	3	4	5
<u>Our Regions</u>	4	5.4	3.5	5.0	3.8	6.4	8.1
<u>Our History</u>	5	6.3	5.7	5.2	6.0	6.2	8.3
<u>Our World</u>	6	7.5	6.9	9.1	6.5	5.4	9.4

Hyo:3. There is no difference between the publisher's number of reinforcements of the new vocabulary words and the recommended five times or more than five times within the introductory lesson.

None of the texts in the Holt series came close to the recommended five or more than five reinforcements of new vocabulary words. The fifth grade text had less than five reinforcements for 100% of the vocabulary words. The fourth and sixth grade texts had 10% and 17% reinforcement, respectively (see Table 5).

Laidlaw

The observations of the Laidlaw series, according to the null hypotheses, are as follows:

Hyo:1. There is no difference between the publisher's estimate of readability and the actual computed readability scores based on a readability formula.

Two of the Laidlaw texts have an actual readability that is the same as the publisher's estimated grade level, and one text has an actual readability that is below the estimated grade level, according to the Harris-Jacobson formula. The fourth grade text has an actual readability (4.1) that is appropriate for the intended grade level. The

index number for this text (.03) is within the tolerable confidence interval of this study. The fifth grade text has an actual readability (5.2) that is also appropriate for intended grade level. The index number for this text (.04) is also within the tolerable confidence interval. The sixth grade text has an actual readability (5.6) that is actually below grade level and therefore extremely appropriate for sixth grade social studies students. The index number for this text (-.07) is again within the tolerable confidence interval.

The hypothesis that there is no difference between the publisher's estimate of readability and the actual readability scores is supported in the Laidlaw series (see Table 7).

Table 7. Estimated and Actual Readability, Index, and Percentage New Words Reinforced for Laidlaw Social Studies Series

Text	Estimated	Actual	Index	Percentage Reinforced		
				Less	5	More
<u>Understanding Regions of the Earth</u>	4	4.1	.03	86	9	5
<u>Understanding Our Country</u>	5	5.2	.04	88	0	12
<u>Understanding the World</u>	6	5.6	-.07	100	0	0
Means			0	91	3	6

Hyo:2. The difference between the computed individual readability level of each sample and the mean computed readability level of the text is one year or less.

In this series the fourth grade text has an actual readability of 4.1, and the fifth grade text has an actual readability of 5.2. All of the samples for both of these texts had computed readabilities that were within one year of the mean computed readabilities of the texts. The sixth grade text had a readability of 5.6. All but one of the samples had computed readabilities that were within one year of this level. Although the sixth grade text was close, only the fourth and fifth grade texts in this series support hypothesis number two (see Table 8).

Table 8. Estimated and Mean Computed Readability, Computed Individual Readability of Each Sample for Laidlaw Series (1983)

Text	Estimated	Actual	Samples				
			1	2	3	4	5
<u>Understanding Regions of the Earth</u>	4	4.1	4.5	4.7	4.0	3.6	3.8
<u>Understanding Our Country</u>	5	5.2	5.9	4.8	4.3	4.7	6.2
<u>Understanding the World</u>	6	5.6	7.3	4.8	4.8	5.5	5.7

Hyo:3. There is no difference between the publisher's number of reinforcements of the new vocabulary words and the recommended five times or more than five times within the introductory lesson.

None of the texts in this series came anywhere near the recommended five or more than five reinforcements of new

vocabulary words. The sixth grade text had none of the vocabulary words reinforced the recommended number of times. The fourth grade text only reinforced 5% of the vocabulary words, and the fifth grade text reinforced only 12% of the vocabulary words (see Table 7).

Scott, Foresman

The observations of the Scott, Foresman series, according to the null hypotheses, are as follows:

Hyo:1. There is no difference between the publisher's estimate of readability and the actual computed readability scores based on a readability formula.

The actual computed readability of two of the Scott, Foresman texts evaluated in the study is the same as the publisher's estimated grade level, while one of the texts has an actual readability above grade level, according to the Harris-Jacobson formula. The fourth grade text has an actual readability (5.1) that may be very difficult for this grade level. The index number for this text (.22) is not close to the tolerable confidence interval for this study. The fifth grade text has an actual readability (5.3) that is on the intended grade level. The index numbers for this text (.06) and for the sixth grade text (.05) are both within the tolerable confidence intervals. The sixth grade

text has an actual readability of 6.3 which is on the intended grade level.

The hypothesis that there is no difference between the publisher's estimate of readability and the actual readability scores is supported in two of the Scott, Foresman texts, but not in the third text (see Table 9).

Table 9. Estimated and Actual Readability, Index, and Percentage New Words Reinforced for Scott, Foresman Social Studies Series

Text	Estimated	Actual	Index	Percentage Reinforced		
				Less	5	More
<u>Regions of Our Country and World</u>	4	5.1	.22	90	0	10
<u>America Past and Present</u>	5	5.3	.06	85	0	15
<u>Our World: Land and Cultures</u>	6	6.3	.05	100	0	0
Means			.11	92	0	8

Hyo:2. The difference between the computed individual readability level of each sample and the mean computed readability level of the text is one year or less.

In this series the fourth grade text has an actual readability of 5.1. All but one of the samples had computed readabilities that were within one year of the actual readability of the text. The fifth grade text had an actual

readability of 5.3. Only two of the samples were within one year of this level. One had a computed readability that was almost two years below the actual readability level of the text, and two had computed readabilities that were more than one year above the actual readability level. The sixth grade text had a readability of 6.3. Three of the samples had computed readability levels that were within one year of this level. Two of the samples had computed readabilities that were more than one year below the actual readability level. None of the texts in this series support the second hypothesis (see Table 10).

Table 10. Estimated and Mean Computed Readability, Computed Individual Readability of Each Sample for Scott, Foresman Series (1983)

Text	Estimated	Actual	Samples				
			1	2	3	4	5
<u>Regions of Our Country and World</u>	4	5.1	4.8	4.6	4.7	7.1	4.3
<u>America Past and Present</u>	5	5.3	6.4	5.5	4.6	3.5	6.7
<u>Our World: Lands and Cultures</u>	6	6.3	4.8	4.8	5.7	7.3	6.3

Hyo:3. There is no difference between the publisher's number of reinforcements of the new vocabulary words and the recommended five times or more than five times within the introductory lesson.

In this series the sixth grade text reinforced none of the vocabulary words the recommended five or more than five times. The fourth grade text reinforced only 10% of the vocabulary words the recommended number of times, and the fifth grade text reinforced only 15% of the vocabulary words the recommended number of times. All of these texts fall far below the recommended reinforcements (see Table 9).

3. Comparative Analysis of the Five Social Studies Series

The five social studies series were analyzed across text in order to evaluate the mean values for the series. Table 11 shows the mean index numbers and the mean percentage of reinforcements. The means were used to compare the five series to one another.

Table 11. Mean Index, Percentage New Words Reinforced

Publishers	Index	Percentage Reinforced		
		Less	5	More
Allyn and Bacon (Follett) (1983)	.26	63	4	33
Ginn (1983)	.09	62	11	27
Holt (1983)	.22	84	7	9
Laidlaw (1983)	0	91	3	6
Scott, Foresman (1983)	.11	92	0	8

The Laidlaw series mean index score (0) was the most appropriate of all the series evaluated and obviously within

the tolerable confidence interval for this study. The Ginn series was also within the tolerable confidence interval with a mean index score of .09. The Scott, Foresman series was just outside of the tolerable confidence interval with a mean score of .11. This indicates that the readability of the Scott, Foresman series is slightly above the publisher's estimated grade level. The mean index numbers of the Holt series (.22) and the Follett series (.26) indicate that both of these series have actual readability levels that are far above the grade levels intended by the publishers. The averaging of the index numbers causes us not to notice the inconsistencies of the scores that can be seen in Table 12.

All five series do an inadequate job of reinforcing new vocabulary words. The Ginn series reinforces only 38% of the new words five or more than five times. The Follett series is next with 37% of the new words reinforced as recommended. Holt reinforces only 16% of the new words. Laidlaw and Scott, Foresman reinforce only 9% and 8% of the new vocabulary words, respectively. It is obvious that the publishers have not given attention to the adequate reinforcement of new vocabulary words.

Table 12. Estimated and Actual Readability, Index, and Percentage New Words Reinforced for All Series

Text	Estimated	Actual	Index	Percentage Reinforced		
				Less	5	More
Follett (1983):						
<u>World Regions</u>	4	5.4	.26	83	0	17
<u>Our United States</u>	5	6.4	.22	40	10	50
<u>Latin America and Canada</u>	6	8.4	.29	67	0	33
Means			.26	63	4	33
Ginn (1983):						
<u>The People</u>	4	4.4	.1	50	10	40
<u>The Country</u>	5	5.9	.15	69	23	8
<u>The World</u>	6	6.1	.02	67	0	33
Means			.09	62	11	27
Holt (1983):						
<u>Our Regions</u>	4	5.4	.26	70	20	10
<u>Our History</u>	5	6.3	.21	100	0	0
<u>Our World</u>	6	7.5	.20	83	0	17
Means			.22	84	7	9
Laidlaw (1983):						
<u>Understanding Regions of the Earth</u>	4	4.1	.03	86	9	5
<u>Understanding Our Country</u>	5	5.2	.04	88	0	12
<u>Understanding the World</u>	6	5.6	-.07	100	0	0
Means			0	91	3	6
Scott, Foresman (1983):						
<u>Regions of Our Country and World</u>	4	5.1	.22	90	0	10
<u>America Past and Present</u>	5	5.3	.06	85	0	15
<u>Our World: Land and Cultures</u>	6	6.3	.05	100	0	0
Means			.11	92	0	8

4. Summary

In this chapter, the null hypotheses for each individual textbook were examined and the five social studies series were compared to each other. Conclusions from this study, discussion of these conclusions and suggestions for further research are found in Chapter V.

CHAPTER V

CONCLUSIONS

1. Discussion and Conclusions

The purpose of this chapter is to discuss the results of the comprehensive evaluation process in relation to the five social studies series.

Implications for Publishers

The methods used in this study enabled the researcher to evaluate each series in regard to the appropriateness of their use by fourth, fifth and sixth grade social studies students. The comparative analysis showed that the Laidlaw series had an actual readability that was the same as the publisher's estimated readability. Laidlaw's sixth grade text was actually written below grade level. This is important due to the wide variety of ability levels found in any one classroom. In order to insure that the majority of the students comprehend the material presented, it may be necessary for content area texts to actually be written below grade level. In this way, students will not be required to read material on a frustration level, and they

can then concentrate on the new information they are absorbing. The Laidlaw series also remained consistently on grade level throughout each text, with only one of the fifteen samples examined having a computed readability more than one year above the mean readability level of the text. Laidlaw, however, had only 8% of the new words reinforced five or more than five times. In fact, several of the vocabulary in the fourth, fifth and sixth grade texts were not reinforced even one time. It is clear that students cannot be expected to learn new words that are only presented to them once.

Even though the index number of the Ginn series was slightly higher than the Laidlaw series (.09 as compared to 0), Ginn appears to have the most readable texts as a whole. An index score of .09 is within the tolerable confidence interval of this study, and Ginn had 38% of the new words reinforced. This means, however, that over half of the new vocabulary words were not adequately reinforced. Ginn also had new vocabulary words that were not reinforced even one time. Ginn consistently remained on the grade level throughout their texts, with only three of the fifteen samples examined found to be more than one year above the mean readability level of the texts. It should be noted, however, that one of the samples from the fifth grade text

was almost three years above the actual mean readability level computed. Even a bright student would probably have difficulty reading and comprehending such a selection. It appears that even though Ginn has the most appropriate texts as a whole, there are nevertheless serious problems with their textbooks' readability that need to be remedied.

Scott, Foresman's fifth and sixth grade text had actual readabilities that were the same as their estimated grade levels, however, their fourth grade text had an actual readability of 5.1, which brought their index score slightly outside of the tolerable confidence interval of this study. Scott, Foresman reinforced only 8% of the new vocabulary words. This publisher also had new words that were not reinforced even one time. Three of the fifteen samples examined had computed readabilities more than one year above the mean readability level of the textbook, while three of the samples had computed readabilities more than one year below the mean readability level of the textbook. If textbooks are going to be inconsistent as to readability throughout the text, it is obviously better to have a selection with a readability level below the mean rather than above the mean to insure that students are not reading on a frustration level.

All of the texts in the Holt series had actual readabilities more than one year above the publishers'

estimated grade levels, as did the Follett series. The sixth grade text of the Follett series was actually more than two years over the estimated grade level. Even a bright sixth grader will most likely have difficulty reading a textbook written on an 8.4 grade level. The Holt series only adequately reinforced 16% of the new vocabulary words. Follett did a little better, adequately reinforcing 37% of the new vocabulary words. The fourth grade text of the Follett series was consistent with regard to readability throughout the text. The fifth grade text had one sample that had a computed readability that was almost three years above the mean readability of the text, and the sixth grade text had one sample that was nearly two years above the mean. The fourth grade text of Holt had one sample that was nearly three years above the actual mean readability of the text. It should be noted that the actual readability of that text was already more than one year above the publisher's estimated grade level. This means that that sample was approximately four years above the intended grade level of the text. It is probable that most fourth grade students would not be able to even begin to comprehend this selection.

In comparing the fourth, fifth and sixth grade texts, it appears that the grade levels are consistent with each

other in regard to actual readability. Three of the five fourth grade texts had actual readabilities more than one year above the fourth grade level. Two of the fifth grade texts had actual readabilities more than one year above the intended grade level, as did two of the sixth grade texts. Only the sixth grade Laidlaw text had an actual readability that was below the publisher's estimated grade level.

The publishers of the texts of the five series evaluated in this study need to do a more thorough evaluation of the readability of their texts. The reinforcement of new vocabulary words, especially, is being overlooked.

Implications for Teachers

It appears that all of the series have texts that may be difficult for even bright students to read and comprehend. These same texts may then be impossible for the "slow" student or for the learning disabled student to read or understand. The trend today is to mainstream learning disabled and even borderline mentally retarded students into regular classrooms for content area subjects. Many students may not even meet the requirements to be certified as handicapped, yet they do not have the ability to do grade level work. Social studies and other content area classes are a daily struggle for all of these students. The implications

of this study, then, are great for the intermediate social studies teacher or for any content area teacher. The textbooks examined in this study may be too difficult for even bright students to comprehend. The actual readabilities are often above the intended grade level, the selections throughout the texts are inconsistent with regard to readability levels, and the vocabulary words do not even come close to being adequately reinforced. If the textbook publishers are not comprehensively evaluating their texts for readability, then it is up to the teacher to do so. It may be necessary for the teacher to use a readability formula for the textbooks he or she selects. Even after this has been done, it will still be necessary for the teacher to closely examine each selection the students are to read to be sure it is consistent with the intended grade level of the text. It will be essential for the teacher to provide adequate reinforcement of new vocabulary words in class, since the texts appear to do an extremely inadequate job in this area. It in fact appears that teachers may be relying too heavily on texts that are too difficult for students to even read. It would perhaps be more appropriate for the teacher to provide more verbal instruction, class discussion and hands-on activities for the students. In this way, the teacher can insure that all students,

including students who have difficulty with grade level material, can have a chance to comprehend the information that they are presented.

2. Suggestions for Further Research

Observations of this study reveal additional possibilities for expanded research. The first option would be to use the instruments from this study to evaluate other grade levels of the five social studies series evaluated here. The second option would be to use the instruments from this study to evaluate other social studies series. A third option would be to evaluate social studies series according to other factors that supposedly evaluate readability, such as organization or sentence structure.

Further research studies would be beneficial for both students and teachers. Teachers need to be aware of current research concerning readability in order to maximize learning for students. Publishers need to be aware of expanded research in order to develop more appropriate social studies series. All educators need to be aware of expanded research in order to make appropriate decisions when selecting textbooks for their school systems or classrooms. In most classrooms today, the textbook is the major resource used in

teaching our children. If this major resource is too difficult, are our children really learning?

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APPENDICES

APPENDIX A

HARRIS-JACOBSON READABILITY FORMULA

Worksheet

Book title _____ Author _____

Publisher _____ Copyright date _____ Scored by _____

Sample Number	1	2	3	4	5
Pages of sample					
A. No. of words			...	...	...
B. No. of hard words			...	...	...
C. No. of sentences			...	...	...
<u>Step</u>					
1. $V1 = B \div A \times 100$					
2. $V2 = A \div C$		...	...	...	...
3. $V1 \times .245$		...	...	...	...
4. $V2 \times .160$		...	...	...	...
5. Step 3 + Step 4 + .642		...	...	...	...
= Predicted Raw Score					
6. Step 5 rounded		...	...	...	...
7. Readability Score			...	...	...

APPENDIX B

WORKSHEET FOR ANALYSIS OF INSTRUCTION MATERIALS
BEYOND READABILITY SCALES

Name of Book _____

Workbook _____

Publisher _____

Proposed Grade Level _____

Other Information _____

Pick a story at the beginning, middle and end of each level and analyze according to information requested below:

[illegible]

<u>List New Words</u>	<u>Number of times reinforced</u>	<u>Reinforcements in next 3 lessons</u>

Looking at teachers manual, list skills to be taught in this lesson:

<u>Skills</u>	<u>Are they taught</u>

<u>Skills to be taught or reinforced in workbook</u>	<u>Check appropriate observation</u>		
	<u>taught</u>	<u>reinforced</u>	<u>neither</u>

VITA

Lynda Wheeler was born on June 17, 1955, in Knoxville, Tennessee. She grew up in Roanoke, Virginia, where she attended Grandin Court Elementary School and Patrick Henry High School. Lynda attended the University of Tennessee, Knoxville, from which she graduated in 1978 with a Bachelor of Science degree. Her major was special education.

Lynda began teaching at a Comprehensive Development class in Monroe County. She taught in this classroom for three years. She then began teaching a Vocational Advancement Program for special education students. After several years, Lynda moved to Norman, Oklahoma where she taught small children at a state psychiatric facility. When she returned to Tennessee, she again taught CDC in Monroe County. Since 1986, she has been teaching at Ridgeview Psychiatric Hospital in Oak Ridge, Tennessee, where she is currently the Teaching Principal. She will receive a Master of Science degree in May 1989.