1969

A Comparative Study of Reading Achievement Growth and Attitude toward Reading When Instructed Through a Basal Reader Manual or Sanders' Questioning Technique

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A COMPARATIVE STUDY OF READING ACHIEVEMENT GROWTH AND ATTITUDE TOWARD READING WHEN INSTRUCTED THROUGH A BASAL READER MANUAL OR SANDERS' QUESTIONING TECHNIQUE

A Thesis

Presented to

the Graduate Faculty

Central Washington State College

In Partial Fulfillment

of the Requirements for the Degree

Master of Education

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by

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August, 1969

APPROVED FOR THE GRADUATE FACULTY

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TABLE OF CONTENTS

LIST OF TABLES

Chapter 1

INTRODUCTION

Educational research, experience, and lay opinion all agree that the teacher is a powerful force of influence on the student in the classroom (1:3-18). It is the teacher who manipulates the stimuli, chooses the material, and decides the teaching technique that will be used to elicit student response. It is the teacher who reinforces responses, thus motivating the student to form attitudes toward school, teachers, materials, techniques, and learning in general.

More specifically, it is the teacher who asks the questions or stimulates his pupils to ask them; and it is the teacher who accepts or rejects the answers or the discussion concerned with those questions. It follows that learning in the classroom must be influenced by the teacher's approach, method, attitude, and ability to question (13:50-52).

Assuming this to be true, it would be of interest and value to make a comparison study of two approaches to reading, one using Sanders' question categories (based on Bloom's Taxonomy [2:25-44]) which should stimulate thinking and discussion, the other, the basal reader question approach.

As a seventh grade teacher, it has appeared to the investigator that the way a question is worded and how classroom recitation and discussion is motivated through questions does make a difference in a student's achievement and attitude toward reading. As a teacher in a program where a basal reader approach is used as the framework of the reading curriculum, the investigator has become familiar with the plan for many basal readers. According to Clymer (7), such a plan provides for a systematic program of word recognition skill and a sequential program of comprehension development. The basal reading program also promises a careful selection of materials which are likely to be of interest to a broad range of students. No direct mention is made concerning helping children evaluate, infer, and analyze, or the level of questions suggested. This does not mean that no effort is made to increase these skills, or to raise the level of thinking through questions. But in general, these cognitive skills are not developed with the same care and depth as are the word recognition, recall, and identification skills.

As a teacher, anxious to know something about the "new approaches," the investigator has made an effort to understand the Sanders' Question Categories. These categories offer a method of analyzing the level of student verbal behavior according to the basic cognitive function involved (31).

After becoming familiar with traditional Guidebook approaches to questioning and the Sanders' questioning techniques, the problem

still remains: "Which of these procedures really produces the best results?" Can one, through control of variables and careful collection and analysis of data, statistically prove that one method of questioning is superior to another?"

THE PROBLEM

Purpose of the Study

The purpose of this study was to evaluate the reading achievement growth and to analyze the reading attitudes of seventh grade students when they are subjected to different methods of teacher questions. The two approaches used were: (1) the Basal Text Guidebook questioning approach, and (2) the Sanders' Questioning technique.

Need for the Study

Although every teacher of reading has his "pet" method, and publishing companies continue to label their program as "new," "different," and "better," most of us choose the method of questioning through "intuition," because "the guidebook says so," or because "a colleague has advised." Few of us have really shaped our approach to questioning on any systematic study of what type of question might produce the best results both in reading achievement and attitude toward reading. Therefore, there is need for research such as this study has proposed to undertake.

In thinking about the level of intellectual experience provided in reading classes, it is of interest to see just how many questions are posed that really challenge a student to think at his analytical level? How many questions are asked that call for more than rote memorization and recall? Why are questions important in children's learning?

Research is saying that questioning is important in the teaching of decision making, in involving students, in developing independent thinking, but what have teachers done to incorporate these new ideas into their classroom behavior?

There are the new analytical instruments of categorization of which Bloom's categories and Sanders' application are examples. If a teacher is aware of and uses these, there will be a change in classroom interaction.

Bloom (2) classifies memory type questions as the lowest level of intellectual performance when measured against the levels of thinking set forth in the Taxonomy of Educational Objectives. Yet, a great percentage of classroom questioning is on this level. According to Floyd, 42 percent is on the lowest level (11:7). How often does a teacher motivate students to analyze, infer, compare? In answering such questions, it is easy to be in agreement with Pate when he says:

> I am convinced that we are operating on a know and show basis to a great extent. We know and show while our students sit and git (22:2).

Pate has also reported in "Strategies in Teaching" as follows:

> A research study completed last year surveyed the kind of questions teachers asked during the teaching act. It was found that less than two questions out of ten called for anything other than a good memory and the ability to recall facts. And of these, 10-15% were not of a deep thought type, but called for the bare minimum of evaluation, inferring, relating, or criticizing. If we do not provide children with experiences of these types, then how can we expect them to develop skills of thought. We cannot assume that, just because students have factual information they will be able to apply this to each problem they may encounter. This is like saying if a person memorizes the Constitution and the Bill of Rights he will be a good citizen. It is a false assumption when we base our decisions and teaching on this premise (23:30).

Frase (13) reports that he has found that the time questions are asked makes a difference in student learning. Surely, if the time a question is asked affects learning, the content of the question will affect it even more.

In "Reading Guided By Questions Versus Careful Reading and Re-Reading Without Questions," Holmes (18) has shown that questions can significantly increase reading ability in both immediate and delayed recall.

These researchers in education and many others seem to see the question as an important factor in helping children toward greater academic achievement. It has come to the attention of this investigator that the way a question is worded and the content of the question can stimulate or deaden, challenge or threaten a student. Therefore, a study comparing types of questioning is of value for investigation.

Hypothesis

Students will show no difference in reading achievement growth or attitude changes toward reading when the teacher uses the traditional Basal Reader Manual questioning or the Sanders' Questioning Technique, with emphasis on categories five (Analysis) and seven (Evaluation).

DEFINITION OF TERMS

Attitude Test

This term refers to an instrument designed to measure an individual's feeling or thinking that shows one's opinion, mental state, emotion, or mood (34).

Basal Text

This term refers to the reading text book in which is found the material used to teach the reading skills thought important by the authors of a given reading series.

Basal Reader

This term is synonymous with basal text. The two names vary according to publisher and are used interchangeably throughout this paper.

Guidebook

This term refers to the teacher's text used in conjunction with the student's text. In the guidebook, suggestions will be found concerning

the teaching of reading in general, and specific instructions for using the book it was designed to accompany.

Mod

This term refers to a unit of time which makes up a school time schedule. In terms of this study, the time unit is sixteen minutes.

Modular Scheduling

This term refers to the division of time in a school teaching day. The scheduling used in this study was programmed by computer with Educational Coordinates, Palo Alto, California.

Reading Achievement Test

This is a type of reading test in which an "attempt is made to provide, within a class period of testing diagnostic measurement of a considerable number of aspects of reading" (31:188), and a measure of reading achievement in various reading areas.

Sanders' Questioning Technique

This is a practical plan designed to "insure a varied intellectual atmosphere in a classroom" (25:2).

Teacher's Manual

A teacher's manual serves the same purpose as a guidebook. Both refer to the teacher's edition of a given reading text. In this study the two terms are used synonymously.

LIMITATIONS OF THE STUDY

This study was limited to an analysis of questions suggested by the Scott-Foresman Teacher's Guidebook for Wide, Wide World, Unit 5 (24).

Application of the Sanders' Questioning Technique was limited to the same material.

The study was limited to two seventh grade groups of students in a modular scheduled program. These groups were not matched, but were a random sampling, selected by computer with Educational Coordinates, Palo Alto, California, representative of the total junior high school population of Morgan Junior High School in Ellensburg, Washington.

The control group was made up of twenty-seven students and the experimental group of twenty-nine students. The study was further limited to the work of one teacher who worked with both the experimental and the control groups.

The study was limited to a nine-week period of time, made up of 128 minutes of class time each week.

PROCEDURE

Selection of Subjects

The seventh grade students enrolled in two reading classes at Morgan Junior High School in Ellensburg, Washington, served as subjects

in this study. The subjects were randomly selected from the entire Morgan Junior High seventh grade population.

The investigator used two reading classes of comparable size with equally scheduled time. Specifically, the control group of twenty-seven students met on Tuesday and Thursday, first, second, and third mods (each mod was sixteen minutes in length). The experimental group of twenty-nine students met on Wednesday and Friday, first, second, and third mods. These groups were divided into groups of fourteen or thirteen each that met for small group instruction once each week for two mods. Thus the control and the experimental groups each received equal teacher time.

Program of Instruction

Material used for instruction was Unit 5 of the Scott, Foresman Basal Reader, Wide, Wide World. The control group's instruction time was spent in following the suggestions for questions and discussion found in the Teacher's Guidebook for Wide, Wide World. The experimental group's instruction time followed the Sanders' Questioning Technique with specific questions on analysis and evaluation, categories 5 and 7.

Samples of questions used with both groups for each story are included in Chapter 3 of this study.

Instruments Used to Evaluate

At the beginning of the study, the Iowa Reading Test Form AM, parts 1 through 8, was administered to all students involved in the study. In addition, an attitudinal paper and pencil test, designed to measure each student's attitude toward reading, was administered. This test was constructed by the investigator. (See Appendices A and B.)

At the end of a nine-week period, Form BM, parts 1 through 8, of the Iowa Reading Test was administered to each subject and the attitudinal change was recorded.

Treatment of Data

Statistical analysis was applied to the data collected from the Iowa Reading Test Form A administered at the beginning of the research period and Form B administered nine weeks later. Analysis concerning attitudes toward reading was applied to the data collected on the attitudinal tests, also given at the beginning of the experimental period.

ORGANIZATION OF THE REMAINDER OF THE THESIS

In Chapter 2 an attempt has been made to present related research that will give insight and understanding regarding the importance of questioning as it pertains to teaching. It further discusses the questioning approach used in a Basal Reader Guidebook, and the Sanders' Questioning Technique.

Chapter 3 presents the statistical data collected in the study. This includes the results and analysis of pre and post reading achievement and attitudinal tests administered to the experimental and control groups.

Chapter 4 presents the Summary, Conclusions, and Recommendations resulting from the study.

Chapter 2

RELATED RESEARCH

Research is concentrating on finding more profitable approaches to teaching children. Consideration of children's level of development, attention to how children learn, and individual approaches to instruction are some of the areas of investigation. Creativity and inquiry have focused on how children respond to teachers and how teachers stimulate children to think. One of the learning theories that has influenced educators' ideas on motivation is that of Skinner's Reinforcement.

> About ten years ago, Skinner was struck with the idea of trying to teach people like pigeons--that is, by arranging matters so that a student, like a pigeon being taught to execute a figure 8, would be reinforced instantly each time he took a step in the right direction. In 1954, he published an article setting forth his views and arguing that the necessary reinforcement should be provided by a machine.
>
> Unlike the pigeon trainers, programmers do not simply wait until the student happens to do what they want. The reinforcement does not consist in giving the students corn but in telling him that he is right (9:351).

According to Bugelski, Skinner never intended to replace teachers by automation, but only intended to replace some of their functions, freeing teachers for other kinds of tasks. Bugelski has further inferred that Skinner considered the functions of a teacher to be:

1. The teacher must provide and control the necessary motivation for learners.

2. The teacher must present a carefully arranged sequence of stimuli that cover the learning task from start to finish . . . .

3. The teacher must control the presentation of reinforcements that will presumably make the behavior more likely on a future occasion (5:208-209).

Consideration of functions such as these as part of a teacher's job have influenced the materials that have poured from the presses of publishers supplying school texts.

As teachers we spend many hours studying the children in our classrooms so that we may teach more effectively. We evaluate materials and strive to apply knowledge of learning theory and innovations to our particular situation and time.

Gordon has said:

> In every science, there is a spirit of the times that dictates, to some degree, the way facts are seen. This holds true for the sciences that deal with the development of children as much as for physics and chemistry. During the 1960's this "Zeitgeist" is undergoing profound change (14:1).

As a result of using some of the newer ideas on questioning and applying the "spirit of the times," the investigator hoped new insights would be gained from this study.

BASAL TEXTS

For many decades the structure of the reading program was dictated by the basal reader.

> The story of American reading instruction is a fascinating one to pursue. It is a story of old readers which have moved in long procession from the school room to the garret, from noisy popularity to silent oblivion (28:3).

In these words Smith hinted of the important place of the basal text in the history of the teaching of reading in America. She describes the evolution of American reading instruction from the Hornbook and McGuffey's graded series of readers to the modern basal reading text and its featuring of carefully developed sequentially planned skill lessons, and thoughtfully chosen stories well illustrated demonstrating many years of careful research and development (29).

Through the years, approaches to the teaching of reading have changed, and publishing companies have varied the principles underlying the production of their basal texts in accord with research. Still the basal reader remains the major structure of most public school reading programs. This fact has prompted statements such as the following: "The approach most widely used throughout this country at the present time is the basal reader approach" (28:99).

> Basic readers provide the core material for reading instruction . . . . These may be counted on as the main source of context for systematic reading instruction, and for developing specific skills, in study-type activities or in recreational reading (33:226).

Bond has described the Basel Reader Reading Program in much the same manner:

> The Basal Reader program is the one that is usually considered to be the reading program. It provides the framework through which the reading abilities, skills, and techniques are introduced and around which they are built. In the basal program the child is shown how to work with words so that he becomes quick and accurate in recognizing them.
>
> The Basal Program does much more. It gives experiences in such comprehension abilities as reading for factual information, reading to organize, reading to evaluate, reflective reading, and reading for appreciation (4:94).

It is evident from these and similar statements that the role of the basal reader is both popular and important in the minds of those who make reading instruction their business. As a result of this kind of popularity and wide use, publishing companies have each provided their own version of basal reading texts. Each has taken its own individual approach, often stemming from very similar philosophies, and developed somewhat different basic principles on which their Basal Reader programs have been built.

A set of principles developed by the Scott, Foresman Company has the following aims and design.

1. The program was designed on the premise that word perception is the all important base of the reading process.

2. The program was designed to give teachers help in leading children always to search for meaning as they read.

3. The program was designed to produce readers who enjoy and appreciate good literature.

4. The program was designed to help children develop values and qualities of character that will enrich their lives and in turn, society.

5. The program was designed to get children off to a good start in reading.

6. The program was designed to give repetition in its teaching materials.

7. The program was designed around children's interests and with continuous, sequential development.

8. The program was designed recognizing the fact that there were many different skills and abilities involved in reading.

9. The program was designed with the belief that reading material, other than the basic reading text was essential in a good reading program.

10. The program was designed to include material for evaluating children's reading abilities (26).

While publishers acclaim their individual approaches, publish their philosophical principles, and subject their basal series to changes and rewritings, the basal reading programs continue to be used by thousands of teachers across the United States.

What do educators mean by the term "basal reader" and of what does a basal reader guidebook consist? Tinker has said:

> Good basal readers provide a sequential program of instruction in which there is a systematically selected vocabulary. They develop new techniques in appropriate patterns in order to avoid overemphasis on any single one . . ., the pattern of reading instruction is incorporated skillfully in a sequential manner. This pattern may be relied upon to provide the essential foundations for all reading skills (26:226).

Gray says:

> A basal reading series seeks to help the child to develop necessary reading habits and skills. Used for the purpose of systematic teaching are the readers, containing stories; the teacher's guidebook or manual, offering lesson plans; and the children's workbook presenting exercises and drills (15:177).

Johnson has described the basal reader as a program which meets these criteria:

1. The reading material is pre-selected and embodied in a basic series.

2. The instructional procedure is teacher-to-group as presented in the teacher's manual.

3. Grouping is consistent over a period of time, although individuals within a group may move to another group.

4. Skills are developed in a sequence suggested by the teacher's manual (19:902).

Typical of what publishers have to say concerning their materials are the following statements:

> In spite of recent inventions and innovations, reading continues to offer boys and girls rewards they can obtain in no other way. We believe that the Reading Caravan series helps greatly in the attainment of these rewards . . . .
>
> The books and teacher's guides of the Reading Caravan series are designed for flexibility in teaching . . . . The suggestions in the teacher's guide describe possible ways in which good teaching practices may be employed to meet the needs of individuals or groups in a particular class.
>
> The suggestions are given in a manner that allows the teacher flexibility in the method of handling the class, and are presented in sufficient detail to enable the teacher to follow the instructions (35:1, 8).

In an overall description of their material, the Scott, Foresman Publishing Company says this of their basal reader guidebooks:

> The Guidebook provides suggestions for establishing background for the reading of stories and presenting vocabulary, for guiding the interpretation of each story, and for efficient word perception and for understanding printed language (27:1).

A discussion of basal readers would not be complete without reference to some of the criticism that has been leveled at these texts. Although the great bulk of criticism has been directed toward the texts written for beginning readers, there are those who question and criticize the content of basal readers written for the junior high levels.

Sheldon sees the following disadvantages in basal readers:

1. Basal readers are not universally applicable to all children of the grade level for which they are designed.

2. The basal reader of the 1940's and 1950's seemed to have been designed for the children of essentially middle class suburban society.

3. In the past the concept and vocabulary load of the first and second grades was far too light for able children.

4. Basal readers are virtually all uni-dialect, a standard American English dialect commonly called NBC or CBS English.

5. Basal reader stories have more often appealed to girls than boys because of the content.

6. Basal reader stories usually concern noncontroversial topics (27:297-298).

This study is not concerned with the content of the basal reader, but rather with the techniques through which this content is

taught. These techniques are presented to the teacher through the teacher's guidebook or manual prepared to accompany each text.

As has been noted, the teacher finds in his manual lesson plans, questions, and exercises designed by the authors to teach reading skills through the stories in the texts.

Smith has made the following statement concerning the misuse of basal readers: " . . . using the teacher's guide as a detailed prescription to be followed exactly in all of its aspects" (29:100).

Statements such as this indicate that if the materials found in the basal reader are to be used to full advantage, the teacher needs to know how to go beyond the suggestions found in the guidebook. To this investigator, it has seemed that much could be done to increase interest and understanding of reading through the careful selection and use of questions.

Strang gives us some fundamental principles underlying reading instruction that can be considered by the teacher in using questions in instruction far better than by an author writing a guidebook. Strang's principles are as follows:

1. Start where the child is, help him to progress as far and as fast as he is able so that he will eventually achieve his potential reading ability.

2. Success has a tonic effect; nothing succeeds like observed success.

3. Respect for the pupil increases his self-esteem. If the teacher listens intently to what the student is saying and shows that he understands how he is thinking and feeling, he thus conveys to the student his respect and genuine concern for him as a person.

4. Learning takes place in a relationship. Rapport is a subtle thing. It has many ingredients. The teacher's confidence in his ability to help the student improve in reading inspires confidence in the student.

Only the person who is on the spot at the time of teaching can adequately take these principles into consideration in applying teaching techniques. Therefore, it appears reasonable to step beyond the basal reader teacher's manual to look at some ideas on questioning technique.

QUESTIONING

Socrates, the master of thought-provoking questions, was the object of his admiring students because of his ability to teach through his subtle and provocative questions.

> The Socratic method is the ideal mode of education, since by it the student learns what he personally asserts to be true. The teacher-pupil relationship becomes intimate and personal. The teacher persuades the student to think by questioning him about his beliefs, by setting before him other beliefs, and thus forcing him to probe the workings of his own mind (20:124).

Christ, the greatest teacher of all, taught much of the morality of the Christian way of life through parables followed by simple but straight forward questions that fit the hour, the circumstance, and the individual (Mathew 6:26-31; Luke 18:18-20).

In the writings of Dewey there is continual reference to the methods and ways children can be helped to develop habits of inductive thinking through the open ended questioning of the teacher. He has encouraged us "to attend to every fact that is relevant, to define the problem or need, and to follow up every suggestion that promises a clue" (8:146).

These words of one of our respected educator of a past generation appear to imply the importance of the question in guiding the child toward greater understanding.

As we look closely at the literature of mid-century America, we cannot avoid realizing that many of the educators shaping curriculum, educational psychology, and teaching method still see the use of the question as a powerful tool in the hand of a teacher.

Guilford, who has researched and written on the structure of intellect has called a portion of his structure "operations." In questioning we are concerned with those parts of "operations" which Guilford has labeled "convergent" and "divergent." "In convergent thinking the information leads to one right answer or to a recognized best or conventional answer" (16:469-479). "The concern for the single right answer, prevalent in class recitations and teacher-made tests, is demonstrative of convergent thinking" (14:33).

This is a much used and essential style of questioning, but not an exclusive style. Of equal merit and often neglected both in school

questioning and in testing, is divergent thinking. Guilford describes divergent thinking operations as follows:

> In divergent thinking operations we think in different directions, sometimes searching, sometimes thinking, sometimes seeking variety. The unique feature of divergent production is that a variety of responses is produced. The product is not completely determined by the given information (16:470).

Guszak (17:227-234), in a study considering the kinds of questions teachers ask, found that 70 percent of the questions asked fall into the literal comprehension area. Trivial, minute information was asked for, calling for memorized responses. The study further showed that over 90 percent of the literal comprehension questions asked were met with congruent responses from first student tries. This parroting back calls for no value judgment or weighing of evidence. To add this dimension we need to ask "why."

Floyd has stated that:

> Forty-two percent of the 6,259 questions asked by the teachers during the thirty hour long visitations concerned themselves with the memory of specific facts. Less than one-half of one percent of the questions were of the type especially designed to call for additional pupil questions. Eighty-five percent of the questions were assigned to five categories: "Memory, specific facts"--42%; "information, specific facts"--23%; "direction giving, request, or command"--9%; "criticism or evaluation"--8%; "comparison"--3%. Fifty-three and one-half percent of total questions were classified in the broad category of memory questions (12:47-48).

Some decisions Floyd made were:

1. The questions asked by teachers and pupils were generally low quality.

2. The fact that so many of the questions asked by the teachers required the use of memory on answering suggests that memory is of major significance, in fact, be a goal of the instruction.

3. One is forced to the conclusion that because these teachers were not outstandingly skillful as oral questioners certain definite worthwhile educational purposes uniquely served by the oral question, efficiently employed, were not being realized.

   Finally there is evidence to indicate that these teachers may not have been able to effectively and adroitly use the various types of questions (12:49).

It is statements such as these that lead the teacher to re-evaluate his question formulation and has led him to see the question as a much more versatile tool than it is sometimes considered. It is as a result of such re-evaluation that this study is concerned with teaching basal text material to a control group by following the suggestions found in the Teacher's Guidebook accompanying Wide, Wide World of the Scott, Foresman Basal Reading Series, and teaching the same material to an experimental group using the Sanders' Questioning Technique.

According to Sanders:

> Questions and problems have long been used to motivate interest, to instruct, and to evaluate. However, even today the topic lends itself to further investigation. The basic hypothesis on which this book is built are these: First, teachers can lead students into all kinds of thinking through careful use of questions, problems, and projects. Second, some teachers intuitively ask questions of high quality, but far too many overemphasize those that require students only to remember, and practically no teachers make full use of all worthwhile kinds of questions. The objective of this book is to describe a practical plan to insure a varied intellectual atmosphere in a classroom. The approach is through a systematic consideration of questions that require students to use ideas, rather than simply to remember them (25:1).

In developing his study on questioning, Sanders used ideas set forth in Bloom's Taxonomy of Educational Objectives. This taxonomy gave us an ingenious, but practical plan for classifying educational objectives, setting forth systematic categories from which to work. Within the cognitive domain this taxonomy defined and named seven areas of thinking. To follow Sanders' reasoning concerning questioning, some definitions of Bloom's categories are necessary. Sanders has defined these categories as follows:

1. Memory: The student recalls or recognizes information.

2. Translation: The student changes information into a different symbolic form or language.

3. Interpretation: The student discovers relationships among facts, generalizations, definitions, values, and skills.

4. Application: The student solves a life-like problem that requires the identification of the issue and the selection and use of appropriate generalizations and skills.

5. Analysis: The student solves a problem in the light of conscious knowledge of the parts and forms of thinking.

6. Synthesis: The student solves a problem that requires original, creative thinking.

7. Evaluation: The student makes a judgment of good or bad, right or wrong, according to standards he designates (25:3).

One of the ways in which these categories were defined by Bloom was by using examples of questions that required specified kinds of thinking. From this point, Sanders carried the taxonomy into a new direction and developed a technique of questioning with Bloom's categories as the base of his thinking on the formulation of questions.

It is from the ideas set forth by Sanders in his Classroom Questioning, and a knowledge of Bloom's categories that this investigator tried to formulate questions that would stimulate students to think in all areas of the cognitive domain listed in the categories, but with special emphasis on categories five and seven, analysis and evaluation. Examples of these questions can be found in Appendix A of this study.

Chapter 3

PROCEDURES

This study showed a comparison of two different questioning techniques. The questions found in the Teacher's Manual accompanying the basal reader, Wide, Wide World, published by Scott, Foresman and Company, were used with the control group. Sanders' Questioning Technique was used with the experimental group, using the Wide, Wide World material as the source from which questions were formulated.

Sanders used ideas set forth in Bloom's Taxonomy of Educational Objectives in creating his questioning technique. This plan presents, within the cognitive domain, a taxonomy of seven areas of thinking. The investigator was particularly interested in categories 5 (analysis) and 7 (evaluation) as categories in which he formulated questions.

The subjects used in this study were seventh grade students, randomly selected by the California Coordinate's computer, from the entire seventh grade population of Morgan Junior High School in Ellensburg, Washington.

An Iowa Reading Test (see Appendix A), which measured achievement in reading, was given. The Iowa Reading Test, Form AM, was used

as a pre-test for both the control and the experimental groups. The Iowa Reading Test, Form BM, was given at the end of the nine weeks experimental study as a post-test.

An attitude test (see Appendix B), which recorded changes in attitude toward reading, was used in the study. This test was administered as a pre-test and nine weeks later, at the end of the experimental period, it was repeated as a post-test. This was a paper and pencil test designed by the investigator. It listed positive and negative attitudes on a continuum scale. The student was asked to rank his attitude on this continuum in relationship to various types of reading by using numbers one through five. Number one was placed beside the word indicating his strongest response and number five beside the word indicating his weakest response.

The Iowa Reading Test, Form AM, was administered as a pre-test. The attitude test was also administered as a pre-test. The teacher used Unit 5, "Our World Neighbors," from the basal series, Wide, Wide World by Scott, Foresman and Company for reading instruction for both the experimental and the control groups. The questions used for motivation, discussion, and testing the control group were taken from the Teacher's Manual.

The questions used for motivation, discussion, and testing the experimental group were formulated on the Sanders' categories numbers five (analysis), and seven (evaluation).

At the end of the nine weeks experimental study, the Iowa Reading Test, Form BM, was administered as a post-test with both groups. The attitude test was repeated as a post-test with both groups.

The following are examples of procedure and questions that were used with both the experimental and the control groups during the nine weeks experimental period.

The materials used for both the control and the experimental groups were taken from Unit 5 from the seventh grade reading text, Wide, Wide World, Scott, Foresman Publishing Company. The unit was titled "World Neighbors."

Introduction to Unit 5

According to the Teacher's Manual,

> The introduction should be on the theme of human relationships to broaden the perspective of the young reader and carry him from his own environment out into the "wide, wide world."
>
> Among the interpretative reading skills to be stressed during the study of this unit are:
>
> Considering the significance of place
> Perceiving the relationships of characters
> Noting some relationships
> Determining the validity of an inference
> Considering viewpoint
> Discriminating between fact and fiction
> Appreciating sensory imagery (Teacher's Manual, p. 145)

At the beginning of the unit in the text (pp. 288a, 288b) was the picture story that was used as motivation and discussion for both groups.

Control group. The investigator took the suggested information and questions directly from the manual for the control group. As an example, the investigator began with the following information, given in the Teacher's Manual.

> With p. 288a note the old church in the background and tower in partial ruins. Note how men carry their burdens. The Hindu woman is wearing a sari, and the water jar on her head is handmade.
>
> How do your mothers obtain water?
>
> Note bracelets the Hindu woman is wearing. The Hindu artisans produce much very lovely jewelry of this kind, carving it from metal.
>
> Have any of you seen this kind of jewelry?
>
> What country is depicted in the photo?

Experimental group. The same picture was used with the experimental group. Some of the questions used were:

> What country is depicted in this photo?
> What evidence can you give to back your answer?
> Using the literal detail in the picture, compare detail that is similar in the United States, in Washington, and in Ellensburg.
> How can you support your statements?
> Would handmade jewelry be more or less expensive than similar jewelry made in the United States? Why?

Story I. "The Last Farthing" (Wide, Wide World, pp. 290-294)

Control group. For the control group, the vocabulary words were put on the overhead projector. Time was given in class for students

to look up definitions in the text glossary or dictionary and to write the definition in a vocabulary notebook. Questions from the Teacher's Manual were as follows:

> What is a farthing?
> What attention do you pay to dates on coins?
> Which of these adjectives would you use to describe Howard--crass or sensitive?
> Might the author have modeled Howard on his memories of himself as a youth? (Teacher's Manual, p. 147)

A true-false test taken from the Teacher's Manual was given after the story was read silently (p. 149). The test was corrected in class so each student had the score immediately after completing the test.

Experimental group. Vocabulary words were put on the overhead projector as for the control group. Students were asked if anyone knew any of the words. The student that knew the definition of the word gave a sentence orally using the word under discussion. From the content of the oral sentence, students discussed and questioned the meaning. They wrote their own definition in a vocabulary notebook.

Some of the questions asked the experimental group were the following:

> A man has come from England and has a farthing.
> What could he buy?
> If you have seen a coin collection, why is the date important?
> How does money affect our way of life?

After the student had completed the story, he was to answer the question, "Which country, England or United States, would you rather live in and why?"

Story II. "The Big Wave" (Wide, Wide World, pp. 320-328)

The Teacher's Manual suggested "building up interest by the meaning of title and the headnote." The teacher is directed to "explain that the big wave mentioned here is a tidal wave, and since the volume of water involved is great, considerable damage is done."

> If pupils seem interested you might tell them that there are various possible causes for a tidal wave, among them an earthquake or the eruption of a volcano near or under the water. Japan has nearly two hundred volcanoes, about fifty of which have been active in recorded time. Seismographic instruments often register as many as 1500 earthquakes "shocks" in a single year. Tidal waves have occurred in various parts of the world, some of them having been nearly a hundred feet in height. (Teacher's Manual, p. 162)

The reading skill, appreciating sensory imagery, was enhanced by one student reading aloud, Mrs. Buck's powerful description, having pupils listen with closed eyes, preparatory to expressing opinions as to what things in the scene impressed them most and why. (Teacher's Manual, p. 162)

After they read the story silently, the control group took a check test from the Teacher's Manual. This was a ten question multiple choice test. (Teacher's Manual p. 161) The test was scored in class.

Experimental group. The investigator began the discussion with the experimental group by using the two sentences from the test. "'Death is a great gateway,' Kino's father said. His face was not at all sad." (Wide, Wide World text, p. 325)

The questions asked were:

What is death?
How would you interpret the title, The Big Wave?
Which natural disaster would you rank the most devastating and why?

The story was read silently by the experimental group. At the conclusion of the reading each student was asked to construct a written question. These were put into a box and each student drew a question and wrote an answer. These were scored and returned to the students.

Other Activities

The questions that appear here are only a few samples of questions asked on two stories. There were six stories in the unit taught. The unit was covered in nine weeks, during reading class time. Each group was given a list of books, fiction and nonfiction, to use as a guide for books to read from the library. Every student in each group was asked to read four library books. Each student was given class time to use informational type books in conjunction with the unit.

Chapter 4

RESULTS

ATTITUDE TEST

Results

Every student in both groups ranked their feelings about reading for each of the eight categories (see Appendix C) by using five numbers. One was plotted as the strongest feeling toward the word designated; five was the weakest feeling toward the word designated.

In the control group pre-test (see Table 1), students recorded a total of 394 responses that indicated feelings in the hate to disorganized (negative attitudes) scale. In the post-test, the same students recorded a total of 433 responses that indicated feelings in the hate to disorganized scale.

In the control group pre-test, students recorded a total of 843 responses that indicated feelings in the like to enjoyable (positive attitudes) scale. In the post-test the same students recorded a total of 700 responses that indicated feelings in the like to enjoyable scale.

In the experimental group pre-test (see Table 2), students recorded a total of 338 responses that indicated feelings in the hate to

Table 1

Totals for All Eight Forms in Reading for Control Group

	Pre-Test	Post-Test	Response Differences
Totals for columns dislike-disorganized:			
Basal Reader	48	35	-13
Science	55	74	+19
Social Studies	54	55	+ 1
Math	64	84	+20
English	48	66	+18
Fiction	16	7	- 9
Non Fiction	42	34	- 8
Information Type	67	78	+11
	394	433	+49
Totals for columns like-enjoyable:			
Basal Reader	110	105	- 5
Science	103	68	-35
Social Studies	104	85	-19
Math	94	66	-28
English	110	71	-39
Fiction	142	137	- 5
Non Fiction	109	107	- 2
Information Type	71	61	-10
	843	700	-143

Table 2

Totals for All Eight Forms of Reading for Experimental Group

	Pre-Test	Post-Test	Response Differences
Totals for column: dislike-disorganized			
Basal Reader	39	39	0
Science	73	66	- 7
Social Studies	39	51	+12
Math	66	69	+ 3
English	38	63	+25
Fiction	5	7	+ 2
Non Fiction	19	44	+25
Informational Type	59	81	+22
	338	420	+82
Totals for column: like-enjoyable			
Basal Reader	99	95	- 4
Science	50	69	+19
Social Studies	100	94	- 6
Math	72	66	- 6
English	100	71	-29
Fiction	140	133	- 7
Non Fiction	119	97	-22
Informational Type	80	56	-24
	760	681	-79

disorganized (negative attitudes) scale. In the post-test, the same students recorded a total of 420 responses that indicated feelings in the hate to disorganized scale.

In the experimental group pre-test, students recorded a total of 760 responses that indicated feelings in the like to enjoyable (positive attitudes) scale. In the post-test, the same students recorded a total of 681 responses that indicated feelings in the like to enjoyable scale.

The investigator was specifically interested in the specific form of reading materials which were presented in class during the study. These specific forms were: basal reader, fiction, non-fiction, and informational type of reading material. On this part of the attitude test, the control group pre-test (see Table 3), students recorded a total of 173 responses that indicated feelings in the hate to disorganized (negative attitudes) scale. In the post-test, the same students recorded a total of 154 responses that indicated feelings in the hate to disorganized scale.

In the control group pre-test, students recorded a total of 432 responses that indicated feelings in the like to enjoyable (positive attitudes) scale. In the post-test, the same students recorded a total of 410 responses that indicated feelings in the like to enjoyable scale.

In the experimental group pre-test (see Table 4), students recorded a total of 122 responses that indicated feelings in the hate to disorganized (negative attitudes) scale. In the post-test, the same

Table 3

Totals of Specific Forms in Reading for Control Group

	Pre-Test	Post-Test	Response Differences
Totals for specific forms in reading: hate-disorganized			
Basal	48	35	+13
Fiction	16	7	- 9
Non Fiction	42	34	- 8
Informational Type	67	78	+11
	173	154	-19
Totals for specific forms in reading: like-enjoyable			
Basal	110	105	- 5
Fiction	142	137	- 5
Non Fiction	109	107	- 2
Informational Type	71	61	-10
	432	410	-22

Table 4

Totals of Specific Forms in Reading for Experimental Group

	Pre-Test	Post-Test	Response Differences
Totals for specific forms in reading: hate-disorganized			
Basal	39	39	0
Fiction	5	7	+ 2
Non Fiction	19	44	+25
Informational Type	59	81	+22
	122	171	+49
Totals for specific forms in reading: like-enjoyable			
Basal	99	95	- 4
Fiction	140	133	- 7
Non Fiction	119	97	-22
Informational Type	80	56	-24
	438	381	-57

students recorded a total of 171 responses that indicated feelings in the hate to disorganized scale.

In the experimental group pre-test, students recorded a total of 438 responses that indicated feelings in the like to enjoyable (positive attitudes) scale. In the post-test the same students recorded a total of 381 responses that indicated feelings in like to enjoyable scale.

Summary

The control group for all eight forms of reading from pre- to post-test showed (1) a 49 response shift toward hate to disorganized on the negative scale and (2) a 143 response shift from like to enjoyable on the positive scale.

The experimental group for all eight forms of reading from pre- to post-test showed (1) an 82 response shift toward hate to disorganized on the negative scale and (2) a 79 response shift from like to enjoyable on the positive scale.

The control group for the four forms in reading--basal texts, fiction, non-fiction, and informational type reading--from pre- to post-test showed (1) a 19 response shift from hate to disorganized on the negative scale and (2) a 22 response shift from like to enjoyable on the positive scale.

The experimental group for the four forms in reading--basal text, fiction, non-fiction, and informational type--from pre- to post-test

showed (1) a 49 response shift toward hate to disorganized on the negative scale and (2) a 57 response shift from like to enjoyable on the positive scale.

RESULTS OF IOWA READING TEST

The Iowa Silent Reading Test is a standardized paper and pencil test, which is divided into eight subtests. Every student in both groups took Form AM as a pre-test and Form BM as a post-test.

Appendix C shows the pre- and post-test standard scores for each student on eight subtests of the Iowa Silent Reading Test. The position of each student's score falls in the same rank order on both the pre- and post-tests. Thus, E1, E2, and C1, C2, identify each student, making scores convenient for comparison of each individual student's performance.

Table 5 shows the comparison of the pre- and post-test results of the experimental and control groups for all subtests. The study further shows the subtest mean scores for both groups.

The two subtests that were statistically significant were "rate" and "indexing" for the experimental group. The obtained t ratio value for subtest "rate" was 2.84, which was significant at the .01 level of confidence. The obtained t ratio value for subtest "indexing" was 2.46, which was significant at the .05 level of confidence.

The experimental group made the greater gain in subtests Rate, Paragraph Comprehension, Sentence Meaning, and Alphabetizing.

Table 5

Comparison of Pre- and Post-Test Mean Scores of Subtests, Iowa Silent Reading Tests, for Control and Experimental Groups

Subtest	Experimental N	Experimental Mean	Control N	Control Mean	t
Rate:					
Pre-Test	29	162.93	27	156.78	1.47
Post-Test	29	175.72	27	161.96	2.84*
Comprehension:					
Pre-Test	29	157.28	27	158.63	.29
Post-Test	29	162.41	27	164.30	.45
Directed Reading:					
Pre-Test	29	164.79	27	159.89	.34
Post-Test	28	168.43	27	164.15	.81
Word Meaning:					
Pre-Test	28	169.00	27	163.19	1.33
Post-Test	28	168.43	27	172.81	.81
Paragraph Comprehension					
Pre-Test	28	153.04	27	153.74	.12
Post-Test	28	162.71	27	156.48	1.39
Sentence Meaning:					
Pre-Test	28	161.50	27	170.74	1.98
Post-Test	28	167.43	27	167.96	.30
Alphabetizing:					
Pre-Test	29	163.45	27	159.41	.92
Post-Test	29	172.69	27	165.22	1.70
Indexing:					
Pre-Test	29	166.38	27	155.81	2.46**
Post-Test	29	169.38	27	160.48	1.41

* Significant at the .01 level of confidence (t ratio of 2.68 required)
** Significant at the .05 level of confidence (t ratio of 2.01 required)

However, these gains were not statistically significant.

The control group made the greater gain in subtests Comprehension, Directed Reading, Word Meaning, and Indexing. However, these gains were not statistically significant.

The post-test means for the experimental group excelled in seven subtests: Rate, Directed Reading, Word Meaning, Paragraph Comprehension, Sentence Meaning, Alphabetizing, and Indexing. The post-test means for the control group excelled in one subtest: Comprehension.

Tables 6 and 7 show the comparison for pre- and post-test mean scores on the Iowa Silent Reading Test for both groups. For the experimental group, subtest Rate was significant at the .01 level of confidence. Subtest Alphabetizing was significant at the .05 level of confidence. In each subtest, the experimental group made a gain from the pre- to the post-test, except in subtest Word Meaning, which showed a loss.

In the control group, subtest Word Meaning was significant at the .05 level of confidence. In each subtest the control group made a gain from the pre- to the post-test except in subtest Sentence Meaning, which showed a loss.

Table 6

Comparison of Pre-Test and Post-Test Mean Scores, Iowa Silent Reading Test, for Experimental Group

Subtest	Pre-Test N	Pre-Test Mean	Post-Test N	Post-Test Mean	t
Rate	29	162.93	29	175.72	3.07*
Comprehension	29	157.28	29	162.41	1.10
Directed Reading	29	164.79	28	168.43	.84
Word Meaning	28	169.00	28	175.64	1.33
Paragraph Comprehension	28	153.04	28	162.71	1.81
Sentence Meaning	28	161.50	28	169.43	1.53
Alphabetizing	29	163.45	29	172.69	2.55**
Indexing	29	166.38	29	169.38	.69

* Significant at the .01 level of confidence (t ratio of 2.68 required)
** Significant at the .05 level of confidence (t ratio of 2.01 required)

Table 7

Comparison of Pre-Test and Post-Test Mean Scores, Iowa Silent Reading Test, for Control Group

Subtest	Pre-Test N	Pre-Test Mean	Post-Test N	Post-Test Mean	t
Rate	27	156.78	27	161.96	1.08
Comprehension	27	158.63	27	164.30	1.33
Directed Reading	27	159.89	27	164.15	1.05
Word Meaning	27	163.19	27	172.81	2.14*
Paragraph Comprehension	27	153.74	27	156.48	.55
Sentence Meaning	27	170.74	27	167.96	.65
Alphabetizing	27	159.41	27	165.22	1.15
Indexing	27	155.81	27	160.48	.74

* Significant at the .05 level of confidence (t ratio of 2.01 required)

Chapter 5

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

SUMMARY

Before undertaking this study, the investigator had become interested in several things: First, in how elementary and junior high school students react to various types of questions and how teachers influence children's thinking through the kinds of questions they ask. Second, the investigator wished to determine if questioning technique would influence reading achievement. Third, the investigator wished to determine if questioning techniques would influence students' attitudes toward reading.

The reading study lasted nine weeks. The subjects were selected at random by Education Coordinate Computer. The subjects were fifty-six seventh grade students; twenty-seven functioned as a control group and twenty-nine as an experimental group. The control and experimental groups used the same material--Scott, Foresman Basal Reading Series, Wide, Wide World. The investigator used questions suggested in the Teacher's Manual for the control group. The Sanders' Questioning Technique, categories 5 (analysis) and 7 (evaluation) was used with the experimental group.

The Iowa Silent Reading Test was used for the pre-test and post-test to determine gains in reading achievement. The t test was applied to the mean scores to determine if a statistically significant difference existed. An attitude test was administered as a pre-test and post-test and the results were compared to determine if there was a significant change in the attitudes of the subjects toward reading.

CONCLUSIONS

As a result of this research, conducted at Morgan Junior High School in Ellensburg, Washington, the null hypothesis was accepted. This hypothesis stated that there would be no significant difference in reading achievement growth or attitude change toward reading through two different questioning techniques. Two subtests, Rate and Indexing, were statistically significant, favoring the experimental group; and one subtest, Word Meaning, was statistically significant, favoring the control group. The two questioning methods used appeared to have no significant effect on reading achievement growth in this study, for the subtests compared showed no significant differences. The mean scores for the experimental group were higher in four subtests, whereas the control group mean scores were higher in four subtests. These differences in mean scores may have been due to chance.

The results from the attitude test would indicate that the experimental group made the greater change. The experimental group showed an

82 response or 24 percent increase toward the negative scale; the control group showed a 49 response or 10 percent increase toward the negative scale for all areas. The experimental group showed a 79 response or 10 percent decrease on the positive scale; the control group showed a 143 response or 17 percent decrease on the positive scale.

The experimental group for the four forms in reading--Basal Text, Fiction, Non-Fiction, and Informational Type--showed a 49 response or 40 percent increase toward the negative scale; the control group showed a 19 response or 11 percent decrease on the negative scale in these areas.

The experimental group for the four forms in reading showed a 57 response or 14 percent decrease on the positive scale, while the control group showed a 22 response or 5 percent decrease on the positive scale. This greater change in attitude for the experimental group was possibly due to a lack of specific structured questions which they had been accustomed to answering.

At the conclusion of the teaching unit used in this study, the investigator spent some time questioning students from the experimental group concerning their reactions toward the type of questions which had been used. The following are some of the statements of these students:

> I didn't like it because I like to know what I have to do.
> I didn't like it because it's not definite.
> I wouldn't answer questions when called on, because I wasn't used to talking like that.

Some students indicated that because of past experiences and because of lesser abilities, they did not want to verbally interact because they were afraid of voicing their ideas before their peers, whom they felt had more worthwhile things to say.

Statements such as these have led the investigator to believe that to gain a true evaluation of different questioning techniques, a study:

1. should be of longer duration;

2. should use subjects who have experienced greater flexibility in their academic backgrounds;

3. should be conducted using several teachers instead of only one.

RECOMMENDATIONS

The preceding conclusions are based on evidence that has been reported in test results. Therefore, the investigator recommends that the unit of time for other studies of this nature be of longer duration.

It is recommended that a larger sampling of students be used.

It is recommended that the sampling for the experimental group have some further background in different methods of questioning techniques in the teaching of reading before being exposed to a totally new approach.

It is recommended that a more sensitive attitudinal test be used as a measurement of attitude change.

It is recommended that more than one teacher be involved in a similar study.

It is recommended that a study of more of Sanders' categories in classroom questioning be made available.

It is recommended that research and literature on classroom questions be made available for teachers to study.

It is recommended that workshops be conducted on techniques of classroom questioning.

It is recommended that an observation technique be developed that can be used to give teachers feedback on their strategies of classroom questioning.

Although the findings indicated there was no difference whether one used questions from the teacher's manual accompanying the basal reader or Sanders' questioning technique, one must consider the intangible, non-measurable, affective, and higher cognitive development of reading abilities. Some of these abilities are open-mindedness, multi-viewpoints, and critical analysis of reading. Considering these intangibles, it is recommended that this study be repeated using instruments or case study techniques that might give more insight to the above learnings.

It is recommended that an instrument be developed to speak to these present unmeasurable achievements in reading.

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APPENDIX A

IOWA SILENT READING TESTS

APPENDIX B

ATTITUDES TEST

ATTITUDES

These are some words that might express your feelings or the way you think about different kinds of reading. Rank five words you feel best describe your feelings. If you feel there are other words that describe your attitude, write them in the blanks at the bottom of the page.

Reading (Basal Text)	Science	Social Studies	Math
__ hate	__ hate	__ hate	__ hate
__ boring	__ boring	__ boring	__ boring
__ dislike	__ dislike	__ dislike	__ dislike
__ confining	__ confining	__ confining	__ confining
__ failure	__ failure	__ failure	__ failure
__ defeated	__ defeated	__ defeated	__ defeated
__ frustrated	__ frustrated	__ frustrated	__ frustrated
__ confused	__ confused	__ confused	__ confused
__ hard to understand	__ hard to understand	__ hard to understand	__ hard to understand
__ disorganized	__ disorganized	__ disorganized	__ disorganized
__ like	__ like	__ like	__ like
__ exciting	__ exciting	__ exciting	__ exciting
__ challenging	__ challenging	__ challenging	__ challenging
__ love	__ love	__ love	__ love
__ pleasant	__ pleasant	__ pleasant	__ pleasant
__ successful	__ successful	__ successful	__ successful
__ easy to understand	__ easy to understand	__ easy to understand	__ easy to understand
__ elated	__ elated	__ elated	__ elated
__ enjoyable	__ enjoyable	__ enjoyable	__ enjoyable
__ _____	__ _____	__ _____	__ _____
__ _____	__ _____	__ _____	__ _____
__ _____	__ _____	__ _____	__ _____

Recreational Reading

English	Fiction	Non Fiction	Information Type
___ hate	___ hate	___ hate	___ hate
___ boring	___ boring	___ boring	___ boring
___ dislike	___ dislike	___ dislike	___ dislike
___ confining	___ confining	___ confining	___ confining
___ failure	___ failure	___ failure	___ failure
___ defeated	___ defeated	___ defeated	___ defeated
___ frustrated	___ frustrated	___ frustrated	___ frustrated
___ confused	___ confused	___ confused	___ confused
___ hard to understand	___ hard to understand	___ hard to understand	___ hard to understand
___ disorganized	___ disorganized	___ disorganized	___ disorganized
___ like	___ like	___ like	___ like
___ exciting	___ exciting	___ exciting	___ exciting
___ challenging	___ challenging	___ challenging	___ challenging
___ love	___ love	___ love	___ love
___ pleasant	___ pleasant	___ pleasant	___ pleasant
___ successful	___ successful	___ successful	___ successful
___ easy to understand	___ easy to understand	___ easy to understand	___ easy to understand
___ elated	___ elated	___ elated	___ elated
___ enjoyable	___ enjoyable	___ enjoyable	___ enjoyable
___ _____	___ _____	___ _____	___ _____
___ _____	___ _____	___ _____	___ _____
___ _____	___ _____	___ _____	___ _____

APPENDIX C

RAW DATA

Table 8

Standard Scores of Pre-Test for Experimental Group
Iowa Silent Reading Tests

Pupil	Rate	Compre-hension	Directed Reading	Word Meaning	Paragraph Comp.	Sentence Meanings	Alphabe-tizing	Indexing
E1	147	162	176	167	153	188	177	150
E2	122	152	156	149	145	145	177	156
E3	170	178	170	178	145	178	177	180
E4	155	162	154	165	131	169	146	153
E5	153	185	174	175	168	178	157	176
E6	147	144	158	187	153	171	154	160
E7	155	132	150	158	136	145	146	147
E8	162	123	150	136	149	126	160	164
E9	174	123	160	150	123	104	157	134
E10	167	144	182	180	157	178	177	176
E11	147	178	148	173	145	171	143	147
E12	181	172	195	195	201	183	177	180
E13	170	136	156	141	120	169	160	176
E14	183	144	160	164	145	153	168	150

Table 8 (Continued)

Pupil	Rate	Compre-hension	Directed Reading	Word Meaning	Paragraph Comp.	Sentence Meanings	Alphabe-tizing	Indexing
E15	160	157	150	158	123	183	151	160
E16	170	162	178	178	161	183	160	176
E17	181	144	174	178	171	183	182	176
E18	176	162	172	190	171	188	182	168
E19	172	172	172	187	168	174	182	180
E20	156	185	160	158	165	183	151	188
E21	147	178	160	175	131	183	157	153
E22	178	172	178	168	161	178	182	180
E23	135	132	134	139	116	156	177	153
E24	182	144	165	154	165	171	134	160
E25	165	162	170	173	181	188	139	176
E26	163	172	182	198	176	188	157	180
E27	172	152	163	-	-	-	177	188
E28	179	192	184	211	176	183	182	188
E29	156	140	148	147	149	145	151	150

Table 9

Standard Scores of Post-Test for Experimental Group
Iowa Silent Reading Tests

Pupil	Rate	Compre-hension	Directed Reading	Word Meaning	Paragraph Comp.	Sentence Meanings	Alphabe-tizing	Indexing
E1	160	167	-	-	-	-	172	168
E2	172	141	156	147	141	133	182	168
E3	172	172	176	187	183	178	177	147
E4	158	172	165	175	149	166	151	176
E5	170	185	172	190	168	183	182	100
E6	163	157	172	190	161	163	177	180
E7	168	132	132	141	145	156	151	150
E8	172	136	150	150	120	145	177	176
E9	168	139	165	150	157	143	177	160
E10	206	152	176	190	161	166	182	176
E11	155	167	148	172	149	166	157	176
E12	191	192	202	198	189	178	182	188
E13	193	152	167	180	157	171	177	180
E14	174	162	167	168	136	186	182	176
E15	155	172	150	167	145	171	168	147

Table 9 (Continued)

Pupil	Rate	Compre-hension	Directed Reading	Word Meaning	Paragraph Comp.	Sentence Meanings	Alphabe-tizing	Indexing
E16	176	167	182	195	165	169	172	188
E17	206	152	174	173	161	153	177	176
E18	181	185	200	195	165	178	182	188
E19	185	178	176	195	196	183	172	188
E20	168	157	165	173	174	153	177	176
E21	151	167	160	182	149	143	182	160
E22	142	136	124	143	153	129	177	156
E23	182	152	154	164	161	171	126	156
E24	193	172	182	190	183	166	177	180
E25	183	185	193	190	186	174	172	176
E26	195	162	186	171	189	126	168	180
E27	206	185	197	209	196	171	182	188
E28	172	157	160	154	141	123	182	164
E29	179	157	165	178	176	178	168	168

Table 10

Standard Scores of Pre-Test for Control Group
Iowa Silent Reading Tests

Pupil	Rate	Compre-hension	Directed Reading	Word Meaning	Paragraph Comp.	Sentence Meanings	Alphabe-tizing	Indexing
C1	144	136	158	167	153	183	164	153
C2	151	162	154	147	145	153	151	134
C3	151	157	172	164	127	188	182	160
C4	175	178	187	173	183	186	182	188
C5	147	136	158	150	131	145	149	156
C6	180	178	172	168	168	178	182	168
C7	180	167	154	171	186	188	177	160
C8	155	172	160	160	141	166	146	150
C9	165	167	156	152	171	166	177	160
C10	125	118	137	138	113	145	141	139
C11	156	172	167	180	165	183	143	150
C12	162	140	132	149	127	140	134	134
C13	138	157	165	169	165	181	157	156
C14	133	167	156	156	149	171	154	160
C15	162	157	158	171	153	188	182	150

Table 10 (Continued)

Pupil	Rate	Compre-hension	Directed Reading	Word Meaning	Paragraph Comp.	Sentence Meanings	Alphabe-tizing	Indexing
C16	193	172	178	182	176	183	177	188
C17	167	152	178	168	176	159	177	180
C18	153	185	167	192	165	183	164	176
C19	135	152	150	141	113	143	139	125
C20	158	157	160	165	145	174	149	147
C21	160	148	141	141	165	166	143	139
C22	174	178	160	190	192	183	172	180
C23	160	172	174	180	171	188	160	160
C24	153	162	165	168	153	188	182	160
C25	158	152	154	154	157	163	129	125
C26	158	132	154	154	141	174	134	153
C27	140	157	150	158	120	145	157	156

Table 11

Standard Scores of Post-Test for Control Group
Iowa Silent Reading Tests

Pupil	Rate	Compre-hension	Directed Reading	Word Meaning	Paragraph Comp.	Sentence Meanings	Alphabe-tizing	Indexing
C1	147	167	156	175	141	156	164	164
C2	160	136	150	165	149	145	177	153
C3	155	178	163	187	153	178	182	176
C4	187	185	189	192	161	178	182	176
C5	135	157	150	154	171	159	151	150
C6	181	167	186	171	157	178	182	176
C7	191	172	197	195	186	183	182	176
C8	206	157	165	173	141	171	168	160
C9	175	152	172	175	161	174	182	180
C10	133	132	139	133	123	123	129	139
C11	151	178	158	178	168	169	168	153
C12	142	162	137	144	161	159	137	134
C13	144	172	163	165	153	183	160	180
C14	138	167	150	175	157	174	168	164
C15	160	178	165	178	157	166	182	176

Table 11 (Continued)

Pupil	Rate	Compre-hension	Directed Reading	Word Reading	Paragraph Comp.	Sentence Meanings	Alphabe-tizing	Indexing
C16	200	172	191	187	174	183	172	176
C17	167	172	182	190	168	178	177	176
C18	151	185	167	206	161	188	167	176
C19	140	152	152	138	141	143	121	139
C20	149	178	160	175	168	166	172	168
C21	158	152	154	158	141	145	151	139
C22	174	157	176	190	161	169	182	180
C23	162	185	176	195	168	181	182	168
C24	162	172	163	154	165	171	182	168
C25	170	167	160	190	141	166	116	150
C26	168	136	139	165	145	166	164	168
C27	167	148	152	158	153	183	160	168

Table 12

Ranking of Choices of Experimental Group in Eight Forms of Reading on Attitudes Pre- and Post-Test

	Reading		Science		Social Studies		Math		English		Fiction		Non Fiction		Inform. Type	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Hate	2	5	6	5	1	5	5	4	1	4	0	1	1	2	2	10
Boring	8	7	14	11	8	11	6	10	8	11	1	1	2	6	11	15
Dislike	9	4	10	9	7	8	10	7	8	7	0	1	3	7	9	15
Confining	4	5	4	2	3	9	4	6	5	8	0	0	3	6	7	11
Failure	2	4	4	7	4	6	4	7	4	1	0	1	0	2	2	4
Defeated	0	2	3	3	2	0	2	0	1	4	1	0	1	3	0	4
Frustrated	5	0	9	7	4	5	7	10	2	5	0	0	0	2	5	6
Confused	4	5	7	8	6	2	12	8	3	5	2	2	2	6	9	5
Hard to understand	3	3	10	11	1	2	10	14	3	10	0	1	4	7	13	7
Disorganized	2	4	6	3	3	3	6	3	3	8	1	0	3	3	1	4
Like	16	19	8	13	19	15	15	16	15	16	21	20	22	19	16	11
Exciting	13	6	6	6	12	13	3	3	6	3	20	16	12	13	8	5
Challenging	18	13	8	13	18	19	17	15	9	11	17	17	13	15	17	8
Love	2	1	3	2	2	3	1	1	4	0	18	9	5	3	0	2
Pleasant	13	17	7	10	12	8	6	6	17	8	18	19	19	13	10	8
Successful	10	13	7	10	11	12	9	8	15	12	11	11	11	10	8	8
Easy to understand	9	10	3	5	15	14	11	8	18	10	7	19	12	6	11	8
Elated	1	0	3	0	0	0	1	1	0	2	8	0	6	3	1	1
Enjoyable	17	16	5	10	11	10	9	8	16	9	20	22	19	15	9	5

Table 13

Ranking of Choices of Control Group in Eight Forms of Reading on Attitudes Pre- and Post-Test

	Reading		Science		Social Studies		Math		English		Fiction		Non Fiction		Inform. Type	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Hate	1	1	5	6	4	4	7	8	2	3	2	1	4	2	10	10
Boring	7	7	9	14	14	13	14	15	15	15	4	2	8	10	17	16
Dislike	5	2	6	12	8	10	7	8	8	12	1	1	6	4	11	10
Confining	6	5	3	3	2	5	4	3	7	5	2	1	5	6	6	8
Failure	3	3	5	6	1	3	6	6	0	3	1	0	2	1	8	4
Defeated	3	4	1	2	3	3	4	5	1	4	1	0	2	1	3	1
Frustrated	7	2	6	8	3	4	7	8	4	5	1	1	3	2	6	8
Confused	4	7	5	8	8	5	5	12	5	7	2	0	3	4	5	4
Hard to understand	5	2	10	11	6	2	7	16	3	8	2	1	5	3	7	11
Disorganized	7	2	5	4	5	6	3	3	3	4	0	0	4	1	4	6
Like	19	23	20	14	20	17	18	10	23	14	21	16	20	21	10	15
Exciting	10	11	11	7	11	8	6	5	6	4	20	25	17	15	7	5
Challenging	17	12	12	13	14	11	21	12	18	9	16	12	13	14	10	7
Love	0	3	3	5	1	4	0	3	3	0	8	18	4	8	7	1
Pleasant	16	13	11	8	11	9	7	8	18	13	20	21	14	19	12	7
Successful	15	9	16	8	17	11	13	8	11	10	16	8	10	7	8	8
Easy to understand	14	18	12	4	13	16	13	8	15	12	16	17	15	10	11	14
Elated	2	0	2	3	2	0	4	3	2	2	5	2	4	2	3	0
Enjoyable	17	16	16	6	15	9	12	9	14	7	20	18	12	11	9	4

Courses Included in Graduate Study

Required Courses

Education	507	Introduction to Graduate Study
Education	570	Educational Foundations
Psychology	552	Human Growth & Development, Advanced
Education	600	Thesis

Courses in Field of Specialization

Education	422	Modern Reading Program, Intermediate
Education	423	Reading Problems in the Secondary School
Education	426	Studies and Problems in Reading
Education	438	Individualized Instruction
Education	585	School Supervision
Education	420	Psychology of Reading
Education	424	Reading in Content Field
Education	421	Modern Reading Program, Primary
Spec. Ed.	438	Remedial Reading
Spec. Ed.	448.3	Practicum: Remedial & Learning Disorders
Education	321	Reading Readiness

Elective Courses

English	320	Children's Literature
Education	322	Teaching of Reading
Education	420	Teaching of Language Arts
Education	440CR	Critical Reading Workshop
Education	555	Program of Curriculum Improvement

CENTRAL WASHINGTON STATE COLLEGE

Graduate Division

Final Examination of

Ruth Bechtel

B. A. in Ed., Central Washington State College

1965

for the degree of

Master of Education

Committee in Charge

Dr. Azella Taylor

Dr. John E. Davis Mrs. Doris Jakubek

Reading Center

Thursday, August 7, 1969

3:00 p.m.

BIOGRAPHICAL INFORMATION

Please note:
Biographical information redacted due to privacy concerns

BORN: [redacted]

UNDERGRADUATE STUDY:

Multnomah School of the Bible, 1950-1951

Central Washington State College, 1961-1965, Major--Psychology

PROFESSIONAL EXPERIENCE:

Teacher: Sixth grade self-contained classroom, Ellensburg, Washington, 1965-1966

Teacher: Junior High School, English, Reading, and Social Studies, Ellensburg, Washington, 1966-1967

Teacher: Junior High School Reading, Ellensburg, Washington, 1967-69

CERTIFICATION:

Three year Provisional Certificate for elementary and secondary schools, June 11, 1965

Three year Provisional Certificate--Renewal, April 22, 1968

Standard Certificate for elementary and secondary schools, Sept. 4, 1968

ADDITIONAL EXPERIENCE:

Head Secretary, Kesler Dairy, Bozeman, Montana, 1948-1950
Sunday School Teacher, Ellensburg, Washington, 1951-1961
Guide for Pioneer Girls, 1952-1955
Vice-President for Central Women's Club, 1963-1964
President, Alpha Omega, 1967-1968
Executive Board of Christian Women's Association, 1969-1970

FIELD OF SPECIALIZATION:

Reading Specialist

THESIS TITLE:

A Comparative Study of Reading Achievement Growth and Attitude Toward Reading When Instructed Through A Basal Reader Manual or Sanders' Questioning Technique