AN INVESTIGATION INTO THE DIFFERENCES IN READING ATTITUDE AND ACHIEVEMENT OF DISADVANTAGED CHILDREN INSTRUCTED BY AN INDIVIDUALIZED OR BASAL APPROACH

by

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Abstract

This study investigated the reading progress made by disadvantaged children instructed by either an individualized approach or a basal approach. A review of the literature indicated that children from disadvantaged homes frequently lack the motivation and attitudes to achieve academically. In many cases the individualized approach to reading instruction has been shown to improve attitudes toward reading. This study was designed to compare attitude and achievement growth of children instructed by either the popular basal reader approach or the individualized approach.

The two instructional approaches were defined to ensure that all classrooms met the criteria for each program. The basal approach was one where the teacher followed the suggestions in the teachers' manual which accompanied the basal reader for all reading instruction. The individualized approach was defined as one which incorporated the principles of seeking, self-selection and pacing with individual conferences, skills instruction as needed, sharing sessions and record sheets kept by each child.

The sample was labelled "disadvantaged" and defined by father's occupation falling in Classes five through seven of the Blishen Occupational Scale.

Children were selected who met the criteria of being disadvantaged, and were presently enrolled in grade three individualized or basal classrooms in the lower mainland of British Columbia, Canada. The children were placed in the four cells of the experimental design.
depending on their sex, and instructional approach. Although there were originally twenty subjects per cell, attrition resulted in approximately sixteen subjects per cell for whom complete data were available.

In February each subject was given the Goodenough-Harris Drawing Test, a non-verbal measure of intellectual ability. In May, each subject was tested on the San Diego Inventory of Reading Attitude, and the California Reading Test, Upper Primary, Form W.

The four dependent variables—attitude, vocabulary, comprehension and total reading—were analyzed over the four cells. Analysis of covariance removed effects due to intelligence, and three basic questions were answered about each dependent variable. These questions were:

1. Do significant differences in scores exist because of the different instructional approaches used?
2. Do the scores vary significantly between boys and girls?
3. Does an interaction effect of instructional approach and sex cause differences in scores?

Of the twelve hypotheses which were tested, one proved to be significant at the .05 level. This was Hypothesis Two, that different attitudes to reading occurred because of sex, with the attitude of the girls being superior to that of the boys. Trends, significant at the .25 level, indicated that girls received higher scores on achievement measures, and that boys taught by the basal approach and girls taught by the individualized approach received best results on the vocabulary test.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>iii</td>
</tr>
</tbody>
</table>

## Chapter

1. NATURE OF THE STUDY                                | 1    |
   Introduction                                      | 1    |
   The Disadvantaged Student                         | 3    |
   Environmental factors                              | 4    |
   Educational deficiencies                          | 5    |
   Summary                                           | 8    |
   The Reading Program                               | 9    |
   Aims of a reading program                         | 9    |
   The importance of interest                        | 9    |
   The individualized approach                       | 10   |
   The Setting                                       | 13   |
   The Purpose                                       | 14   |
   Definitions                                       | 17   |
   Limitations                                       | 18   |

2. RELATED RESEARCH                                  | 20   |
   Reading Achievement of the Disadvantaged           | 20   |
   Individualized and Basal Reading Approaches        | 23   |
   Chapter Summary                                    | 30   |

3. PROCEDURES                                       | 32   |
   Sample                                            | 34   |
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumentation</td>
<td>35</td>
</tr>
<tr>
<td>Covariate measure</td>
<td>35</td>
</tr>
<tr>
<td>Dependent variables</td>
<td>35</td>
</tr>
<tr>
<td>Design</td>
<td>36</td>
</tr>
<tr>
<td><strong>4. RESULTS OF THE STUDY</strong></td>
<td>38</td>
</tr>
<tr>
<td>Analysis of the Data</td>
<td>38</td>
</tr>
<tr>
<td>Analysis of covariance</td>
<td>38</td>
</tr>
<tr>
<td>Hypotheses One, Two and Three</td>
<td>39</td>
</tr>
<tr>
<td>Hypotheses Four, Five and Six</td>
<td>39</td>
</tr>
<tr>
<td>Hypotheses Seven, Eight and Nine</td>
<td>42</td>
</tr>
<tr>
<td>Hypotheses Ten, Eleven and Twelve</td>
<td>45</td>
</tr>
<tr>
<td>Interpretation of the Analysis</td>
<td>45</td>
</tr>
<tr>
<td>Teacher Variable</td>
<td>48</td>
</tr>
<tr>
<td><strong>5. SUMMARY, CONCLUSIONS AND IMPLICATIONS</strong></td>
<td>51</td>
</tr>
<tr>
<td>Summary</td>
<td>51</td>
</tr>
<tr>
<td>Conclusions</td>
<td>53</td>
</tr>
<tr>
<td>Implications</td>
<td>55</td>
</tr>
<tr>
<td>Suggestions for Further Research</td>
<td>56</td>
</tr>
<tr>
<td><strong>WORKS CITED</strong></td>
<td>58</td>
</tr>
<tr>
<td><strong>APPENDIX A</strong></td>
<td>64</td>
</tr>
<tr>
<td><strong>APPENDIX B</strong></td>
<td>67</td>
</tr>
<tr>
<td><strong>APPENDIX C</strong></td>
<td>68</td>
</tr>
<tr>
<td><strong>APPENDIX D</strong></td>
<td>70</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>1. Analysis of Variance for the Attitude Measure</td>
<td>40</td>
</tr>
<tr>
<td>2. Means and Standard Deviations for Each Cell on the Attitude Measure</td>
<td>40</td>
</tr>
<tr>
<td>3. Analysis of Variance for the Vocabulary Measure</td>
<td>41</td>
</tr>
<tr>
<td>4. Means and Standard Deviations for Each Cell on the Vocabulary Measure</td>
<td>41</td>
</tr>
<tr>
<td>5. Analysis of Variance for the Comprehension Measure</td>
<td>43</td>
</tr>
<tr>
<td>6. Means and Standard Deviations for the Comprehension Measure</td>
<td>43</td>
</tr>
<tr>
<td>7. Analysis of Variance for the Total Reading Achievement Measure</td>
<td>44</td>
</tr>
<tr>
<td>8. Means and Standard Deviations for the Total Reading Achievement Measure</td>
<td>44</td>
</tr>
<tr>
<td>9. Means and Standard Deviations for the I.Q. Test</td>
<td>47</td>
</tr>
<tr>
<td>10. Correlations between I.Q. and Each Dependent Variable</td>
<td>47</td>
</tr>
<tr>
<td>11. Stanine Scores of Each Dependent Variable</td>
<td>49</td>
</tr>
<tr>
<td>12. Percentile Scores for the Achievement Variables</td>
<td>49</td>
</tr>
<tr>
<td>13. Means, Standard Deviations and F-Score of Teachers</td>
<td>50</td>
</tr>
<tr>
<td>14. Analysis of Variance for the Attitude Measure</td>
<td>67</td>
</tr>
<tr>
<td>15. Analysis of Variance for the Vocabulary Measure</td>
<td>67</td>
</tr>
<tr>
<td>16. Analysis of Variance for the Comprehension Measure</td>
<td>68</td>
</tr>
<tr>
<td>17. Analysis of Variance for the Total Reading Measure</td>
<td>68</td>
</tr>
<tr>
<td>18. Correlations between Achievement and Attitude</td>
<td>69</td>
</tr>
</tbody>
</table>
CHAPTER 1

NATURE OF THE STUDY

Introduction

This study was concerned with a particular population of school children, and two forms of organizing reading instruction. Specifically, it investigated differences in reading attitude and achievement of disadvantaged students instructed by either a basal or individualized approach.

During the past ten years these issues of disadvantaged children and instructional approaches to reading have both been independently discussed in educational research. Students who did not achieve to levels their potential might indicate \(7,29\) were frequently found to be deprived of a number of experiences assumed prerequisite to formal school education \(5,12,16,17,25,52\). Educators in the last decade have tried to identify these students, determine possible causes of their deprivation, and devise educational approaches to overcome deficiencies and provide better education.

Methods of reading instruction, too, have been investigated frequently. Dissatisfaction with traditional means of grouping, instructing, and meeting the individual needs of each pupil, have caused many researchers to look closely at the most popular method of reading instruction— the basal reader program \(9,60\). Methods of individualizing instruction, discussed for the past fifty years, have been examined as
an aid to alleviating these weaknesses. During the last decade much research has been concerned with establishing the superiority of one approach over the other (4,48,68).

A review of the literature indicated that the individualized approach might be especially useful in meeting the needs of disadvantaged students. The reasons for this conclusion have been summarized by the following statements.

1. a) Attitudes towards reading and interest in reading must be positive if reading skills are to be acquired (14,47,58).

   b) A common characteristic of disadvantaged students has been found to be lack of interest in educational attainment (5,12,49,52,66).

   c) Individualized reading programs have proven to be superior to basal programs in fostering positive attitudes to reading (1,34,36,61,64,65).

2. a) Reading must be seen as meaningful to the reader for reading skills to be acquired (14,18,43,47,58,68,73).

   b) Typically, disadvantaged students lack value and respect for the reading act, because their environment lacks models and stimuli of reading behavior (5,12,20,24,49).

   c) Methods of instruction recommended in an individualized program emphasize that understanding the purpose and value of the reading act precede formal reading and that the reader's own purposes, needs and interests guide his choice of materials (4,43,48,68).
3. a) "Much of the curricular content to which children are exposed is based on the assumption that most of them have seen and understood certain objects and processes prior to entry into first grade" (17:257).

b) Disadvantaged students frequently lack a great number of the skills, vocabulary and concepts necessary to successful instruction.

c) Individualized programs recommend instruction in skills, vocabulary and concepts proceed at different paces and times as needed by each students (4, 43, 48, 68).

4. a) Reading is an area in which many disadvantaged students are deficient (17, 20, 21, 38).

b) Individualized instruction in varied instructional areas has been suggested for overcoming the deficiencies of disadvantaged students (18, 20, 21, 26, 28, 33, 38, 44, 49, 54, 72).

For these reasons, it was hypothesized that disadvantaged students taught to read by an individualized approach would show greater achievement in reading and have better attitudes toward reading than those taught by the basal method.

The Disadvantaged Student

The term disadvantaged or culturally deprived indicated that the students, in some or many ways, were at a disadvantage in the educational environment of the school. The characteristics attributable to them are many and the number of possible combinations of characteristics is
large. Thus any two disadvantaged students may be quite dissimilar. The characteristics describing this population can be roughly divided into two categories: environmental factors that hinder acquisition of skills and/or attitudes necessary for educational competence, and, the educational factors themselves which are lacking. There is, of course, overlap between the two divisions, but the division is useful for the purpose of the discussion here.

**Environmental factors**

The major environmental characteristic of the disadvantaged students has been found to be their low socio-economic status (5,16,24,52). Fathers are often unemployed (66), and the family structure is extended (75) and disorganized (25), i.e., many relations live in the same dwelling and divorces and out-of-wedlock children are frequent. The formal education of parents is limited to high school level or below (25). As a family there is little group activity; in fact, the family may not even eat together regularly (66).

Low socio-economic families have been found to be frequently matriarchal. Mothers are expected to make decisions and rear the children; fathers, to impose constraints and be directive rather than supportive. Children perceive their parents as being inaccessible for communication and advice, and perceive adults in general as being hostile. More dependence is placed upon siblings and peers than on adult authority (66,75).

Value systems of lower socio-economic families have been found to be similar to those held by upper and middle socio-economic groups,
in that honesty, happiness, consideration, obedience and dependability are desired by all. However, behavioristic values of lower socio-economic families tend more toward respectability (obedience, neatness, cleanliness) whereas middle classes placed more emphasis on internal standards of conduct (self-control, curiosity, consideration) (75). Parents of disadvantaged children measure progress in school not by academic achievement but by discipline standards. They tend to be satisfied as long as the children are not in trouble (16), and they react to misbehavior in terms of the immediate consequences not the intent of the action (66). It has been found that girls are usually overprotected whereas boys are inadequately disciplined (66).

Conversation between adults and children is limited. Children are seldom read to. Typically, newspapers and books are lacking in low socio-economic households. Explanations and discussions seldom occur. Rather, communication is in terms of brief commands, terse expletives, and visual signs (5, 17, 49, 51, 66).

Disadvantaged children tend to be competitive and aggressive, and to express their aggression openly (75). One study found that parents with low occupational and educational levels tended to have extremely aggressive children (16).

Educational deficiencies

Generally it has been found that disadvantaged children do not understand what reading is, or have a desire to learn to read, because their home environments lack such reading stimuli as storybooks, newspapers, magazines, library cards and models of reading behavior (49, 50, 66).
Paucity of conversation with adults has a severe effect on language and vocabulary development of disadvantaged children (51). An environment lacking vocal stimulation and adequate models which young children could imitate and thereby learn language is characteristic of the disadvantaged (51). On the other hand, a middle class child, "In a circumstance that is characterized primarily by love, warm acceptance of the child's efforts to recreate the language of his culture, and individual instruction, where failure is not considered possible,... makes tremendous, almost unbelievable growth in his language capacities" (15:187). Auditory discrimination has been found to be poorly developed (17, 24, 49) and one researcher found that disadvantaged children are likely to have poor visual discrimination (49).

The language structure of disadvantaged children has been found to be composed of short, simple, incomplete statements used primarily for social interchange as opposed to elaborate structures containing precise statements and embodying a large range of concepts, vocabulary, structural elements and information, of middle-class children (5, 49). Elaborate language encourages cognitive use of language, whereas restricted language lacks the breadth and depth for complex statements or thinking which leads to conceptual development (5, 20). The expressive and receptive modes of language have not been adopted by disadvantaged children (24). Their oral language is not at all fluent (17), the dialect spoken might be somewhat foreign to standard English (17), and frequently a foreign language is spoken in the home (2).

"The vocabulary of the culturally disadvantaged learner is likely to be restricted because he is encapsuled in an environment that is
linguistically isolated" (17:258). One investigation revealed that in the United States the vocabulary of children from marginal areas was half that of middle-class children (19).

Disadvantaged children lack concepts which are necessary for functioning in the middle-class classroom. Missing are the pre-school enrichment activities which are associated with growing up—educational toys, books, verbal interaction, and other opportunities for cognitive development (2, 50). Thus, cognitive functioning progresses slowly (24).

Much of the curricular content to which children are exposed is based on the assumption that most of them have seen and understood certain objects and processes prior to their entry into first grade. The disadvantaged child from a severely restricted experiential background, however, will not have the conceptual foundation upon which to build this superstructure of the new concepts which are imposed on him at school (17:257).

It is the concepts of time, number, space and causality which are especially lacking (21), as well as the ability to use verbal and written language for cognitive clues (5, 24, 52).

The self-concept of disadvantaged students is not positively developed. In fact, social and personal, as well as intellectual needs have been neglected (17). Parental attitudes of futility and despair of their living situation, caused by lack of skills or lack of motivation to get skills or employment (2), is transferred to the children. Short range goals, geared to immediate needs, primarily physical and affectional, are highly valued (21).

Education is not seen by the disadvantaged as a dominant value in the culture (5, 16, 52). Lack of motivation to achieve intellectually, coupled with lack of concentration, persistence (24, 15) and attentiveness (16, 49, 66) caused feelings of inadequacy in school (24). Skills
necessary for coping with the expectancies of the teaching-learning situation are non-existent in these children (5,49). The result is low achievement in schoolwork (2,16,17,25,50), a defeatist attitude as a result of repeated failures (17), and an indifferent or noninquiring attitude towards problems (17,24) leading ultimately to dropping out of school. Edington found that the rate of attrition was higher in rural areas than urban, and higher among children of unemployed fathers (16).

Summary

The characteristics of the disadvantaged are related to low socio-economic status. Parents with limited education and income are often too concerned with problems of job-seeking, earning a living and providing the necessities for their families to spare time, money and energy in increasing the educational aptitude and experiences of their children. The mother who works long hours does not come home willing to converse with her children. Usually a few remarks in the form of brief commands and expletives are all she gives. Her children, deprived of auditory-vocal stimulation related to their environment, reach school deficient in auditory discrimination, communication skills, powers of observation and concept development, all of which are necessary for success in the reading act.

Thus, disadvantaged children do not arrive at school ready for a reading program that is suitable for the middle—and upper-classes. They have unique disabilities which must be rectified as they are identified throughout the reading program.
Aims of a reading program

The aims of teaching reading in the educational system have always been the same regardless of the approach or methodology used. First the learner must make the transition from spoken to written language and understand what reading is. Listening to stories, dictating stories, telling stories, writing stories, and making books all precede the formal skill activities. Skills such as vocabulary knowledge, word attack methods, comprehension, reading orally, reading critically, outlining, skimming, summarizing, integrating and assimilating ideas, and assembling and organizing information are developed. To be successful the reader must learn to locate, select, use and search materials, and to identify his own interests and purposes. Sharing ideas, discussion and evaluation are important in developing thinking skills. The reader must learn to set standards for himself and to know when to get help. He must know how to read to gain enjoyment and to gain information. When these goals have been reached, the student can be said to be a reader (42,43,58,64).

The importance of interest

A major motivating force has been found to be the interest and desire on the part of the reader (7,14,18,29,43,47,58,63,68,73).

The reading-thinking process begins in the mind of each reader as he experiences a state of doubt or curiosity about what he knows or does not know, and what he thinks will or will not happen... The self commitment on an intellectual as well as an emotional level has tremendous motivating force. The power of this force is almost immeasurable as it compels and sustains the reader until he finds an answer. The ideas a pupil declares are his ideas; they reflect his
experience and knowledge, his associating and projection, his ego. He is out to prove himself right or wrong. The self-actualizing tendency of self-declared purposes is enormous (58:25).

Lee and Allen say, "... it is the 'self-commitment' of one child ... that leads to individual writing and rapid progress in reading" (43:67). Where self-commitment is not allowed to operate,

where 'school work' is always seen as 'something I'm supposed to do because the teacher wants me to,' there is often little real incentive to accomplish it. Further, not doing it becomes a most satisfactory means of exercising power against the teacher and expressing hostilities toward her (43:82).

Another result of external direction is that the child never learns to direct his own learning or to become independent in his own study procedures (43). "The curriculum should be developed in accordance with the child's needs, interests and problems if it is to have maximum significance and application" (73:154).

Veatch agreed that the interest factor is important in motivation on an individualized reading program and said, "A child's energy and power while he is reading on a self-selection basis enormously reduces the need for a teacher to drill in phonics, word-attack skills, the use of context and picture clues and the like" (68:x).

The individualized approach

The individualized approach to the teaching of reading utilizes, as the main motivating force, the child's interests. This approach has been given several labels; individualized reading being the most popular name, whereas Barbe called it personalized reading, and mentioned the language-experience approach to beginning reading (43) as being "not unlike what is now being called the personalized approach" (4:51).
Three guiding principles of child development (as originally described by Willard Olson in *The Packet*, 1952) have been followed by proponents of individualized instruction. A child seeks that which he is ready to accept, he selects those items from the environment which have meaning at the present time, and he paces himself by accepting only as much as he can handle. The individualized approach implements these principles. The child selects his own material to read. Seeking guides his choice of material as it does his acquisition of new skills. The teacher must be aware of the child's pace, so that he is neither subjected to material or skills he is not ready for and therefore cannot learn, nor waiting expectantly in a void. Instruction takes place on a one-to-one, or small group basis, as it is needed by each child. Diagnosis continually takes place, through a variety of methods (48,68).

Individualized approaches differ, since each is designed to meet the individual needs of the teacher, of the student, of the class as a whole, and of the community in which the school is located. There are, however, standard practices in which most programs engage (4,42,48,68). The child chooses his own reading material from a variety that is available, both trade and textbooks. He reads individually at his own speed. He discusses his book with the teacher during an individual conference. He then initiates a project related to his reading which he designs and completes independently, and later shares with his classmates. A variety of communication skills are employed.

During the conference the teacher diagnoses the reader's strengths and weaknesses, and assigns individual or group instruction to alleviate the weaknesses. Diagnosis is not the only purpose of the individual
conference. Through close personal interaction between student and teacher many psychological needs are fulfilled that could never be met in any other way. Skills and interest groups are frequently formed and as frequently disbanded, varying in size from one or two children to include the whole class.

Students are partially responsible for evaluating their progress. This is facilitated by record sheets and book lists that each child keeps of his activities. These include such things as books read, points he learned or wishes to discuss, new vocabulary encountered, skills exercises and scores, and related activities. During his individual time with the teacher, he is aided in evaluating his progress and charting his future course to eliminate weaknesses. This part of the program is entirely individual, different for each child. Comparisons are not made with other children or groups. The emphasis is on what a child can do, not on what others can do that he cannot but should be doing.

The individualized reading approach emphasizes development of language skills. Oral reading has always a purpose and a true audience situation. The student chooses and reads a part of the story to his teacher during his individual conference. This leads to discussion which checks his vocabulary and comprehension. Most children enjoy sharing, through oral reading, speaking, and explaining projects or stories, in small interest groups or to the class during the "sharing periods".

Written assignments are final expressions of the student's opinion of the book or related matter. Rather than writing answers to
questions, the student often creates his own activity that expresses his thoughts. These typically include summaries, letters to authors, book reports, plays. These are often shared with other members of the class, which gives a purpose to writing. Sharing a story is also done through artistic as well as verbal means. A book may be more suitable for clay model interpretation, or painting, or music. The media is left to the choice of the student.

The Setting

Special reading programs, "aimed at providing children with more of the same instruction in reading, rather than a different type of instruction" (38:54) have not succeeded in raising the reading achievement levels of the disadvantaged.

It is time to re-think the ways in which reading is taught to these children. Although the individualized approach has yet to gain widespread acceptance as an effective way to teach reading, the possibility of its use with deprived youngsters deserves careful consideration... The use of self-selected material (based upon interest and appeal) is an excellent means of reaching the disadvantaged ... " (38:54).

Fader found this in his work with delinquent boys. These boys were allowed to read anything they wished and instructional materials took the form of paperbacks, magazines, and newspapers, which, he contended, related more to the outside world than typical school anthologies. As a result, for the first time, they coveted dictionaries and books. The interest force strongly motivated them (18).

Reaching the child through his interests is the first step. Then the special needs of the disadvantaged can be met by the very individual nature of this instructional approach. Because instruction is aimed at deficiencies as they are identified, there is a greater chance of
rectifying them. The close personal interaction available during the individual conferences can do much to improve the disadvantaged child's self-concept and attitude towards adults and education.

Because the individual is emphasized in this approach to reading instruction, each child's worth and strengths can be used to improve his weaknesses in attitude and skills.

The present study was designed to test the effectiveness of an individualized approach to reading instruction for disadvantaged students who had already gained some competence in reading. Unless the program specifically met the needs of these students they could be expected to make no greater progress than disadvantaged students instructed by a basal approach. Thus, an individualized approach was compared to a basal approach for children in grade three.

The Purpose

This study compared the reading progress made by disadvantaged students instructed by an individualized approach with those instructed by a basal reader approach. Progress was measured on two variables: skills and attitude. A standardized reading achievement test measured those skills generally considered to contribute to reading ability, vocabulary and comprehension, the sum of which indicated general or total reading ability. An attitude inventory indicated the use made of the reading skills, i.e., reading for enjoyment and interest, and the student's attitude towards reading.

The design of the study enabled three questions to be tested about each variable. The three questions concerned the nature of differences in scores due to the differences in instructional approach,
differences in sex, and the interaction effect of instructional approach with sex. The achievement test yielded a vocabulary score, a comprehension score, and a total reading score. The attitude inventory yielded one score. The three questions were tested over each of the four measures, giving twelve hypotheses.

The hypotheses of this study were:

H1. Scores on the attitude measure are higher for children instructed by an individualized approach than those instructed by a basal approach.

H2. Girls' scores on the attitude measure are higher than boys', independent of the instructional approach used.

H3. There is an interaction effect between the instructional approaches and sex as follows: (1) Scores on the attitude measure are higher for the girls in the individualized group and (2) Scores on the attitude measure are higher for the boys in the basal group than for the girls in the basal group.

H4. Scores on the vocabulary measure are higher for children instructed by an individualized approach than children instructed by a basal approach.

H5. Girls' scores on the vocabulary test are higher than boys', independent of instructional approach used.

H6. There is an interaction effect between the instructional approaches and sex as follows: (1) Scores on the vocabulary measure are higher for the girls in the individualized group than for the boys in the individualized group and
(2) Scores on the vocabulary measure are higher for the boys in the basal group than for the girls in the basal group.

H7. Scores on the comprehension measure are higher for children instructed by an individualized approach than children instructed by a basal approach.

H8. Girls' scores on the comprehension test are higher than boys', independent of instructional approach used.

H9. There is an interaction effect between the instructional approaches and sex as follows: (1) Scores on the comprehension measure are higher for the girls in the individualized group than for the boys in the individualized group and (2) Scores on the comprehension measure are higher for the boys in the basal group than for the girls in the basal group.

H10. Scores of total reading are higher for children instructed by an individualized approach than those instructed by a basal approach.

H11. Girls' total reading scores are higher than boys', independent of instructional approach used.

H12. There is an interaction effect between the instructional approaches and sex as follows: (1) Total reading scores are higher for the girls in the individualized group than for the boys in the individualized group and (2) Total reading scores are higher for the boys in the basal group than for the girls in the basal group.
Definitions

In this study the following terms were used:

1. **Disadvantaged**: This term referred to elementary school children whose father's occupation fell into Classes five through seven of the Blishen Occupational Class Scale (6). The choice of the lowest three classes of the scale was somewhat arbitrary, including semi-skilled, unskilled, migrant and frequently unemployed workers, and reflected generally low educational attainment and income status. (For a listing of the occupations included in classes five through seven, see Appendix A.)

2. **Individualized reading program**: An individualized reading program in this study was an instructional approach which incorporated the principles of seeking, self-selection, pacing, individual conferences, skill instruction, sharing and individual record sheets kept by each child. These seven principles were the guiding criteria; materials and methodology were not controlled.

3. **Basal reading program**: The basal program followed the traditional pattern, where the children in each group read a story from their reader-anthology and were instructed as suggested in the teacher's manual. Within the sample, the basal readers used were either the prescribed Copp-Clark series, the Winston series, or the Holt-Rinehart series.
Limitations

The following conditions limited the generalizability of this study.

1. Teacher variable: Children were selected from many class-
classrooms in several schools. The number of teachers
involved with the children on both programs was assumed to
have an equalizing effect. Pertinent data regarding teacher
characteristics was collected in support of this assumption.

2. Nature of deprivation: Criteria for selection (Blishen Occu-
pational Class Scale) did not allow the possibility of speci-
fying characteristics of deprivation. No one or more factors
could be isolated.

3. Sample selection: The study was restricted to disadvantaged
students in grade three in a school district in the lower
mainland of British Columbia, Canada.

4. Existing programs: In this study no effort was made to control
the reading programs used. Basal and individualized approaches
already in existence were compared for effectiveness with dis-
advantaged children. Thus, it was necessary to compare child-
ren who had been instructed by a basal approach for three
years during grades one, two and three with children who had
been instructed by an individualized approach for the one
experimental year during grade three, preceded by two years of
basal approach during grades one and two. Additional factors
such as instructional time, library time, amount of oral reading,
reading required in other subjects were also not controlled.

5. **Measures:** As cautioned by Barbe (4) the standardized tests measure those aspects of reading emphasized by a basal approach. Therefore, measurements taken on an individualized approach by these tests are somewhat spurious.
CHAPTER 2

RELATED RESEARCH

The research pertaining to this study fell into five categories. Three were discussed in Chapter 1. These defined the nature and characteristics of disadvantaged children (see The Disadvantaged Student), the basic characteristics of reading instruction (see The Reading Program), and rationales for using an individualized approach with disadvantaged students (see The Setting).

The present section covered the two remaining areas: the record of reading achievement of disadvantaged students, and a comparison of two reading approaches with which this study was concerned.

Reading Achievement of the Disadvantaged

This section examined literature pertaining to the reading performance of disadvantaged students in elementary school. These studies have found that, of factors which have a detrimental effect upon reading behavior, low socio-economic status was among the most important. Factors related to low socio-economic status, such as limited education of parents, lack of reading stimuli in the home, and limited opportunities for concept and language development were also important. Generally, children from middle or upper socio-economic levels were more likely to read successfully in elementary school than disadvantaged children from lower socio-economic backgrounds.

A study to determine some of the physical, social, emotional
and environmental characteristics of successful readers showed that successful readers were those who score high on the following measures: good health, intelligence, access to reading material, being read to by parents, formal education of parents, and an emotionally integrated home life which encouraged reading (39). The latter four characteristics are those which are typically lacking in a disadvantaged home.

Vilscek concluded that mental age and socio-economic levels were the most powerful independent variables affecting reading success in first grade. The dependent variables of intelligence, reading readiness, physiological, social and emotional maturity, family index of social position and final reading achievement were tested at the end of first grade. Significant differences between the different socio-economic levels for all the dependent variables were found (69).

Hilliard and Troxell, using questionnaires and teachers' case studies, assessed the background of experience and home life situation of kindergarten children. All the children were of average and above average intelligence and were evaluated on nine environmental characteristics. The children forming the rich background group scored higher on such measures as parental occupation, mechanical means of communication in the home, conversational inclinations, number of books in the home, and preschool experiences. The meagre background group scored lower on all measures except average number of siblings, travelling less than one thousand miles, and having fewer than twenty-five books at home. Five tests were administered, testing information and vocabulary ranges, problem-solving and classification abilities, and reading readiness. The children of rich background scored significantly higher on all tests.
Fourteen percent of the children from rich backgrounds, compared to fifty-four percent of those from meagre backgrounds, were assessed as likely to fail in beginning reading. Tested on reading ability in grade 2.4, the rich background children were five months ahead of grade standard, while the poor group was one month below grade standard (32).

As part of a study of social and cognitive variables related to reading achievement, Henderson and Long found high readers to be more socially oriented and more discriminating than poor readers. They concluded that "such a pattern would be consistent with a theory of reading which holds that the process is in part a dialogue in which the reader experiences a continual social interaction with persons both real and imaginary" (31:579), and that it demands the reader to "continually weigh his values, thoughts, and anticipations against those of the author and the characters he directs" (31:580). Thus, experiences involving social interaction, communication and discrimination of self from others would tend to enhance reading ability. More opportunity for varied social experiences is available to the middle or upper class child than the lower class child.

According to Wartenberg, who had had considerable experience teaching the disadvantaged, the characteristics of poor health, poor attitudes, and lack of continuity and stability in learning skills affect academic progress (70). The disadvantaged, more frequently than middle class students, lack attitudes favoring academic achievement, and also frequently change schools, thereby decreasing chances for continuity and stability in learning.

Cohen reported about the reading performance of first, third and
eighth graders in a Manhattan slum school. At the end of first grade all but ten of the 150 students were reading below grade level as measured by an individually administered test. Of the grade three students, approximately 78% were reading below grade level. By eighth grade, one third of the pupils had dropped out of school, and of the remainder 62% were reading below grade level. In the same school district it was found that 30% of the children in grades seven to nine did not even know the alphabet (12:26-29). Here again the record shows the lack of success in reading behavior exhibited by disadvantaged children, growing increasingly worse as the children move through the grades.

According to Riessman, fifty percent of disadvantaged children were retarded in reading, whereas the estimate of reading retardation for all children was only fifteen to twenty percent (52).

**Individualized and Basal Reading Approaches**

Evidence is not lacking, then, to show that disadvantaged children do not succeed in reading under current instructional practices. What is now needed is an approach which will promote more growth in this particular population. As reported above, their deficiencies are in both the cognitive and affective domains. Cognitive deficiencies are in the areas of concept and language development which hinder skills acquisition. Affective deficiencies concern motivation and desire to achieve. Affective attributes are considered by some (25,75) to be less stable and therefore more malleable than cognitive abilities. Zigler contends that changes in the affective state may cause or assist changes in intellectual functioning (25).

An individualized reading approach subscribes to Zigler's theory,
emphasizing the importance of the affective domain as the motivation upon which learning is based. A guiding principle of an individualized approach is to utilize each child’s areas of interest. According to the proponents of an individualized approach, it is this internal motivation, as well as instruction given when and as it is needed for each individual, which accelerates growth in reading ability.

Much research which has compared an individualized approach with basal instruction has supported the contention that interest and desire to read are stronger in children instructed by an individualized approach. Whether this, in turn, enhances reading ability had not yet been unquestionably established. It must be remembered, as Barbe has warned, that “the achievement tests are measuring essentially those skills which are taught in the basal reading program only omitting the more important skills such as ability to select appropriate materials, the frequency itself with which such materials are chosen, and attitudes and interests in reading” (4:217). The latter skills, which he considers “the more important skills”, are the affective skills emphasized by an individualized approach.

The studies cited in this section compared an individualized approach to reading instruction with a basal approach in order to define in which specific areas (cognitive or affective) each program excelled. The studies used readily available standardized reading tests to measure cognitive growth in reading. In addition, those investigators interested in the affective area employed questionnaire, scale, observation and interview techniques to measure growth in reading attitudes. Generally, the findings indicated that affective growth was best promoted by an individualized approach, and that cognitive growth was equally sub-
Several investigators reported that both achievement and attitude improved with individualized instruction. In Huser's study, twelve classes of intermediate grade children were randomly assigned to individualized or basal programs. The students, all of low or middle socio-economic classes, were matched on age and reading achievement, and measured on a reading inventory and the Purdue Attitude Toward Reading Test. Results in achievement were statistically higher for the sixth graders on the individualized program. All the individualized classes had positive attitudes towards reading, whereas negative attitudes were noted for some basal groups (34).

Similar achievement and attitude growth was reported by Adams in a study of first grade students taught by an individualized approach. Significantly greater results were reported for the individualized group over the basal group on the attitude variables and most achievement variables tested. Two standardized tests and three tests developed by the author were used. Adams specified the areas promoted best by the individualized approach as being readiness for reading, sight vocabulary, phonics skills, work study habits, attitude towards reading, pupil interest, and amount of reading done (1).

Another report of more reading done by a group using the self-selection technique than a basal group was made by Talbert and Merritt. A large sample of fifth grade students in Tucson were randomly assigned to either a basal program or a basal plus self-selection program. Range of ability and socio-economic levels were controlled. The students were measure on three scales; reading achievement, attitude scale, and record of in- and ou-of-school reading. Achievement and attitude were not sig-
significantly different between the two instructional approaches. The basal plus self-selection group read a greater number of pages, significant at the .01 level (64).

Similarly, Rothrock's comparison of homogeneous grouping, heterogeneous grouping, and individualized instruction, found that attitude and amount of reading were superior for the individualized group. Fourth and fifth grade children were matched on socio-economic status, size of class, materials used, and experience and training of the teachers, and were randomly assigned to each of the three teaching approaches. Reading comprehension and work study skills were measured by a standardized test. An attitude survey and a record of the number of library books read were used to measure reading interest. Rothrock reported that gains and losses were made on all programs, and that no one program promoted superior growth for all variables measured. However, the individualized approach was consistently second on all achievement measures and significantly better on the attitude measure. Rothrock concluded that all programs successfully promoted achievement with some students but that only the individualized approach promoted growth of attitudes toward reading (53).

Similar findings to the above were reported by Thatcher and Parker. They hypothesized that there should be greater opportunity for development of creativity and problem-solving techniques with fifth and sixth graders on an individualized instructional approach than on a basal approach. The results of statistical analysis of their data showed no significant difference between the basal and the individualized groups on the Covington problem-solving test, difference approaching significance for the individualized group on the Torrance creativity test, and significant difference for the fifth grade individualized students on number of books read (65). Here again, a comparison of amount of reading
favored individualized instruction over basal instruction.

Another study which compared achievement and attitude growth with first grade basal and individualized groups was conducted by Stauffer and Hammond. The achievement of the individualized group was significantly superior to that of the basal group on word reading, paragraph meaning and spelling and approached significance on word study. No difference resulted between the groups on the attitude inventory, but the authors expressed dissatisfaction with this unstandardized instrument. Verbal responses and observed behaviors of the children in the individualized group indicated much greater interest in reading than their counterparts on the basal program (59).

Studying first graders in rural areas, Spencer and Moquin found the individualized approach significantly better to the basal approach for children of all abilities in all the areas tested—six phonics measures, and three comprehension measures. Using subjective assessment they found the individualized group was superior to the basal group in quality, quantity and interest in both written expression and reading (61).

The individualized group in Jenkins' grade two study made significantly greater gains in vocabulary, comprehension and total reading achievement over the basal group. Attitude was not measured in this study, but in another comparison of basal and individualized instruction Jenkins reported that gains were in other aspects of reading. By observing the reading behavior of students in grades three to six, it was found that those in the individualized classrooms exhibited more interest and enjoyment in reading, and had a better developed habit of regular reading (35).

In 1957, Karlin reported on two early projects comparing basal
and individualized reading instruction. A study of grade three pupils which used few controls reported no significant differences in gains of reading ability between the two approaches. In another study, children in grades four to six were matched for reading ability, I.Q., and socio-economic status. Again there were no significant differences in reading achievement, but those on the individualized program were reported by their teachers to exhibit more interest and do more reading on their own (36).

Another early report of findings similar to the above, that children instructed by individualized techniques exhibited greater growth in reading attitude, was a teaching approach instigated in Salt Lake City in 1933. This was a comparative study only in the sense that in previous years the teachers had used the basal approach and during the 1933 teaching year introduced individual pacing, small group and individual activities, and discussion sessions. Differences between pre- and post-tests of achievement after the new approach were greater than the expected gains based on the basal approach. Teachers reported that they and their students were more satisfied with the new approach than the traditional method (74).

Achievement gains favoring an individualized group were found at the end of a three-year period. Grade three students were matched for academic aptitude, reading achievement and socio-economic status, and randomly assigned to basal or individualized classrooms. In grade six, they were retested and the difference in gains for the individualized group was significant. Even greater confidence in the individualized approach was given in the author's conclusion that the individualized group was a less select group. Since the basal group had not promoted
the poorest students into grade six, whereas all of the individualized group had been promoted, the gains were actually higher for the individualized group (3). Although no measure of attitude change was taken, the results outstandingly favored achievement growth with the individualized approach to reading instruction.

In contrast to this lengthy study with large achievement gains was Sartain's comparison over two three-month periods where no difference in achievement was found. In this study five second grade teachers used the basal approach for the first three months and the individualized approach for the next three months. The other five teachers reversed the order. The children's progress was measured at the end of each three month period. The results showed that all children made greater gains during the first three months, regardless of the programs used, and that lower ability children made greater gains with the basal approach than with the individualized approach. He concluded that both programs were equally effective for children of low ability (56).

Similar findings resulted from Lane's comparison of three approaches to the teaching of reading: basal, individualized or language-experience. He found that all groups made exceptional gains on the final achievement measure. There were no significant differences among the programs and he concluded that no one method could be considered superior for all students (41).

In another similar study, sixth graders matched for I.Q. were studied for change in reading skills. One group received regular basal reading instruction, the other group received one-half hour per day of skills instruction and one-half hour per day of free reading time. Reading time was held constant for both groups. No significant difference was reported in performance with reading skills (71).
Opposite findings were reported by Safford after comparing district norms with gains made by children instructed by an individualized approach. The norms, he contended, were the results of children's progress on basal programs during previous years. He found that the individualized children made less gain in reading achievement during a school year than expected gain shown by the norms. He concluded that the absence of Hawthorne effects, because all his testing had been done as part of the regular program, accounted for the difference between his results and those of so many researchers (55).

These studies showed the conflicting nature of achievement gains when researchers compare on approach with another. The short term studies indicated that both basal and individualized approaches were equally effective, but that over a long period, such as reported by Aronow (3), achievement growth would be significantly better by an individualized approach than by a basal approach. Gray, reporting on five decades of studies in reading, concluded that both the individualized and basal approaches had advantages and disadvantages, and that both contributed to the effective development of reading achievement (27). However, effective development of affective growth in reading would seem best accomplished by the individualized approach.

Summary

The research summarized in this chapter indicated that disadvantaged children were not successful readers. Investigation into characteristics of disadvantaged children which cause reading failures has revealed that lack of ambition and interest to succeed in schoolwork is a major contributing factor. Proponents of an individualized approach have stressed that improvement in attitude, by self-selection of reading
materials, is a major motivating force upon which to base skills instruction. Research regarding an individualized approach has concluded that an individualized approach improves attitude toward reading more than does the traditional basal approach.

These results generated the thesis of this study: Would the individualized approach used with disadvantaged students promote more growth in reading attitude and achievement than the basal approach?
CHAPTER 3

PROCEDURES

This study was designed to explore the effects of an individualized approach to reading instruction with disadvantaged children. These two independent concepts, therefore, were specifically defined above (see Chapter 1, Definitions). Using a standardized attitude inventory and a standardized reading test this study answered the following basic questions:

1. Are children's attitude toward reading different as a result of the instructional approaches used, the sex of the students, or an interaction effect of instructional approach with sex?
   This question yielded the following hypotheses:
   H1. Scores on the attitude measure are higher for children instructed by an individualized approach than those instructed by a basal approach.
   H2. Girls' scores on the attitude measure are higher than boys', independent of the instructional approach used.
   H3. There is an interaction effect between the instructional approaches and sex as follows: (1) Scores on the attitude measure are higher for girls in the individualized group than boys in the individualized group and (2) Scores on the attitude measure are higher for boys in the basal group than girls in the basal group.

2. Are vocabulary scores different as a result of instructional approach, sex of the students, or an interaction effect of instructional approach with sex?
This question yielded the following hypotheses:

H4. Scores on the vocabulary measure are higher for children instructed by an individualized approach than children instructed by a basal approach.

H5. Girls' scores on the vocabulary test are higher than boys', independent of instructional approach used.

H6. There is an interaction effect between the instructional approaches and sex as follows: (1) Scores on the vocabulary measure are higher for girls in the individualized group than boys in the individualized group and (2) Scores on the vocabulary measure are higher for boys in the basal group than girls in the basal group.

3. Are comprehension scores different as a result of the instructional approaches used, the sex of the students, or an interaction effect of instructional approach with sex?

This question yielded the following hypotheses:

H7. Scores on the comprehension measure are higher for children instructed by an individualized approach than children instructed by a basal approach.

H8. Girls' scores on the comprehension test are higher than boys', independent of instructional approach used.

H9. There is an interaction effect between the instructional approaches and sex as follows: (1) Scores on the comprehension measure are higher for girls in the individualized group than boys in the individualized group and (2) Scores on the comprehension measure are higher for boys in the basal group than girls in the basal group.
4. Are total reading scores different as a result of the instructional approaches used, the sex of the students, or an interaction effect of instructional approach with sex? (See Appendix B)

This question yielded the following hypotheses:

H10. Scores of total reading are higher for children instructed by an individualized approach than children instructed by a basal approach.

H11. Girls' total reading scores are higher than boys', independent of instructional approach used.

H12. There is an interaction effect between the instructional approaches and sex as follows: (1) Total reading scores are higher for girls in the individualized group than boys in the individualized group and (2) Total reading scores are higher for boys in the basal group than girls in the basal group.

Sample

Subjects were chosen for this study from twelve grade three classrooms in Burnaby, British Columbia, Canada. Classrooms using a basal reader approach and an individualized approach (as defined above) were first located. Through discussions with the teachers, the author ascertained whether the instructional approaches met the criteria. The classrooms were later observed by the author for the same purpose. From the 12 classrooms disadvantaged children were identified according to the criteria. Children who had previously repeated a grade were eliminated. Samples of twenty boys and twenty girls were then randomly selected to be the 4 cells of the experiment. Attrition because of lack of complete data caused the final sample to be slightly reduced in size. The numbers in each cell in the following diagram indicate the final size of
the sample in this study.

<table>
<thead>
<tr>
<th>Instructional Approach</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Individualized</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>16</td>
</tr>
<tr>
<td>Girls</td>
<td>19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instrumentation</th>
</tr>
</thead>
</table>

**Covariate measure**

**Goodenough-Harris Draw a Man Test.** The statistical procedure used in this study was the analysis of covariance. The covariate used was the Goodenough-Harris Draw a Man Test. This test does not measure reading ability or verbal ability, but does correlate highly with individual intelligence tests (30, 62). The test was administered in February by the classroom teachers. It was scored by the researcher and the resulting score of general intelligence was taken as a measure of the student's mental ability. By using this covariate, the influence of intelligence upon reading ability was effectually removed from the data so that the effects of the programs could be analyzed.

**Dependent variables**

**California Achievement Test.** The achievement measure of this study was the California Achievement Test, Reading Subtest, Upper Primary, Form W (67). This test was chosen because of its reliability, ease of administration, and because students in the district of Burnaby had not been previously exposed to this test. Form W was found to be the only form which had been standardized and was therefore suitable for research purposes. Standard scores from subtests A and B yielded a vocabulary
score, from subtests C, D and E a comprehension score, and the average of these two standard scores indicated total reading achievement.

San Diego County Inventory of Reading Attitude. The attitude measure used was the San Diego County Inventory of Reading Attitude (8). This scale had been well tested in the San Diego School District and possesses high reliability (.79) (8).

The attitude and achievement tests were administered in May by the classroom teachers to measure reading performance after one school year of each teaching approach. They were scored by the researcher.

Design

The design for this study was a two-way analysis of covariance with four cells. Data from the intelligence test was used as the covariate because assignment of students to treatments was not possible. The analysis of covariance accounted for the effect of intelligence to allow analysis for program effect on reading attitude and achievement.

The following procedures were used in the analysis:

1. Analysis of covariance was computed for each of the four dependent variables (attitude, vocabulary, comprehension, total reading) using the BMDX64 computer program at the University of British Columbia, Vancouver 9, Canada.

2. The summary table for the analysis of covariance took the following form:

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS&lt;sub&gt;prog&lt;/sub&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS&lt;sub&gt;sex&lt;/sub&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS&lt;sub&gt;prog x sex&lt;/sub&gt;</td>
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<td></td>
</tr>
<tr>
<td>SS&lt;sub&gt;error&lt;/sub&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
$SS_{\text{regr}}$

3. The resulting F-ratios were analyzed for significance at the .05 level.
CHAPTER 4

RESULTS OF THE STUDY

Analysis of the Data

Analysis of covariance

The purpose of this study, to compare attitude to and achievement in reading of disadvantaged children required the use of intact groups rather than randomly selected subjects. Thus, the statistical treatment used to analyze the data was the analysis of covariance, which statistically compensated for initial differences on the covariate measure (13,40).

Analysis of the data showed that the covariate, intelligence, was not a statistically significant factor in this study. Two independent statistical tests confirmed this. In each hypothesis tested, the F-ratio for the covariate was less than the F-ratio of 4.00 which would have been required for significance at the .05 level (Tables 1,3,5,7). Thus, it could be assumed that the groups used in this study were equivalent in intelligence. Correlations computed between the scores on the dependent variables (attitude, vocabulary, comprehension, and total reading) and intelligence were not higher than .22. This indicated that the covariate measure was not strongly related to the dependent variables.

Since the covariate and the dependent variables were not highly related, indicating that the subjects were not statistically different
on the measure of intelligence, analysis of variance would also have been an acceptable statistical treatment. Therefore although analysis of covariance was used, analysis of variance was also computed in order that all possible significant results be discovered (40). By both methods of analysis (analysis of covariance and analysis of variance), identical results were achieved; one of the twelve F-ratios was significant at the .05 level. Therefore all results discussed in this chapter are in terms of the analysis of covariance, with the analysis of variance tables included in Appendix B.

Hypotheses One, Two and Three

These three hypotheses concerned the differences in children's attitude towards reading as a result of either differences in instructional approach (Hypothesis One), differences in sex (Hypothesis Two), or as a result of an interaction between instructional approach and sex (Hypothesis Three). The results are shown in Table 1.

Null hypotheses One and Three were not rejected, since the F-ratios were below the required critical value of 4.00. Null Hypothesis Two was rejected, the F-ratio of 4.822 being significant at the .05 level.

This shows that girls in grade three had different attitudes toward reading than boys, and that girls tended to have a more favorable attitude as shown by their higher mean scores (Table 2). In this study attitude was not affected by the different instructional approaches, nor by an interaction between sex and instructional approach.

Hypotheses Four, Five and Six

These three hypotheses concerned differences in scores of reading vocabulary as a result of either differences in instructional approach
Table 1. Analysis of Variance for the Attitude Measure

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>179.13273</td>
<td>1</td>
<td>179.13273</td>
<td>6.98893</td>
<td></td>
</tr>
<tr>
<td>Prog.</td>
<td>23.98275</td>
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<td>23.98274</td>
<td>0.93570</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex</td>
<td>123.60139</td>
<td>1</td>
<td>123.60138</td>
<td>4.82235</td>
<td>.05</td>
</tr>
<tr>
<td>Sex x Prog.</td>
<td>15.55613</td>
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<td>15.55613</td>
<td>0.60693</td>
<td>n.s.</td>
</tr>
<tr>
<td>Cov.</td>
<td>1.34210</td>
<td>1</td>
<td>1.34210</td>
<td>0.05236</td>
<td>n.s.</td>
</tr>
<tr>
<td>Error</td>
<td>1563.48795</td>
<td>61</td>
<td>25.63094</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Means and Standard Deviations for Each Cell on the Attitude Measure

<table>
<thead>
<tr>
<th>Cell</th>
<th>Name of Group</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>Boys-basal</td>
<td>13.59</td>
<td>5.49</td>
</tr>
<tr>
<td>1-2</td>
<td>Girls-basal</td>
<td>17.29</td>
<td>4.45</td>
</tr>
<tr>
<td>2-1</td>
<td>Boys-individualized</td>
<td>15.87</td>
<td>5.12</td>
</tr>
<tr>
<td>2-2</td>
<td>Girls-individualized</td>
<td>17.68</td>
<td>4.90</td>
</tr>
<tr>
<td>1-1,2-1</td>
<td>Boys</td>
<td>14.70</td>
<td></td>
</tr>
<tr>
<td>1-2,2-2</td>
<td>Girls</td>
<td>17.51</td>
<td></td>
</tr>
</tbody>
</table>
Table 3. Analysis of Variance for the Vocabulary Measure

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>Ppr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1920.08304</td>
<td>1</td>
<td>1920.08301</td>
<td>18.40111</td>
<td></td>
</tr>
<tr>
<td>Prog.</td>
<td>12.80083</td>
<td>1</td>
<td>12.80083</td>
<td>0.12268</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex</td>
<td>67.51327</td>
<td>1</td>
<td>67.51326</td>
<td>0.64701</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex x Prog.</td>
<td>154.57994</td>
<td>1</td>
<td>154.57993</td>
<td>1.48142</td>
<td>.25</td>
</tr>
<tr>
<td>Cov.</td>
<td>71.89854</td>
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<td>71.89854</td>
<td>0.68904</td>
<td>n.s.</td>
</tr>
<tr>
<td>Error</td>
<td>6365.11140</td>
<td>61</td>
<td>104.34605</td>
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</tbody>
</table>

Table 4. Means and Standard Deviations for Each Cell on the Vocabulary Measure

<table>
<thead>
<tr>
<th>Cell</th>
<th>Name of Group</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>Boys-basal</td>
<td>58.76</td>
<td>7.95</td>
</tr>
<tr>
<td>1-2</td>
<td>Girls-basal</td>
<td>57.36</td>
<td>12.23</td>
</tr>
<tr>
<td>2-1</td>
<td>Boys-individualized</td>
<td>55.00</td>
<td>10.87</td>
</tr>
<tr>
<td>2-2</td>
<td>Girls-individualized</td>
<td>60.47</td>
<td>9.73</td>
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</tbody>
</table>

| 1-1,2-1| Boys  | 56.94 |
| 1-2,2-2| Girls | 59.15 |
(Hypothesis Four), differences in sex (Hypothesis Five), or as a result of an interaction between instructional approach and sex (Hypothesis Six).

The results, shown in Table 3, indicated that there were no significant differences on the vocabulary measure between sexes or instructional approaches, nor did there exist an interaction effect between sex and instructional approach. All the F-ratios were below the required value of 4.00. Therefore all three null hypotheses were accepted.

In Table 4, it can be seen that girls taught by the individualized approach scored highest on the vocabulary measure, and that boys on the basal program also received high scores. This result tended to deny Hypothesis Six, that there was no interaction between program and sex, and was significant beyond the .25 level. Although this was not beyond the critical value for this study, it did indicate some interaction effect.

**Hypotheses Seven, Eight, and Nine**

These three hypotheses concerned the differences in children's scores of reading comprehension as a result of either differences in instructional approach (Hypothesis Seven), differences in sex (Hypothesis Eight), or as a result of an interaction between instructional approach and sex (Hypothesis Nine).

The results of the statistical analysis, shown in Table 5, indicated acceptance of the three null hypotheses; that no difference in comprehension scores occurred as a result of the three variables tested.

Hypothesis Eight, which was significant at the .25 level, indicated a trend for girls in both groups to score higher than boys on the measure of reading comprehension. This trend is also visible in Table 6, where group means are shown. Thus, differences in reading
### Table 5. Analysis of Variance for the Comprehension Measure

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>pr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>971.58802</td>
<td>1</td>
<td>971.58789</td>
<td>10.40906</td>
<td></td>
</tr>
<tr>
<td>Prog.</td>
<td>6.38815</td>
<td>1</td>
<td>6.38815</td>
<td>0.06844</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex</td>
<td>189.64772</td>
<td>1</td>
<td>189.6472</td>
<td>2.03178</td>
<td>.25</td>
</tr>
<tr>
<td>Sex x Prog.</td>
<td>6.12602</td>
<td>1</td>
<td>6.12602</td>
<td>0.06563</td>
<td>n.s.</td>
</tr>
<tr>
<td>Cov.</td>
<td>230.32092</td>
<td>1</td>
<td>230.32092</td>
<td>2.46753</td>
<td>.25</td>
</tr>
</tbody>
</table>

### Table 6. Means and Standard Deviations for the Comprehension Measure

<table>
<thead>
<tr>
<th>Cell</th>
<th>Group</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>Boys-basal</td>
<td>49.29</td>
<td>9.49</td>
</tr>
<tr>
<td>1-2</td>
<td>Girls-basal</td>
<td>51.50</td>
<td>10.54</td>
</tr>
<tr>
<td>2-1</td>
<td>Boys-individualized</td>
<td>49.80</td>
<td>9.83</td>
</tr>
<tr>
<td>2-2</td>
<td>Girls-individualized</td>
<td>54.42</td>
<td>9.40</td>
</tr>
<tr>
<td>1-1,2-1</td>
<td>Boys</td>
<td>49.23</td>
<td></td>
</tr>
<tr>
<td>1-2,2-2</td>
<td>Girls</td>
<td>53.18</td>
<td></td>
</tr>
</tbody>
</table>
Table 7. Analysis of Variance for the Total Reading Measure

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>pr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1263.78184</td>
<td>1</td>
<td>1263.78184</td>
<td>14.37556</td>
<td></td>
</tr>
<tr>
<td>Prog.</td>
<td>3.17534</td>
<td>1</td>
<td>3.17534</td>
<td>0.03612</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex</td>
<td>126.07279</td>
<td>1</td>
<td>126.07278</td>
<td>1.43408</td>
<td>.25</td>
</tr>
<tr>
<td>Prog. x Sex</td>
<td>72.75742</td>
<td>1</td>
<td>72.75742</td>
<td>0.82762</td>
<td>n.s.</td>
</tr>
<tr>
<td>Cov.</td>
<td>163.08302</td>
<td>1</td>
<td>163.08302</td>
<td>1.85507</td>
<td>.25</td>
</tr>
<tr>
<td>Error</td>
<td>5362.62449</td>
<td>61</td>
<td>87.91182</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8. Means and Standard Deviations for the Total Reading Achievement Measure

<table>
<thead>
<tr>
<th>Cell</th>
<th>Group</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>Boys-basal</td>
<td>52.71</td>
<td>8.45</td>
</tr>
<tr>
<td>1-2</td>
<td>Girls-basal</td>
<td>52.86</td>
<td>11.04</td>
</tr>
<tr>
<td>2-1</td>
<td>Boys-individualized</td>
<td>51.44</td>
<td>9.86</td>
</tr>
<tr>
<td>2-2</td>
<td>Girls-individualized</td>
<td>56.84</td>
<td>8.62</td>
</tr>
<tr>
<td>1-1,2-1</td>
<td>Boys</td>
<td>52.09</td>
<td></td>
</tr>
<tr>
<td>1-2,2-2</td>
<td>Girls</td>
<td>55.15</td>
<td></td>
</tr>
</tbody>
</table>
comprehension scores seem to be caused by sex differences, favoring the girls.

Hypotheses Ten, Eleven and Twelve

These three hypotheses concerned differences in total reading ability (the sum of vocabulary and comprehension scores as measured by the California Achievement Test) as a result of either differences in instructional approach (Hypothesis Ten), differences in sex (Hypothesis Eleven), or as a result of an interaction between instructional approach and sex (Hypothesis Twelve).

As can be seen from Table 7, no differences were significant at the .05 level. Therefore, the three null hypotheses were accepted. Neither instructional approach, sex, nor interaction between approach and sex caused differences in total reading ability.

At the .25 level of significance, however, there was a trend for girls to score higher than boys, regardless of the instructional approach used. (See mean scores in Table 8). Thus, Hypothesis Eleven, that sex did not affect total reading ability, was not proved conclusively.

Interpretation of the Analysis

The results of this study showed that girls had a better attitude towards reading than boys as measured by the San Diego County Inventory of Reading Attitude. All the results, although not highly significant (.25 and greater) indicated a trend for girls to receive higher scores on all measures of reading attitude and achievement. This was independent of intelligence, even though girls on the individualized program had the highest mean I.Q. scores and girls on the
basal program the lowest (Table 9), since the statistical treatment removed the effects due to intelligence. The finding, that girls tended to achieve higher on measures of reading ability, supported previous research (7,29,61,63).

However, the main thesis of this study, that for disadvantaged children, an individualized approach to reading instruction would result in greater attitude and achievement growth than a basal approach, was not confirmed. There were no significant differences between instructional approaches for any of the dependent variables tested. That is, for grade three disadvantaged children in this study both instructional approaches were equally effective, but more effective for girls than for boys.

The following findings were not included in the original questions to be answered by this study. Following the advice of Kerlinger (40:621) to seek out and study unpredicted relations in the data, additional analyses were performed on the data. None of the findings were statistically significant but they indicated trends and relative placement of this population of disadvantaged children. Further research would be needed to substantiate the findings.

Prediction of reading achievement scores from I.Q. was possible for the boys' groups only. Table 10 shows the correlations between intelligence and the four dependent variables to be positive for boys, although not highly so (the mean correlation is .40) whereas there is no correlation for the girls' scores.

All variables tested were accompanied by stanine scores. Table 11 shows the results of converting the scores from the present sample into stanine scores. It shows how the children in this sample compared to the normative population; generally equal on reading comprehension and
Table 9. Means and Standard Deviations of the I.Q. Test

<table>
<thead>
<tr>
<th>Cell</th>
<th>Group</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>Boys-basal</td>
<td>96.94</td>
<td>10.44</td>
</tr>
<tr>
<td>1-2</td>
<td>Girls-basal</td>
<td>93.50</td>
<td>10.03</td>
</tr>
<tr>
<td>2-1</td>
<td>Boys-individualized</td>
<td>99.81</td>
<td>11.35</td>
</tr>
<tr>
<td>2-2</td>
<td>Girls-individualized</td>
<td>103.20</td>
<td>12.90</td>
</tr>
</tbody>
</table>

Table 10. Correlations between I.Q. and Each Dependent Variable

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Cells*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-1</td>
</tr>
<tr>
<td>Attitude</td>
<td>-.31</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>.48</td>
</tr>
<tr>
<td>Comprehension</td>
<td>.58</td>
</tr>
<tr>
<td>General Reading</td>
<td>.57</td>
</tr>
</tbody>
</table>

* Cell 1-1 is the group of boys taught by the basal approach.  
* Cell 1-2 is the group of girls taught by the basal approach.  
* Cell 2-1 is the group of boys taught by the individualized approach.  
* Cell 2-2 is the group of girls taught by the individualized approach.
general reading ability, higher on the vocabulary measure, but lower on attitude toward reading. Percentile ranks for the achievement variables (Table 12), also showed similar relative placement of the sample tested compared to the normative group.

In summary, the results of this study showed that girls generally tended to have higher achievement in reading and definitely had a better attitude towards reading than boys. No difference in achievement or attitude was strictly the result of the teaching methodology employed, although the combination of the individualized approach with girls was somewhat superior to other combinations of program and sex. Percentile and stanine scores comparing this select sample of disadvantaged students with a more representative group showed this sample to achieve at or near the mean of the larger group. We may thus conclude that "disadvantaged" in this case applied to background factors only, not school performance.

**Teacher Variable**

Since the teacher variable was uncontrolled in this study, data was collected from the teachers on four measures. These were age, teaching certificate held which, for the purpose of analysis, was converted into the number of years required for such a certificate, total number of years of teaching experience, and number of years experience with the reading approach used at the time of this study. The mean results are summarized in Table 13.

The teachers were all female, and similar on the characteristics tested. The small differences between the means are not significant at the .05 level, indicating that the teachers of each approach were equivalent in these characteristics.
Table 11. Stanine Scores of Each Dependent Variable

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>1-1</th>
<th>1-2</th>
<th>2-1</th>
<th>2-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Comprehension</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>General Reading</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

*Note- for names of each cell, refer to note accompanying Table 10.

---

Table 12. Percentile Scores for the Achievement Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1-1</th>
<th>1-2</th>
<th>2-1</th>
<th>2-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary</td>
<td>79-82</td>
<td>76-79</td>
<td>69</td>
<td>84-86</td>
</tr>
<tr>
<td>Comprehension</td>
<td>46-50</td>
<td>54-58</td>
<td>46-50</td>
<td>66-69</td>
</tr>
<tr>
<td>Total Reading</td>
<td>53-62</td>
<td>58-62</td>
<td>54-58</td>
<td>73-76</td>
</tr>
</tbody>
</table>

*Note- for names of each cell, refer to note accompanying Table 10.
Table 13. Means, Standard Deviations, and F-score of Teachers

<table>
<thead>
<tr>
<th>Program</th>
<th>Age</th>
<th>Certification</th>
<th>Total Experience</th>
<th>Reading Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basal Mean</td>
<td>31.43</td>
<td>3.57</td>
<td>5.00</td>
<td>4.86</td>
</tr>
<tr>
<td>S.D.</td>
<td>12.77</td>
<td>1.40</td>
<td>3.27</td>
<td>3.29</td>
</tr>
<tr>
<td>Individuated Mean</td>
<td>27.60</td>
<td>3.20</td>
<td>5.20</td>
<td>2.20</td>
</tr>
<tr>
<td>S.D.</td>
<td>3.29</td>
<td>.45</td>
<td>2.17</td>
<td>.84</td>
</tr>
<tr>
<td>Difference</td>
<td>3.83</td>
<td>.37</td>
<td>-.20</td>
<td>2.66</td>
</tr>
</tbody>
</table>

\[ F = 2.636 \text{ n.s.} \]
CHAPTER 5

SUMMARY, CONCLUSIONS AND IMPLICATIONS

Summary

This study compared reading progress made by a restricted sample of grade three children instructed by either a basal or an individualized approach.

The two instructional approaches were defined to ensure that all classrooms met the criteria for each program. The basal approach was one where the teacher followed the suggestions in the teacher's manual for all reading instruction. Each short story in the reader was presented in the traditional pattern: discussion before reading occurred to provide motivation and purposes for reading, new vocabulary was taught, the story was read silently, written questions were answered, the story was discussed and parts read orally. The individualized approach was defined as one which incorporated the following: each child selected his own reading material, individual conferences were held, instruction in skills took place as needed by each child, sharing sessions were held, and individual record sheets were kept by each child.

The sample was labelled "disadvantaged" and defined by the father's occupation. The Blishen Occupational Scale (6) delineated seven occupational levels by the two criteria of average income attained and amount of education required by each job. Classes five to seven
were used in this study as being the lower socio-economic levels. That is, homes where the father's occupation falls in classes five through seven were taken as being those homes which usually lack the stimulating environments leading to value and regard for education.

Children were selected who met the criteria of diadvantagement, and were presently enrolled in grade three individualized or basal classrooms in the district of Burnaby, British Columbia, Canada. The children were placed in the four cells of the experimental design depending on their sex, and instructional approach. Although there were originally twenty subjects per cell, attrition through loss of subjects or incomplete data, resulted in approximately sixteen subjects per cell for whom all data was available.

In February each subject was given the Goodenough-Harris Drawing Test (30), a non-verbal measure of intellectual ability. In May, each subject was tested on the San Diego Inventory of Reading Attitude and the California Reading Test, Upper Primary, Form W (67). The former gave a score indicating attitude towards reading, the latter gave separate vocabulary and comprehension scores which when summed gave a total reading ability score.

The four dependent variables—attitude, vocabulary, comprehension and total reading—were analyzed over the four cells. Analysis of covariance removed effects due to intelligence, and three basic questions were answered about each dependent variable.

These questions were:

1. Do significant differences in scores on the dependent variables exist because of the difference between the basal and individualized instructional approaches?
2. Do the scores on the dependent variables vary significantly between boys and girls?

3. Does an interaction effect of instructional approach and sex cause difference in scores on the dependent variables?

Of the twelve hypotheses which were tested, one proved to be significant at the .05 level. This was Hypothesis Two, that different attitudes to reading occurred because of sex, with the attitude of the girls being superior to that of the boys. Trends, significant at the .25 level, indicated that girls received higher scores on achievement measures, and that boys taught by the basal approach and girls taught by the individualized approach received better results on the vocabulary test.

Conclusions

The results of this study showed that a significant difference existed between boys and girls with respect to their attitude towards reading. The study was not able to show other reasons for this difference in attitude; either because of different classroom procedure, different reading materials provided, amount of reading done outside school. Many associated factors were also not controlled (time spent in reading instruction, library, teacher reading, and instructions reading time provided, amount of reading done in other subjects at school or for pleasure outside of school). The study looked instead at the effectiveness of two current instructional procedures with disadvantaged children.

Although significant results occurred only in the area of attitude noted above, consistent trends occurred which indicated a pattern that could be investigated further. On achievement measures, boys'
scores consistently correlated with their intelligence scores, whereas girls' scores did not correlate at all. However, girls' scores were consistently higher than those of the boys. No trends were evident between the two programs, indicating that the basal and the individualized approaches to reading instruction were both equally effective with disadvantaged children, but slightly more effective with girls than with boys.

Stanine and percentile scores for the sample tended to consistently fall close to the mean of the standardization sample. This led to two possible conclusions; either the assumption of low socio-economic status being associated with educational deprivation was false, or existing deficiencies had been overcome by the time the children reached grade three. Investigations into specific characteristics of the disadvantaged child, rather than socio-economic status, would reveal which of these is the case. A more sensitive instrument for identifying disadvantaged children than the scale used in this study could be employed.

The results of this study corresponded to those of Karlin, Rothrock, Lane, Wilson and Harrison, Talbert and Merritt, Sartain, and Gray, cited in Chapter 2, that there was no significant difference in reading achievement by either approach. It contradicted the results of Karlin, Rothrock, Adams, and Huser, also cited in Chapter 2, that children on individualized reading programs have better attitudes towards reading.

From this study it can be concluded that if low socio-economic status, as defined by parental occupation, is associated with low educational stimulation, as was assumed by this author, then neither instructional approach tested produces superior growth in reading attitude or
achievement. Both instructional approaches are equally effective in meeting national achievement norms. With disadvantaged students, as defined in this study, I.Q. is also not a factor related to achievement or attitude, but sex and attitude are related.

Implications

The results of this study raised several questions which remained unanswered. First, as noted above, research had established that no special approach to reading instruction was consistently superior in promoting better attitudes to reading or achievement in reading. Thus, the methodology issue remained unchanged, that no one method was superior with all students, or superior with one sex rather than the other, or with different levels of intelligence. It would seem, then, that certain approaches might produce better results with some students but that the relationship would have to be defined by other factors than sex or intelligence. The question remained unanswered: Which approach is best for which type of student?

Second, a sex difference was evident both in the attitude and achievement areas, favoring girls in both cases. Did this fact mean that the school curriculum catered to the girls in the materials used, both trade and instructional, and methodology employed? Or did it mean that grade three children exhibited different sexual roles, such as active versus sedentary interests, reacting against or obeying social expectancies, which affected reading behavior?

Third, a consistent trend appeared when I.Q. was correlated with the achievement measures. Reading achievement scores were related to I.Q. for the boys' groups but were unrelated for the girls'. Again, did classroom materials and methodology influence this difference?
Were there some other factors (conceptual, affective, social, classroom) which caused differences between boys and girls in the relationship of I.Q. to reading achievement?

**Suggestions for Further Research**

In order to understand why differences in reading attitude and achievement occurred, this writer sees the major question as being not one of different approaches to instruction, nor sex differences, nor I.Q. differences. Rather some other factors, inherent in the student, influence his functioning during the reading act.

Since reading behavior is a conceptual process, some of these other factors must exist in the cognitive domain. Therefore, research into the relationship of various styles of cognitive functioning to the reading process would seem to be of major importance. This writer recognizes that current investigations are concerned with both cognitive and affective factors affecting reading behavior. It is beyond the scope of this study to do more than emphasize the need for further research into these factors.

The following suggestions focus on cognitive and affective factors. The suggestions were based on the outcome of this study, namely, the recognition that important variables affecting reading performance were not program or sex differences, but might be differences in the cognitive and affective fields. Recommended for further research are:

1. Experiments using cognitive style as variables seek to determine the effectiveness of various instructional approaches with particular styles of learning.
2. that materials available for grade three students be investigated to ascertain the appeal for both boys and girls, in order to discover why girls have a more positive attitude towards reading than boys,

3. that the appeal of various instructional approaches be investigated, with variables other than sex and intelligence being of primary concern,

4. that investigation occur into the factors associated with socio-economic status, which influence reading behavior, such as, reading materials available in the home, models of reading behavior available, parental and peer values about the reading process, and social, educational and conceptual attributes of the reader; and that sensitive instruments to measure them be developed,

5. that instruments measuring attitude toward reading, in specific areas as well as in general, be refined,

6. that replication of the present study occur with stricter controls over associated factors such as, instructional time, recreational reading time, amount of library material and time available, oral reading by the teacher, independent reading required in other subjects,

7. and that replication of the present study occur over a longer time period, particularly where the individualized approach was consistently used from first grade, as is common with the basal approach.
WORKS CITED


34. Huser, Mary K. "Reading and More Reading," Elementary School Journal, 7 (1967), 378-382.


59. ______, and Hammond, D. "Effectiveness of a Language Arts and Basic Reader Approach to First Grade Reading Instruction," U.S.O.E. Project No. 2679, 1965.


APPENDIX A

Occupational Class Scale
constructed by B.R. Blishen

Two criterion were used in constructing this scale, the average years of schooling possessed by the worker, and the average annual income earned, based on Canadian data. The scale was constructed in 1951, and updated and used in the 1960 Canadian census. Occupations are grouped into seven classes, ranging from professional in Class 1, through skilled laborers, unskilled laborers to frequently unemployed or seasonal workers in class 7.

Parental education and income are factors which help define a disadvantaged child. The factors were combined in this scale. Disadvantaged children in this study were those whose parents held occupations listed in Classes 5, 6, and 7, shown below, or did not hold jobs at all.

Class 5

Patternmakers
Compositors
Inspectors, metal
Paper-makers
Photographers
Policemen
Office clerks
Mechanics, airplane
Inspectors, metal products
Music teachers
Firemen, fire department
Pressmen and plate printers
Telephone operators
Electricians
Machinists, metal

Welders
Mechanics N.E.S.
Mechanics, railroad
Fitters, metal
Cutters, textile goods
Millmen
Wire drawers
Core makers
Riggers
Sheetmetal workers
Shipping clerks
Logging foremen
Labellers
Nurses, in training
Meat canners
Farm managers
Plasterers
Textile inspectors
Other pulp and paper workers
Linemen and servicemen
Baggagemen
Rolling millmen
Auctioneers
Inspectors and graders
Farmers
Photographic occupations, N.E.S.
Collectors
Dental mechanics
Sulphite cookers
Wire drawers
Other ranks, armed forces
Electroplaters
 Plumbers
Motormen
Quarriers
Machine operators, metal
Paint makers
Filers
Upholsterers
Knitters
Wood inspectors
Barbers
Tobacco products workers
Furnacemen
Furriers
Brothers
Paper box makers
Other bookbinding workers, N.E.S.
Coremakers
Vulcanizers
Liquor and beverage workers
Polishers, metal
Engineering officers (on ships)
Transportation inspectors
Mechanics, motor
Textile inspectors
Cabinet and furniture makers
Loom fixers
Weavers, textile
Butchers
Miners
Assemblers, electrical equipment
Operators, electric street railway
Stationary engineers
Bookbinders
Tire and tube builders
Canvassers
Telephone operators
Switchmen and signalmen
Opticians
Jewellers and watchmakers
Personal service workers
Assemblers, electrical equip.
Tire and tube builders
Millwrights
Religious workers, N.E.S.
Fitters, metal
Milliners
Construction foremen
Opticians
Bus drivers
Heat treaters
Photographic workers, N.E.S.
Machine operators, metal
Sales clerks
Hoistmen, cranemen
Transportation, storage, communication workers

Class 6

Winders and warpers
Carders and drawing frame workers
Moulders, metal
Tailoresses
Textile inspectors
Timbermen
Oilers, power plant
Paper box makers
Waiters
Sewers and sewing machine operators
Inspectors N.E.S., graders
Postmen
Nurses, practical
Cutters, textile goods
Elevator tenders
Potmen
Prospectors
Liquor and beverage workers
Kiln burners
Carpenters
Forest rangers
Lock keepers, canalmen
Wood turners
Brick and stone masons
Bakers
Cement and concrete finishers
Dressmakers and seamstresses
Box and basket makers
Coopers
Harness and saddle makers
Construction machine operators
Painters and decorators
Porters
Millers
Bleachers and dyers
Tanners
Rubber shoe makers
Spinners

Labourers, mines and quarries
Textile inspectors
Enitters
Guards
Glove makers
Cutters, leather
Firemen, on ships
Laundners
Sailors
Nuns
Labellers
Service station attendents
Hat and cap makers
Spinners and twistiers
Rubber shoe makers
Blacksmiths
Weavers
Chauffeur
Boiler foremen

Class 7

Cooks
Laundresses, cleaners
Sectionmen and trackmen
Sawyers:
Longshoremen
Labourers
Cooks
Ushers
Housekeepers and matrons
Newsboys
Farm labourers
Charworkers and cleaners
Bootblacks
Hunters and trappers

Janitors
Dyers
Paper bag, box, and envelope makers
Waitresses
Glove makers
Hawkers
Janitors
Hotel cafe and household workers
Guides
Lumbermen
Fishermen
Fish canners, curers and packers
APPENDIX B

The scores from the vocabulary and comprehension subtests were combined to give one score of total reading ability. Analysis of this new score was not expected to produce more trends than those discovered in the separate treatments of vocabulary and comprehension. Indeed, trends apparent in the separate subtests may well be negated by the combining of the scores. However, this standard score of total reading ability is included with the achievement test, thereby suggesting its use to classroom teachers. For this reason, it was felt that the additional analysis of the total reading score was important to discover whether differences did occur between the separate vocabulary and comprehension scores and the total reading score.
Table 14. Analysis of Variance for the Attitude Measure

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>Pr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>16918.94149</td>
<td>1</td>
<td>16918.94141</td>
<td>670.34424</td>
<td></td>
</tr>
<tr>
<td>Prog.</td>
<td>29.38511</td>
<td>1</td>
<td>29.38510</td>
<td>1.16426</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex</td>
<td>123.57639</td>
<td>1</td>
<td>123.57639</td>
<td>4.89621*</td>
<td>.05</td>
</tr>
<tr>
<td>Prog. x sex</td>
<td>14.53054</td>
<td>1</td>
<td>14.53054</td>
<td>0.57571</td>
<td>n.s.</td>
</tr>
<tr>
<td>Error</td>
<td>1564.83005</td>
<td>62</td>
<td>25.23918</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 15. Analysis of Variance for the Vocabulary Measure

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>Pr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>218582.14421</td>
<td>1</td>
<td>218582.14421</td>
<td>2105.34033</td>
<td></td>
</tr>
<tr>
<td>Prog.</td>
<td>1.71208</td>
<td>1</td>
<td>1.71208</td>
<td>0.01649</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex</td>
<td>67.37751</td>
<td>1</td>
<td>67.37750</td>
<td>0.64897</td>
<td>n.s.</td>
</tr>
<tr>
<td>Prog. x sex</td>
<td>192.96949</td>
<td>1</td>
<td>192.96948</td>
<td>1.85864</td>
<td>.25</td>
</tr>
<tr>
<td>Error</td>
<td>6437.00995</td>
<td>62</td>
<td>103.82269</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Sum of Squares</td>
<td>D.F.</td>
<td>Mean Square</td>
<td>F</td>
<td>pr.</td>
</tr>
<tr>
<td>------------</td>
<td>----------------</td>
<td>------</td>
<td>-------------</td>
<td>-----------</td>
<td>------</td>
</tr>
<tr>
<td>Mean</td>
<td>171308.64455</td>
<td>1</td>
<td>171308.64455</td>
<td>1792.86963</td>
<td></td>
</tr>
<tr>
<td>Prog.</td>
<td>48.20905</td>
<td>1</td>
<td>48.20905</td>
<td>0.50454</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex</td>
<td>189.24048</td>
<td>1</td>
<td>189.24046</td>
<td>1.98054</td>
<td>.25</td>
</tr>
<tr>
<td>Prog. x sex</td>
<td>23.52571</td>
<td>1</td>
<td>23.52570</td>
<td>0.24621</td>
<td>n.s.</td>
</tr>
<tr>
<td>Error</td>
<td>5924.09849</td>
<td>62</td>
<td>95.54996</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 17. Analysis of Variance for the Total Reading Measure

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>pr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>186355.79451</td>
<td>1</td>
<td>18635.79451</td>
<td>2090.96436</td>
<td></td>
</tr>
<tr>
<td>Prog.</td>
<td>30.07456</td>
<td>1</td>
<td>30.07456</td>
<td>0.33745</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex</td>
<td>125.79339</td>
<td>1</td>
<td>125.79339</td>
<td>1.41144</td>
<td>.25</td>
</tr>
<tr>
<td>Prog. x sex</td>
<td>112.46726</td>
<td>1</td>
<td>112.46726</td>
<td>1.26191</td>
<td>n.s.</td>
</tr>
<tr>
<td>Error</td>
<td>5525.70751</td>
<td>62</td>
<td>89.12430</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D

Since the data analysis revealed little correlation between I.Q. and reading achievement, it was suspected that achievement might correlate with the other factor employed in this study, namely attitude to reading. Therefore, a correlation matrix was computed for each cell between attitude and general achievement scores. The results are recorded in Table 18.

Table 18. Correlations between Achievement and Attitude

<table>
<thead>
<tr>
<th>Instructional Approach</th>
<th>Indiv.</th>
<th>Basal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>-.05</td>
<td>.06</td>
</tr>
<tr>
<td>Girls</td>
<td>-.04</td>
<td>-.64</td>
</tr>
</tbody>
</table>

There was no correlation for three of the groups and a negative correlation of -.64 for one group. This group was composed of girls instructed by the basal approach. This result indicated that girls instructed by a basal approach who read poorly had a more positive attitude than those who read well. With boys on the basal program and all students in the individualized group there was no relationship.

The correlations among the dependent variables for all subjects were

\[ \gamma(\text{comprehension, vocabulary}) = .6674 \]
\[ \gamma(\text{comprehension, attitude}) = -.0887 \]
\[ \gamma(\text{vocabulary, attitude}) = -.0659 \]