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READING PROGRAM FOR SELECTED IOWA SCHOOLS.

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AN EVALUATION OF
THE ELEMENTARY AND SECONDARY EDUCATION ACT'S
TITLE I REMEDIAL READING PROGRAM FOR
SELECTED IOWA SCHOOLS

by

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INTRODUCTION

Since the passage of the Elementary and Secondary Education Act of 1965, local school districts have had the task of developing and instituting self-conceived programs which would effectively combat the problems of educationally deprived children. The same Act included a provision for the evaluation of the school's programs. It is quickly becoming passe for educators to say, "I think" or "I believe". Instead pressures of modern education are demanding the more objective, scientific response, "According to all the reliable information, it appears." An inherent part of the philosophy of Title I programs was that failures would be removed or disregarded and likewise successes would be increased or strengthened. Both the National Advisory Council on the Disadvantaged Children and the various Title I Divisions of the State Department have been charged with the dissemination of information which would proliferate successful programs.

Statement of the Problem

The problem of this investigation was to determine the effectiveness of Title I remedial reading teachers in their attempts to increase the reading achievement level of the children in their program.

More specifically it was to test the following null hypotheses.

Null hypothesis 1: There will be no significant difference in the reading achievement of students involved in Title I reading classes and those who are not, when initial differences between the groups have been adjusted with respect to previous reading achievements (1968 paragraph meaning section of Iowa Basic Skills), intellectual aptitudes (Lorge-Thorndike group intelligence test), self-concepts (Piers-Harris test on the self-concept), and the family reading environments (self-devised category).

Null hypothesis 2: There will be no significant difference in the reading achievement of the Title I and non-Title I students when sex is considered and when initial differences between the groups have been adjusted with respect to previous reading achievements (1968 paragraph meaning section of Iowa Basic Skills), intellectual aptitudes (Lorge-Thorndike group intelligence tests), self-concepts (Piers-Harris test on the self-concept) and the family reading environments (self-devised category).

Null hypothesis 3: There will be no significant difference in the reading achievement when the interaction between Title I and non-Title I groups and sex is considered and when initial differences between the groups have been adjusted with respect to previous reading achievements (1968 paragraph meaning section of Iowa Basic Skills), intellectual aptitudes (Lorge-Thorndike group intelligence tests), self-concepts (Piers-Harris test on the self-concept), and the family reading environments (self-devised category).

Purpose of the Study

The evaluation procedures used by local school districts to determine the success or failure of programs instituted under the auspices of the Elementary and Secondary Education Act have been, at best, questionable. It would appear to be very difficult to objectively judge the success or failure of any program, even after a careful scrutiny of the State's Title I Division evaluation report. The primary purpose of this research was to objectively evaluate the Title I reading program by using a statistical approach.

A secondary purpose of this paper was to provide a statistical model which school districts in Iowa could use in their future attempts to evaluate Title I reading programs.

Definition of Terms

In order to clarify the meanings of the various terms used in this study, the following definitions were made:

Title I - This is the first section of the Elementary and Secondary Education Act of 1965. This section provides categorical aid for educationally disadvantaged children in local school districts.

Educationally disadvantaged - This term refers to any students, K-12 (including drop-outs) who are, regardless of the families' financial condition, behind grade level in any aspect of the curriculum.

Remedial reading - This is sometimes referred to as special or developmental reading. In this respect it referred to any child who was reading below grade level and who received instruction from a teacher other than the child's regular classroom teacher.

Sources of Data

The data pertinent to this study consisted of objective test scores and evaluative materials available in the children's permanent school folders. The data consisted of the following:

1. The Iowa Tests of Basic Skills. The percentile scores (state norms) of the Paragraph Meaning Section for the school years 1966-67 and 1968-69. The reliability coefficients were very high. They ranged from .84 to .96 for the major tests and from .73 to .93 for the subtests. The composite reliabilities for the whole test ranged from .97 to .98 for the different grades. The test of reading comprehension was designed to evaluate the specific comprehension skills involved in grouping details and purpose, analyzing organization and evaluating a reading selection.
2. The Lorge-Thorndike Intelligence Test. (Verbal and non-verbal Battery, Level 3). The standardization population consisted of 136,000 children in 44 communities in 22 states. Alternate forms correlated rather well (.766, .90) at all levels, but the verbal scales for levels 3, 4 and 5

yielded the highest coefficients, namely: .90, .86, and .86. The Lorge-Thorndike was correlated with other intelligence tests. Forty-six of the 52 coefficients were .60 or higher.

3. Piers-Harris Children's Self-Concept Scale. (The Way I Feel about Myself). (See Appendix B).

Reliability - to judge the homogeneity of the test, the Kuder-Richardson Formula 21 was employed on grade levels 3-10 with resulting coefficients ranging from .78 to .93. As a check, the Spearman-Brown odd-even formula for grades 6 and 10 resulted with coefficients of .90 and .87 respectively.

To check stability, a retest was given to grades 3, 6 and 10. This resulted in coefficients of .70, .71, and .72. To determine the validity a comparison of the Piers-Harris scores with those of Lipsetts' Children's Self-Concept Scale (1958) depicted a correlation of .68.

4. Family Reading Environment. (See Appendix A). This scale, devised locally by the researcher with consultation from Dr. Ronald Powers, Department Head of Family Environment at Iowa State University and Dr. Richard Manatt,

Associate Professor of Educational Administration at Iowa State University. The scale consisted of five categories. Each category was delimited by descriptive statements.

Delimitations of the Study

The scope of this investigation was confined to 176 fifth grade students taken from nine school districts (Albia Community School District, Moravia Community School District, Davis County Community School District, Centerville Community School District, Prairie City Community School District, Colfax Community School District, New Monroe Community School District, Cedar Rapids Community School District, and Iowa Valley Community School District) in Iowa. The students involved in this study represent a sampling of the fifth grade students in the preceding schools. The criterion used in this study was the Reading Comprehension Section of the Iowa Basic Skills taken in September of 1968.

One half of the students in this sample was enrolled in Title I reading classes in the various school districts during the 1967-68 school year. Their counterparts (control group) were selected at random. The experimental group left the self-contained classroom for 30-50 minutes each day in order to receive Title I reading instruction. The control group remained in the self-contained classroom throughout the school day. Consequently, the results of this study referred only to the students involved.

This investigation was not concerned with attitudinal changes or social adjustments that might have occurred with the students.

Although many of the Title I students had been previously and later continued to be involved in Title I reading classes, this study period covered only the 1967-68 school year.

Organization of the Study

This study is divided into five chapters. The first chapter includes the general introduction to the study, the statement of the problem, definition of terms, sources of data, delimitations of the study, and organization of the study. The second chapter contains a survey and analysis of the related literature and research.

The methodology and procedures for the study are discussed in the third chapter. The fourth chapter is a review of the findings of the data collected during the study. The fifth and final chapter of the study presents a summary of the findings, conclusions, and recommendations for further study.

REVIEW OF THE LITERATURE

Introduction

In compliance with the Elementary and Secondary Education Act of 1965, local school districts were asked to develop programs which would improve the status of the educationally deprived child. According to R. F. VanDyke, State Co-ordinator of Title I, a vast majority of school districts devised some type of remedial reading program.¹

In order to understand the background leading to the study itself, the researcher has surveyed the literature in two basic areas: Title I of the Elementary and Secondary Education Act and the factors which influence the reading process.

In the literature related to Title I of the Elementary and Secondary Education Act, three general categories seemed relevant: (1) an historical overview leading to the passage of the Act, (2) the legalities of the Act itself and (3) the critics' view of present evaluative practices.

The second major section of the paper is a review of literature and research in the factors that affect the reading process. These have been

¹VanDyke, R. F., Des Moines, Iowa. Discussion concerning the evaluation procedures of Title I. Private communication. 1969.

categorized in the following sequence:

- (1) Innate intelligence
- (2) Home Environment
- (3) Psychological and Emotional Factors
- (4) Educational Achievement
- (5) Educational Materials and Methods
- (6) Physical Factors
 - (a) Sex
 - (b) Vision
 - (c) Audition
 - (d) Speech
 - (e) Laterality

An Historical Overview Leading to the Passage of the
Elementary and Secondary Education Act of 1965

Lyndon Johnson in the 1964 presidential campaign decided to make federal aid to education one of his central issues. At that same time, he developed a task force on education whose purpose was to design and write proposals on methods by which he might achieve his goals. The task force was chaired by John Gardner, then president of the Carnegie Corporation.

An influential member of this task force was Francis Keppel, Commissioner of the Office of Education. He was noted for developing policies in conjunction with others - William B. Cannon and Michael S. March (Bureau of the Budget), Wayne Morse (Chairman of the Senate Sub-Committee on Education), Adam Clayton Powell (Chairman of the House Committee on Education and Labor), Carl Perkins (Chairman of the General Sub-Committee on Education of the House Committee on Education and Labor), and John Fogarty (Chairman of the Sub-Committee on Labor, Health, Education, and Welfare of the House Appropriations Committee). Douglass Cater served as a liason between the task force and the administration (5, p. 5).

In an interview situation Senator Wayne Morse stated that Public Law 89-10 was basically the same as his Deprived School District Bill the year before. This bill was concerned with the impact of poverty and

deprivation upon youngsters in the low-standard school districts of the country and in rural and urban slums. During some scheduled hearings, Morse remarked that he talked to Commissioner Keppel. After discovering that Keppel was against the bill, he stated,

"I couldn't believe my ears." He felt that the bill would cost too much. I said to him, "Mr. Commissioner, if the costs were doubled, even tripled, we ought to pay it and be glad to pay it willingly in order to get the benefits that the bill is bound to deliver in the slum areas and depressed areas - the area's where we're pouring millions of dollars of welfare funds for parents who, for one reason or another, are unemployed and unemployable. We would not waste a dime by enacting this legislation, but it would save a lot of young people from wrecked lives and, in so doing, would save the taxpayers many times the cost of this bill. If you sat in my position, Mr. Commissioner, and you watched your government pour billions of dollars down the international rat hole, you would not find yourself very much moved when the administration suggests that we study spending \$218 million further because it's too much."

I further said, "Mr. Commissioner, you flunked the seminar. You failed. Now I appoint you as my emissary to go down to the White House and tell the President he failed too."

That's the background. A few weeks later, I saw Mr. Keppel at the White House when the President was signing the NDEA Extension . . . He said, "The President wants me to tell you that we're for your bill. We're even going to expand it. We don't know how much yet, but we're going to expand it." Now that's an interesting history to this bill. That's where a good part of Title I came from (2, pp. 87-88).

The President of the United States in his message on education which preceded the enactment of the Elementary and Secondary Education Act stated one of our country's biggest tasks is ". . . to bring better education to millions of disadvantaged youth who must need it. The Title I section of the Elementary and Secondary Education Act was designed to do just this (13, pp. 301-304).

The time for federal aid to education was ripe. President Johnson was a leader amidst a Democratically controlled, sympathetic Congress. Ideologically, it was difficult for Congressmen to be against the bill, at least openly. The cause of providing equal educational opportunity for disadvantaged youth was truly noble (45, p. 40).

In the world's most wealthy country, the Congressmen were undoubtedly ashamed by the following statistics:

1. Each year one quarter of a million of our youth fail to complete elementary school.
2. Each year one million people drop out of high school.
3. The figures for drop outs are twice as high for blacks as for whites.
4. The poorly educated make up 46 percent of our labor force and 64 percent of our unemployed (13, p. 301).

The President submitted his educational message and a bill draft at the beginning of the new Congress on January 12, 1965. The House of Representatives on March 26th voted 263-153 in favor of the bill. Wayne

Morse guided the bill intact through the Senate. The bill then went to a conference committee where on April 9th a positive vote was cast. On April 11th, outside the one-room schoolhouse at Stonewall, Texas, the President signed Public Law 89, the Elementary and Secondary Education Act (5, pp. 5-9). This broadly based federal bill culminated 100 years of efforts to get supporting legislation for the Elementary and Secondary Schools (5, p. 483).

Funds were first made available to local school systems on September 23, 1965, after the 1965-66 school year had already begun (74, p. 2). The State of Iowa did not have any operable projects in 1965. The first approvals were received by local schools in January of 1966.

The total amount allocated to Iowa for fiscal year 1966 was \$18,967, 315. Table I depicts a breakdown of the money spent.

Table 1. Title I Allotments for Iowa for the 1966-67 School Year

Time	Number of Projects Approved	Amount
School Year 1965-66	705	\$11,589,921.00
Summer - 1966	319	\$ 4,497,658.00
State Institutions	<u>8</u>	<u>\$ 292,968.00</u>
	1,032	\$16,380,547.00

All but 20 of the High School Districts participated in the Title I programs during the 1965-66 school fiscal year (40, pp. 1-2).

Table 2 relates the appropriations that were made for Iowa for 1967 and 1968.

Table 2. Title I Allotments for the 1967-68 and 1968-69 School Years. ^a

Grants to State & Local Agencies	1967	1968
Local Educational Agencies	15,153,804	15,153,804
State Schools for Handicapped	214,134	323,005
State Schools for Neglected and Delinquent	36,827	155,130
Children of Migratory Workers	9,800	42,642

^a Source: (67, p. 3)

Legalities Concerning Title I of the
Elementary and Secondary Education Act of 1965

The Elementary and Secondary Education Act of 1965 was the first major legislation of national significance to be enacted by the 89th Congress. Even though this research is concerned only with Title I of the Act, a simplified overview of the other titles is necessary in order to understand the total concept.

Title I provides for payment of one half the average per pupil expenditure for children from families with an income below \$2,000 per year. It is projected that somewhat more than \$1.06 billion will be distributed to local schools through state education agencies during the next year.

Title II authorizes distribution of \$100 million to the states for acquisition of library resources, including textbooks and audio-visual materials. The ability of local school officials to budget these funds will depend on the state plan, approved by the U. S. Commissioner of Education.

Title III provides \$100 million for grants to local schools for establishment of supplementary education centers. An extremely wide range of activities may be authorized under this title. Under its terms, school authorities are required to cooperate with other educational and cultural interests in the community.

Title IV makes another \$100 million available over the next five years for regional educational research and training facilities. Grants will be awarded to institutions of higher education and other non-profit organizations to undertake programs which will benefit elementary and secondary schools.

Title V appropriates \$25 million to strengthen state departments of education. Grants will be made available to undertake special projects which will improve services rendered to local school districts (52, p. 190).

Eligibility was to be determined by the number of children from five to seventeen years of age in families having an annual income below \$2,000. There were two exceptions to this rule. First, families whose income exceeds \$2,000 because of aid to dependent children were to be counted. Secondly, the total number of school-age children from low-income families had to be at least one hundred or three percent of the districts' school-age population, whichever is less. In no case was it possible to base on fewer than ten children.

The grant to which a school district was entitled depended on the State's average per pupil expenditures during the second preceding year. The federal payment was set at fifty percent of this amount for each child claimed. Total entitlement was limited to thirty percent of the school districts' current operating budget.

After establishing eligibility, school districts were required to qualify for payment. The local plan, accompanied by an application for assistance, was to be submitted to the state agency for approval.

There were two stipulations added to the 1965 criteria for allocating funds. State officials had to also base their allocations on

(1) the number of children residing in foster homes and (2) the number of children residing in institutions for neglected children (69, p. 1).

Local school officials are encouraged to co-operate with community action groups which are implementing provisions of the Economic Opportunity Act of 1964 (52, pp. 190, 191).

Final Congressional action in 1966 resulted in the following important amendments to the Elementary and Secondary Education Act.

1. Extend Title I through Fiscal Year 1968.
2. Permit ratable reduction of grants when appropriations are below authorizations and reallocation of unused local educational association's funds to other local educational association's within the State and then to other States.
3. Repeal the incentive grants section.
4. Retain the low-income factor of \$2,000 in Fiscal Year 1967, but increase this figure to \$3,000 in Fiscal Year 1968.
5. Provide special grants to State agencies for educational projects for migrant children.
6. Provide additional grants to State agencies for State operated or supported schools for neglected and delinquent children.
7. Include neglected, delinquent and foster children in the formula count.
8. Allow up to one percent of a local educational association's basic grant or \$2,000, whichever is greater, to be used under certain conditions for planning Title I projects.

9. Require that, in developing plans for construction of facilities, a local educational association would have to make such facilities accessible to and usable by handicapped persons. (68, pp. 2, 3).

When President Johnson signed the 1967 Amendments to the Elementary and Secondary Act on January 2nd, he extended the Act for two years through June 30, 1970. The total authorization for the fiscal years 1969 and 1970 was 9.3 billion (5, p. 40).

There was one legality that has special importance to this paper, that was, the creation of the National Advisory Council on the Education of Disadvantaged Children. As required by Section 212 of Title I, the President of the United States charged this council to make an annual report on the effectiveness of Title I programs and also make recommendations for their improvement.

The Council's first report stated: "The Council's conclusions will astonish no one who has been concerned with the problems of the disadvantaged child. They are worth quoting for their own sake and as a basis for some illuminating examples."

'The single most widespread achievement of the Title I program is that it is causing teachers and administrators to focus new thinking on ways to overcome educational deprivation. For the most part, however, projects are piecemeal fragmented efforts at remediation or vaguely directed 'enrichment'. It is extremely rare to find strategically planned, comprehensive programs for change based on four essential needs: (1) adapting content to the problems of disadvantaged children, (2) improved in-service training of teachers, (3) attention to nutrition and other health needs, (4) involvement of parents and community agencies'. (29, p.2).

Critics' View of Current
Title I Evaluative Procedures

One of the most exciting aspects of the Elementary and Secondary Education Act's Title I program was the requirement that local school districts evaluate their programs. The Title I Division of the State Department of Public Instruction required participating school districts to annually evaluate their programs. The forms for the evaluations were prepared at the state level and then forwarded to the local school districts. These forms requested pre and post test scores and also allotted spaces for subjective measurements.

In 1966, the Title I Division of the Department of Public Instruction requested that school districts give pre and post tests to measure the reading growth of the Title I children. Later, these scores were to have been forwarded to the State. However, due to the turmoil that local school districts faced when trying to fill out the report forms, plus the confusion encountered at the State level in trying to decipher them, a new ruling was made. The ruling was that school districts could, if they wished, give standardized tests of their choice, but the state evaluators would use, whenever possible, the results of the Iowa Basic Skills.¹

¹VanDyke, R. F., Des Moines, Iowa. Discussion concerning the evaluation procedures for Title I. Private communication. 1969.

School officials were quick to admit that their attempts to evaluating the Title I Programs were not successful. They were also quick to put the blame on their own inefficiencies in the area of evaluation.¹

The result was that the majority of evaluations that has occurred in Title I has either been subjective in nature or a simple listing of scores taken from some achievement test. O. L. Davis believed most school officials were ill equipped to do a good job of evaluation. Due to this inadequacy, some school officials honestly wanted to commit all of the available funds to programs rather than allotting some for evaluation. Mr. Davis has further contended that even though special training was permitted by the Guidelines, it was seldom written into a project application. Thus personnel who had been appointed to the evaluation activities were expected to do the job without special training. He added that there needed to be an extension of the bill itself in order to insure that people were knowledgable in the area for which they are responsible(17, p.19).

This was one instance in which educators could not blame the lack of finances. In discussing this with Mr. VanDyke, he related that according to the Federal officials, we (school districts in Iowa) were not

¹Ahrens, Willis, Community School District, Ottumwa, Iowa. Discussion concerning the evaluation of Title I. Private communication. 1969.

spending enough money in this area. The guidelines, according again to Mr. VanDyke, encouraged an increase in both money spent and planning time in evaluating Title I Programs.¹

Educators have always turmoiled over evaluation procedures whatever the area - teacher effectiveness, student growth, or program merit.

Since the evaluation of Title I programs was required, critics have spoken loudly in this area. Some comments included:

1. "The impact of the Title I program on students is yet to be measured . . . Many individual schools in Illinois experienced marked reduction in the dropout rate, although this result is masked in the statewide averages by contaminating factors (48, p. 316).
2. "The details of this strategy, however, have by no means been clear. For one thing, we still have not had sufficient experience with Title I, or compensatory education programs generally, to be able to fully and fairly evaluate their potential. For another, the limited evaluations of Title I programs, together with the wide variation in content and quality of data submitted to the Office of Education, have prevented any overall statistical evaluation of the first years of Title I on a nationwide basis. In turn, lack of data that is at once widely comprehensive and genuinely comparable has made identification of the components of successful compensatory programs most difficult (74, p. 3).

¹VanDyke, R. F., Des Moines, Iowa. Discussion concerning the evaluation procedures of Title I. Private communication. 1969.

3. Francis Keppel remarked, "We expect a good many improvements in . . . educational research . . . (1, p.1).
4. The following statements were outcomes of two studies conducted by the American Institutes of Research. The AIR report used only standardized tests to measure achievement. Ratings, classroom grades and special tests prepared by teachers were considered unreliable. Any improvement in achievement scores was not considered sufficient by itself to identify a successful program. The achieved gain had to exceed that made by a control group over a comparable period of time, or that to be expected on the basis of normative data, and had to be statistically significant. (The preceding statements were in complete juxtaposition of current practices by local districts) (74, p. 20). According to O. Meredith Wilson, the self-analyses of Title I and other compensatory programs sometimes demonstrated more wishful thinking than hard evaluation(74,p.19).
5. Dr. A. Harry Passon of Teachers College, Columbia University stated". . . We're Title I personnel trying new ideas but we are using old, inapplicable evaluating techniques". Professor Ed Zugler of Yale said, "I found not only reluctance but down right apathy to research. Too many educators treat the researcher as an enemy, not as someone to work with in seeing how we can all best serve children. We all want the best for these kids, but we aren't going to find it unless we keep looking. Now we have a kind of numbers game - how many kids and how much money - - but no real evaluation. Thats because it is easier to count kids and dollars than to evaluate motivation and morale (50, p. 39).
6. ". . . that there exists an information gap between researcher and schoolman is unquestionable. At present, even the lines of communication which do exist seem to suffer from interference and bad connections". (35, p. 489).

Variables Which Affect the Reading Process

The process of learning to read is definitely complex. Often times, the failure to succumb to this process is caused by a variety of reasons. The concern of this section was to review the literature and research concerning the factors that affect the reading process. This section was never intended to be definitive, but rather an attempt to determine what factors do or do not affect the reading process.

Innate intelligence

It has been generally agreed that there is a high correlation between innate intelligence and reading achievement. Ruth Strang asserted that there is a high correlation between reading and native intelligence (70, p. 411).

Kottmeyer, however, refuted Dr. Strang's statement when he said, "although bright children learn to read more readily and better than those who are less intelligent, the correlations consistently shown between intelligence and reading are not so high as might be expected." He added that approximately seven percent of their clinical cases are those children who depicted normal or superior intelligence (38, p. 20).

Spache explained Kottmeyer's percentages by stating the reason for fewer mentally retarded readers in reading clinics today is that teachers are recognizing the reading limitations of children with below average intelligences (63, p. 117).

Kottmeyer did add, however, that low I.Q. pupils acquire word perception skills more slowly and are also handicapped by their limited knowledge of word meanings (38, p. 20).

Family environment

In the same vein, Ruth Strang defined retarded readers, in part, as individuals who were economically impoverished or otherwise disadvantaged because of environmental conditions (70, p. 427). Carter and McGinnis agreed that a child's interests and attitudes have their origins in the home (12, p. 21).

Black, in harmony with the preceding writers, cited several characteristics of environmental conditions which tend to produce reading disabilities. Some of these characteristics were:

- (1) "Parents place home responsibilities above school attendance"
- (2) "Seldom is a premium put on education"
- (3) "Curiosity and concept development both may be adversely affected by the paucity of objects within the home" (8, pp. 242, 243, 244, 245).

Environmental conditions have greatly influenced a child's ability to read. Spache remarked that the reading habits of the family and the community condition the students' own reading behavior (63, p. 122).

Sheldon found that even the number of books in the home was a crude guide to the proportion of reading failures (60, p. 69). Other factors related to reading success were the size of the family, the educational level of the parents, the occupational status of the father and the parents' mobility during the child's primary years.

In Hardy (30, p. 114) and Preston's study, they emphasized the contribution of unhealthy parental attitudes to reading disability and to the failure of corrective efforts. In Preston's study, more than one-half of the parents had no understanding or sympathy for their child's reading problems (54, p. 457).

In Robinson's textbook, she reported that fifty three percent of the retarded readers were subjected to maladjusted homes or poor family relationships (58, p. 120).

In opposition to Spache, Bollenbacker found in his Cincinnati, Ohio, study that parental mobility did not adversely affect the pupil's reading achievements. Using a co-variance design involving 5, 578 pupils, he found no significant differences between "movers" and "non-movers" (10, pp. 356, 360).

Psychological factors

There has been a general agreement among scholars that there is a high correlation between reading success and psychological stability.

Kottmeyer remarked that approximately six percent of the students in his reading clinics have reading problems brought about by emotional disturbances.

Carter and McGinnis stated that early failure in the classroom often leads to complete frustration. Dolch voiced a similar opinion when he said:

"Probably more deficiency in reading can be traced to discouragement through failure, and the consequent attitude of antagonism towards reading, than to any other cause. Many children hate the reading lesson simply because it compels them to exhibit before their companions their ignorance of lack of skill. A child caught in this situation is frequently scolded or held up to ridicule. If this condition is once allowed to continue, a child may go on from year to year with scarcely any improvement because he never looks at a book unless he has to and then with a distinct aversion. When he is supposed to be reading, his attention wanders so that very little reading is really done, and consequently no improvement of skill results" (18, p. 241).

Similarly Robinson has said that early failures to adapt to the reading process may lead to frustration, inattention, lack of motivation, confusion, and lack of application to the task of learning to read (58, p. 82).

A longitudinal study by Inez Clark Edding gave evidence to the view that there was a correlation between reading achievement and emotional stability. She concluded in her study that better adjusted socially and emotionally students were higher achievers than were those not so adaptive (21, p. 120).

Dorthea McCarthy in her study stated, "It appears then, that unless a child is suffering from cerebral palsy, true aphasia with organic lesion, deafness, or malformation or disease of the speech organs, any deviation in his language development can be thought of as a symptom of poor mental health" (44, p. 22).

Ruth Strang believed that emotional difficulties, in some cases, have prevented the child from learning to read or from using adequately the reading ability he has (70, p. 447).

Self-concept

An important consideration to be made was concerned with the child's self-concept. Some authors believed that a child's success or failure in reading depended on how he perceived himself in this process. Black stated that a characteristic of a disadvantaged reader was the child's negative self-concept in his relationship of success in school. Continual failures made it difficult for the child in understanding the reading process (8, pp. 242, 243). Often children have heard others say how difficult it was to read. The youngster often identified himself with someone who couldn't read or who disliked to read (12, p. 19).

Nancy L. Prows in her doctoral dissertation pointed out that there is a relationship between self-concept and overall achievement. She further contended that teacher's sensitivity to this fact can cause a positive change in the student's self-concept (55, p. 118).

Educational achievement

Researchers have made popular the notion that a pupil should have a mental age of seventy-eight months in order to learn to read successfully. The fact remains that a large majority of pupils who have mental ages of seventy-eight months make a year's advancement in the first year of instruction and those who have not, fail to make that gain. As youngsters entering school are usually six, it has been evident that teachers are forcing instruction before the students are old enough to read (38, p. 12).

Educational materials and methods

Durrell maintains that there has been a large amount of teaching that has not resulted in learning. The result was that youngsters fall behind, get confused and become "retarded readers". The usual trend then was to get children and their grade levels in juxtaposition with their reading levels (19, pp. 350, 351).

Kottmeyer attempted to build a case for educational background being a factor when he said that poor teaching or poor learning conditions were probably responsible for more reading disabilities than all the other investigated causes put together (38, p. 16).

Spache also contended that children's reading problems were often a result of inadequate teaching, bad classroom management, and prejudice and rejection (63, p. 124).

Jeanne Chall in her book Learning to Read: The Great Debate stated, "It seems as if most cases of reading disability are due to blocking of the learning process by the use of limited, uniform methods of teaching. These methods, although they have been used successfully with the majority of the children, make it impossible for certain children to learn (to read) because they interfere with the functioning of certain abilities these children possess." (14, p. 170).

After analyzing several clinical studies, Chall concluded that any one method did not produce any more failures than any other. The results of the studies, however, point out that all of the problems stemmed from the child's inability to decode and not his ability to comprehend (14, p. 176).

Durrell saw no immediate solution to this problem. He stated that present methods for preventing or correcting reading disabilities are antiquated (19, p. 349).

Dr. Francis Kimmey's doctoral dissertation studied the reading achievements of two groups of children in the suburban areas of Madison, Wisconsin. The experimental group was taught on an individual basis and the control group was taught by the traditional three track system. His study concluded that there were no critical differences between the two groups in reading achievement (37, p. 75).

Dr. Allen Berger in his dissertation attempted to determine the relative effectiveness of four teaching methods, namely, the tachistoscope, controlled reader, controlled pacing, and paperback scanning, in teaching for reading comprehension. The 225 students in the sample were given instruction utilizing the various methods of eight weeks. At the end of the sessions, Dr. Berger concluded that even though reading rates increased through all methods, there was no significant change in the average level of comprehension (7, p. 197).

Physical factors

Sex It is generally agreed by researchers that the female sex has an advantage over the male sex in the process of learning to read. Stanchfield reported that his studies made in large schools indicated that boys made up seventy-five percent to eighty percent of all the reading disabilities. Records from other reading clinics indicated that boys compose over 85 percent of the students in their classes (65, p. 218).

Other researchers indicated similar results. Charles St. John in his study during the 1930's reported that girls markedly excelled boys in reading during the first four grades (66, p. 671).

During the 1940's, Stroud and Lindquist conducted a study involving 50,000 pupils in more than 300 Iowa schools. The researchers stated

that "girls have maintained a consistent, and on the whole, significant superiority over boys in the subject tested (71, pp. 665-666).

Sister Mary Nila in her 1952 study concluded that the girls significantly exceeded the boys in both reading growth and achievement (49, p. 548). Arthur Gates found similar results when he reported that his study indicated that girls' scores in reading were significantly higher than their counterparts (25, p. 432).

The important question that had to be considered here was what causes this difference. It was at this point that researchers have faltered. Gates attributed the difference to family environment (25, p. 432). Powell attributed the difference to culture. He stated that too often reading is thought to be a feminine characteristic. It is simply not a part of the "All American" boys' repertoire (53, p. 219).

Vision Flaherty contended the difference is due to the physiological maturity of boys and girls. She stated that eye muscles and visual acuity in boys are not equal to the task of beginning to read (24, p. 471).

Reading is an accomplishment that demands the use of the sensory processes. Vision is one of those processes. Spache (62, p. 66) and Kottmeyer (38, p. 38) both agreed that visual defects were seldom the major cause for reading failure. Kottmeyer added that farsightedness, common among young children, caused reading discomfort and that nearsightedness was very common among skillful readers.

There are several visual defects which seemed to bear a significant relationship to reading disability. Marion Monroe pointed out three types of difficulties related to the visual aspect of reading. They were:

1. Lack of a clear retinal image due to defects in the refractive mechanism of the eye. The child generally shows evidence of eyestrain and confuses similarly shaped letters such as o, e, c or b, h, and no. Frequently he may confuse such words as oat, cat, and eat or such words as hand, band, and hard.
2. Lack of precision in discriminating complex visual patterns. The child seems unable to react to words as wholes. Frequently he spells out the letters and tries to identify patterns by tracing them with his finger. The child's difficulty may be due to functional as well as organic deviations.
3. Lack of precision in the discrimination of the spatial orientation of patterns. Frequently the child confuses such letters as b, d; p, q; u, n; m, w; f, t, and such words as was and saw and no and on (46, p. 105).

Dr. C. W. Morris compounded the problem by stating that many children are unable to see at close range even though their eyes show perfect vision. The doctor added that this malfunction is usually caused by a lack of oxygen either during the birth of the child or during an extremely high fever. The result is blurred vision (47, p. 123).

Audition Research in reading retardation has indicated that ability in reading, which is normally conceived as a visual task, was often more highly correlated with auditory than visual performance (19, p. 1091).

Austin in her work with the lower elementary grades indicated that the listening program was an important aid to reading comprehension (4, p. 152).

Lubershane conducted his study to determine if training in listening could improve reading ability. He concluded that even though he could not find statistical proof of the value, he believed the exercises had a positive effect on reading growth (41, p. 281).

Betts reported in his 1940 study of fifth graders that there was a greater incidence of hearing impairment in low achievers than among the high achievers (6, p. 746).

Both Spache and Kottmeyer indicated hearing loss was a tremendous factor when the teaching process was phonics-oriented (63, p. 113). Tests conducted in Kottmeyer's clinics involving 1,000 cases indicated that approximately eighteen percent of the retarded readers had hearing losses greater than ten percent in one or both ears (38, p. 18). To add to this situation, Zoepfel remarked that auditory disorders are often not detectable under school screening tests (77, p. 114).

Speech There seemed to be a general suspicion that there is a relationship between speech defects and reading disability. At the present time, there is uncertainty as to which is the cause or whether both are influenced by other conditions. Kottmeyer remarked that about six percent of his clinical cases have shown serious speech defects (38, p. 18).

In Sonenberg's study he used forty students in his control group, all of which exhibited some type of functional speech defect. The control group was given instruction in reading and speech therapy while the other group was given instruction in reading alone. The result was that the group which was given instruction in both therapy and reading made more discernible reading improvements than did the other group(61, pp. 197,200).

Brain dominance Researchers of the relationships between hand preference and reading achievement have come to differing conclusions from their studies. Hildreth in her research was convinced that such a relationship did exist. She concluded that "right dominated individuals are less apt to have reading . . . difficulties" (32, p. 214). Likewise, Malmquist pointed out there is a relationship, but it is not statistically significant (42, p. 113).

Many studies related just the opposite. Haefner in his study concluded that "no reliable differences were found between the school (reading) achievement of the left-handed groups and that of the right-handed group" (28, p. 32). Witty and Kopel also concluded that this relationship did not exist (75, p. 131).

Dr. Catherine Groff in her doctoral dissertation concluded that she could find no evidence that mixed dominance was a factor in reading retardation (26, p. 104).

Patrick J. Groff studied the reading achievement of all left-handed pupils in two school districts in Southern California. After comparing this group with the remaining student body, he concluded that there were not significant differences in reading achievement between the two groups (27, pp. 31, 33). Kottmeyer stated that the clinicians have never been able to substantiate any of the theories of handedness in his clinics (38, p. 21). In the same vein, Spache remarked that according to anatomical facts and the educational and medical research, there is still no concrete evidence which would indicate a causal relationship to reading disability (63, p. 116).

The preceding review of literature offered many implications to the research design used in this investigation. Controls would have to be established on intelligences, prior reading achievements, self-concepts, and family reading environments. The review also suggested that the investigation would have to regulate the factors of teacher effectiveness and the materials and methods used in the teaching procedures. And, finally the review suggested the need for controlling on the psychological make-up of the students and also the various physical factors (sex, vision, audition and speech).

The review of literature revealed several basic concepts in the reading growth and development. They were: (1) It has been generally agreed that there exists a high correlation between innate intelligence and

reading achievement; (2) Reading retardation has often been a result of economically impoverished or otherwise disadvantaged environmental conditions; (3) Parental mobility did not adversely affect the pupils' reading achievements; (4) There has been general agreement that reading success is affected by psychological stability; (5) There has been a relationship between the self-concept and overall reading achievement; (6) Poor teaching and/or learning conditions often have resulted in reading disabilities; (7) Limited, uniform teaching methods have resulted in reading disabilities; (8) No one particular teaching method has been superior to another with reference to reading comprehension; (9) The female sex has an advantage over the male sex in the process of learning to read; (10) Adequate vision has been a necessity in the process of reading; (11) Adequate auditory functionings has been an integral aspect in the process of reading; (12) There has been a general suspicion concerning the relationship of speech defects and reading; (13) There has been disagreement among scholars as to the effect brain dominance has played in the reading process.

METHODS AND PROCEDURES

Introduction

The purpose of this investigation was to determine the difference in reading achievement between two groups - - those participating in the Title I Program during the 1968-69 school year and those not participating. A secondary purpose of this study was to determine any significant difference between the sexes involved in this study. Another tertiary purpose was to determine any significant difference between interaction of the sexes and the two groups.

The survey of literature and research indicated the following variables were capable of affecting the reading process : (1) innate intelligence, (2) family reading environment, (3) psychological conditions, (4) the child's self-concept, (5) prior reading achievement, (6) educational materials and methods, and (7) the various physical factors (sex, vision, auditory, speech and laterality).

Although it would be possible to cope with this problem by using the analysis of variance statistical design, investigation revealed that a more effective treatment of the variables was possible by using the Multiple Analysis of Co-Variance Design.

The intent was to secure an F factor which would or would not show a significant difference between the two groups. The criterion variable was the Reading Comprehension Section of the Iowa Tests of Basic Skills (taken September 1968). The co-variates (control variables) were: (1) prior reading achievements, (2) intelligences, (3) self-concepts, and (4) family reading environments.

The raw data relevant to this model were placed on code sheets and then punched and verified on IBM Cards. The facilities of the Iowa State University Computational Center were used to analyze all the data on the 360 IBM computer.

Selection of the Population

When the researcher first conceived the idea for the study, he anticipated having approximately five hundred students in the sample. Later, as the statistical design became more concrete, he was able to foresee sizeable reductions in the numbers in the sample. In order for a school district to be included in this study, it had to have a positive response to the following questions:

1. Do you have a Title I reading program in your district wherein fifth grade students leave a self-contained class

for 30-60 minutes of each school day to receive special, remedial, or developmental reading instruction?

2. Have these students been given the Iowa Basic Skills Tests in both fourth and fifth grade?
3. Have they been given the Lorge-Thorndike Intelligence test? If you do not give the Lorge-Thorndike Intelligence test, would you permit the investigator or one of his colleagues to administer this test to them?
4. Would you permit the researcher to give each student selected for the sample the Piers-Harris test of the Self-Concept?
5. Would you allow the investigator to talk with and ask the cooperation of the children's teacher in rating these children with reference to the reading environment at home?

The researcher contacted 28 districts in the investigation; 19 districts reported negatively to at least one of the preceding questions.

1. Knoxville Community School District
2. Ottumwa Community School District
3. Keokuk Community School District

4. Fairfield Community School District
5. Des Moines Public Schools
6. Cardinal Community School District at Agency
7. Davenport Community School District
8. Blakesburg Community School District
9. Chariton Community School District
10. Osceola Community School District
11. Corydon Community School District
12. North English Community School District
13. Sigourney Community School District
14. Oskaloosa Community School District
15. Eddyville Community School District
16. Indianola Community School District
17. Newton Community School District
18. Marshalltown Community School District
19. Ames Community School District

The researcher concluded with 176 students in the sample. These students were taken from fourteen elementary buildings in the nine school districts listed below:

1. Albia Community School District
2. Cedar Rapids Community School District

3. Iowa Valley Community School District
4. Davis County Community School District
5. Centerville Community School District
6. Moravia Community School District
7. Colfax Community School District
8. New Prairie Community School District
9. Monroe Community School District

The preceding schools represented a sampling of the population. Although it would have been statistically better to have had a random selection of the sample, the researcher remained confident that accurate inferences could be made concerning the total population.

Procedures used in Treating the Variables

The following is the list of variables and the methodology that was used in analyzing them for this investigation.

Innate intelligence

All the students in this study had been given the Lorge-Thorndike Intelligence Test (both verbal and non-verbal sections) in fifth grade. In three school districts, Davis County, Centerville and Moravia, where the Lorge-Thorndike test was not given, tests were administered .

Family environment

The review of literature in this area strongly suggested there has been a relationship between the child's home environment and his achievement in reading.

The researcher working with Dr. Ronald Powers, Department Head of Family Environment at Iowa State University, concluded that since the area of home environment was so extensive and involved, for this particular research it would be best to concentrate in the area of the child's home reading environment. After private communications with both Dr. Powers and Dr. Richard Manatt, Associate Professor of Educational Administration at Iowa State University, the researcher devised a Home Reading Environment Category (See Appendix A).

This instrument was then given to the child's regular classroom teacher. She was instructed to talk with the Title I Reading teacher if she thought it would be helpful in responding to the instrument. If the student and/or students had recently enrolled in the school district or if she was unfamiliar with a particular child's home life, she was to ask the child some pertinent questions (See Appendix A) which would in turn enable her to classify the child.

Psychological factors

Any student who was consulted by either a private or school psychologist during the period of the research was not considered for the sample.

Self-concept

The review of literature concluded that the child's self-concept

was an important factor in the child's reading success. Therefore, the researcher attempted to locate an instrument which would give a numerical score for the child's self-concept. With the help of Dr. John Schultz, Professor of Education of the University of Missouri at St. Louis, the researcher located the Ellen Piers and John Harris test on the self-concept (See Appendix B). This test was given to the 176 students in the sample. The test was read orally to each of the students by the researcher. The students were instructed to give their first reaction to the question.

Educational achievement

One of the variables which strongly affected this research was the student's reading achievement level prior to time the study was undertaken. Therefore, the percentile scores (state norms) were taken on the paragraph meaning section of the Iowa Tests for Basic Skills (taken September, 1967). Through the co-operation of the various classroom teachers, the investigator was permitted to acquire these scores by looking at the child's permanent record.

Educational materials and methods

According to the latest definitive study in reading, neither the materials nor methods have had a deterrent effect on the reading process as long as the method is viable and offers a multi-approach attack.

Therefore, the chief concern of the researcher was that the various schools taught remedial or development reading on an individualized basis; that is, a variety of materials was at the teacher's disposal to use with each child's particular problems. As Title I has in the past encouraged school districts to purchase equipment and materials, all the school districts in this study possessed an extensive amount of equipment and materials.

The quality of teaching is also a variable which was controlled by choosing an identical number of students from each teacher's class. For instance, if two Title I students were chosen for the sample, then likewise two Non-Title I students from that same class were chosen.

Physical factors

Sex An equal number of males and females was selected for the sample.

Vision It was assumed that all of the students had the vision necessary to do an effective job of reading. Students with exaggerated eye difficulties were not considered for the sample. (These students were located by checking the permanent records and also conversations with the children's teachers.)

Audition It was assumed that all of the students who were in the study possessed adequate hearing. Students having serious hearing disabilities, as indicated by teacher conversation and permanent records, were not considered for the sample.

Speech At present, there has been no conclusive evidence which would indicate there is a correlation between speech defects and reading difficulties. However, the students selected for the sample were void of serious speech defects (i. e. currently enrolled in speech therapy classes.) Each school in this study had the services of a speech therapist.

Brain dominance There was an apparent lack of conclusive evidence indicating any strong correlation between brain dominance and reading disability. Due to the inconclusive evidence plus the fact that working in the area would require the assistance of the medical profession, the investigator did not concern himself any further in this area.

FINDINGS

Introduction

The findings of the study were based on the results obtained by testing 176 fifth grade students in the following school districts:

(1) Albia Community School District, (2) Cedar Rapids Community School District, (3) Centerville Community School District, (4) Colfax Community School District, (5) Davis County Community School District, (6) Iowa Valley Community School District, (7) New Monroe Community School District, and (8) Prairie City Community School District. Table 3 depicts the number of students taken from each school district used in the study.

Table 3. Distribution of the Sample Population Taken from Selected School Districts

School District	Title I		None - Title I	
	Male	-Female	Male	-Female
Albia Community School District	19	19	19	19
Cedar Rapids Community School District	2	2	2	2
Centerville Community School District	5	5	5	5
Colfax Community School District	3	3	3	3
Davis County Community School District	4	4	4	4
Iowa Valley Community School District	4	4	4	4
Moravia Community School District	2	2	2	2
New Monroe Community School District	1	1	1	1
Prairie City Community School District	4	4	4	4
	—	—	—	—
Totals	44	44	44	44

Grand Total - 176

Analysis of Data by Testing

Three null hypotheses were to be tested as set forth in Chapter One under the Statement of the Problem. The experiment was to compare two groups of students on their reading achievement levels. There existed four elements of commonality between the experimental group and the control group. First, they were all fifth grade students taught in a self-contained classroom. Secondly, they were all exposed throughout the year to a basal reading series taught by their regular classroom teacher. Thirdly, each group contained an equal number of male and female students. And finally, each group was equally represented by the same number of students taken from each regular teacher's classroom.

The primary difference between the experimental group and the control group was that the fifth graders in the experimental group left the self-contained classroom for 30-50 minutes each day in order to receive instruction in reading from the Title I remedial reading teacher. Sometime during the day, they received reading instruction from their regular classroom teacher. By attending the Title I classes, they missed part of the instruction in some school subjects; namely, music, art or physical education. The Reading Comprehension Section of the 1969 Iowa Basic Skills served as a criterion variable.

The co-variates (control variables) used were: prior reading achievement (as measured by the Reading Comprehension Section of the 1968 Iowa Basic Skills), innate intelligence (as measured by the Verbal and nonverbal sections of the Lorge-Thorndike Intelligence test), self-concept (as measured by the Piers-Harris test on the Self-Concept), and the home reading environment (as measured by the Family Reading Environment Category).

One of the first concerns of the investigator was to determine the various correlations which existed among the components of the design. As was expected, there was a high correlation (.88) between the 1968 and 1969 Reading Paragraph sections of the Iowa Basic Skills. Even though there was also a high correlation (.73) between the Lorge-Thorndike Intelligence and the 1969 Reading Comprehension Section of the Iowa Basic Skills, the investigator left this co-variate as a part of the design.

As one of the assumptions of the multiple co-variance model was independence, the inclusion of the tests scores of the 1968 Paragraph Meaning Section of the Iowa Basic Skills could possibly be a violation. Table 4 reports the exact correlations among the various components.

Table 4. Correlations among the components of the Co-variance Design

	1	2	3	4
1. 1969 Paragraph Meaning section Iowa Basic Skills	1.0000			
2. 1968 Paragraph meaning section- Iowa Basic Skills	.8821	1.0000		
3. Lorge-Thorndike Intelligence Test	.7265	.7363	1.0000	
4. Piers-Harris Test on the Self-Concept	.3316	.3841	.3485	1.0000
5. Family Reading Environment Category	.5882	.5832	.5235	.3371

The principle underlying the co-variance was to regress the co-variates, thus adjusting their means in order to remove any initial differences that may have occurred before the investigation began. Table 5 illustrates the original means of the two groups, the sexes and the interactions.

Table 5. Original Means of the measurement devices for the two groups, the sexes and the interactions.

	Title I	Non- Title I	Male	Female	Male Title I	Male Non- Title I	Female Title I	Female Non- Title I
1969 - Reading Comprehension Section Iowa Basic Skills	23.16	62.82	41.84	44.14	21.09	58.45	25.23	67.18
1968 - Reading Comprehension Section Iowa Basic Skills	19.10	61.13	38.26	41.97	18.05	56.36	20.15	65.89
Lorge-Thorndike Intelligence Test	94.80	112.14	103.15	103.80	94.50	111.16	95.10	113.11
Pier-Harris Test on Self-Concept	47.21	56.36	51.17	52.40	46.05	53.95	48.39	58.77
Home Reading Environment Category	2.84	3.99	3.42	3.40	2.73	3.89	2.95	4.09

The three null hypotheses were tested with the analysis of variance as presented by Table 6.

Table 6. Analysis of Variance of Adjusted Means

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares	F
Group (A)	1	2.18	2.18	0.01
Sex (B)	1	14.13	14.13	0.07
Interaction (AB)	1	82.23	82.23	0.41
Error	168	33456.71	199.15	

The analysis failed to reject any of the null hypotheses which were:

Null Hypothesis 1: There will be no significant difference in the reading achievement of students involved in Title I reading classes and those who were not, when initial differences between the groups have been adjusted with respect to previous reading achievements, intellectual aptitudes, self-concepts and the family reading environment.

Null Hypothesis 2: There will be no significant difference in the reading achievement of the Title I and non-Title I student when sex is considered and when initial differences between the groups have been adjusted with respect to previous reading achievements, intellectual aptitudes, self-concepts and the family reading environments.

Null Hypothesis 3: There will be no significant difference in reading achievement when interaction between the Title I and non-Title I groups and sex is considered and when initial differences between the groups have been adjusted with respect to previous reading achievement, intellectual aptitudes, self-concepts, and family reading environments.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The problem of this investigation was to evaluate some selected Title I remedial reading programs in the State of Iowa. More specifically the investigation was concerned with statistically treating the data in ascertaining answers to the following null hypotheses: 1. There will be no significant difference in the reading achievement of students involved in Title I reading classes and those who were not, when initial differences between the groups have been adjusted with respect to previous reading achievements, intellectual aptitudes, self-concepts and the family reading environments. 2. There will be no significant difference in the reading achievement of the Title I and non-Title I students when sex is considered and when initial differences between the groups have been adjusted with respect to previous reading achievements, intellectual aptitudes, self-concepts, and family reading environments. 3. There will be no significant difference in reading achievement when interaction between the Title I and non-Title I groups and sex is considered and when initial differences between the groups have been adjusted with respect to previous reading achievements, intellectual aptitudes, self-concepts and family reading environments.

The sample studied consisted of 176 students (88 in the Title I remedial reading classes and 88 in the regular classroom only) enrolled

in nine school districts as previously mentioned in Chapter Three (Selection of the Population). The control group was taught reading from a basal series by the regular classroom teacher while the experimental group was given individualized instruction in reading as well as the basal reading instruction from the classroom teacher.

The statistical technique, multiple co-variance allowed a study of the two groups by statistically equating the dependent variables of reading achievement tests, intelligence tests, self-concepts and family reading environments. The main effects of the experiment consisted of the groups and the sex of the students.

The three computed F-values were insignificant at both the .01 and the .05 level of significance. Therefore, all of the hypotheses could not be rejected for any of the main effects or their interaction.

Limitations

Due to the design of this study, it was necessary to use numerical values in order to categorize the childrens' prior reading achievements, innate intelligence, self-concepts, and family reading environments. Therefore, the validity of this research depended in part on the accuracy of the various evaluation instruments.

Another limitation of this study was the period of time the children were in the program. As the 1969 Iowa Tests of Basic Skills were given in September, 1968, both groups of students had experienced summer vacations between their year of reading instruction and the time they were given the test.

Conclusions

The three null hypotheses were related to two factors (the two groups and sex of the students) and their interaction. On the bases of the findings in this investigation related to the null hypotheses, the following conclusions appeared evident:

1. There was no significant difference in the reading achievement of students involved in Title I reading classes and those who were not, when initial differences between

the groups had been adjusted with respect to previous reading achievements, intellectual aptitudes, self-concepts, and the family reading environments.

2. There was no significant difference in the reading achievement of the Title I and non-Title I students when sex was considered and when initial differences between the groups had been adjusted with respect to previous reading achievements, intellectual aptitudes, self-concepts and the family reading environments.
3. There was no significant difference in reading achievement when interaction between the Title I and non-Title I groups and sex was considered and when initial differences between the groups had been adjusted with respect to previous reading achievements, intellectual aptitudes, self-concepts and family reading environments.

Recommendations

1. On the basis of this investigation, the researcher recommended that school districts which operated Title I classes similar to those used in the sample consider:
 1. Drop the Title I reading class from the curriculum, or

2. Redesign the curriculum making adjustments with the quality and background of the personnel, the length of the class period and the physical conditions of the class itself.
2. One of the primary concerns of this research was to conclude with a plan of action for local school officials to follow in evaluating their respective Title I programs.

The researcher judged the present evaluation method as suggested by the Title I Division of the State Department of Public Instruction as being inadequate on two counts. The first and most obvious was the reporting of pre and post Iowa Basic Skills test scores for grades three to five. The reason was that since the tests were given in September and reported to the State in June, evaluators were, out of necessity, always reporting the progress for the previous school year. The second inadequacy was basing the evaluation on pre and post tests scores. Even though this method was capable of judging progress, it was an inadequate tool for distinguishing between the contribution made by the Title I teacher and the regular classroom teacher.

It was with the preceding reasons in mind that the researcher recommended the following plan of action. Even though the local evaluator could do this action research by following the recommen-

dations of this paper, it would be advisable for him/her to obtain consultive help from some knowledgeable person in the area of statistics. Three helpful bibliographical resources are:

- (1) Popham, James W. Educational Statistics. New York, New York. Harper and Row. 1967. pp. 221-257.
- (2) Snedecor, George W. and William G. Cochran. Statistical Methods. Sixth Edition. Ames, Iowa. Iowa State University Press. 1967. pp. 419-443.
- (3) Wert, James E. et:al. Statistical Methods in Education. and Psychological Research. New York, New York. Appleton-Century-Crofts, Inc. 1954. pp. 343-364.

For the remainder of this section the researcher referred to the students in the Title I class as the experimental group and the non-Title I students as the control group. The local school official was referred to as the evaluator.

The basic concern of this research was to remove all the factors which affected the reading process with one exception; namely, that the experimental group attended a Title I reading class for a portion of the school day and the control group did not.

It will be necessary that the evaluator select at random the same number of students for the control group as he did for the experimental group. Factors to keep in mind during the selection

process include: (1) an equal number of boys and girls for both groups, (2) all students in the sample come from the same grade level, and (3) each classroom teacher has the same number of non-Title I students as Title I students in the sample.

To continue with the investigation it is necessary to have a reading test score for everyone in the sample. This test should be given at the completion of the reading program. The researcher would suggest not using the Iowa Basic Skills as it is not co-terminous with either the introduction or conclusion of the reading process. Although the researcher has no particular preferences, he has for the evaluators' convenience listed several tests which could be used.

1. _____ . Metropolitan Reading Tests. Grades 2-9. Levels: Upper Primary (Grade 2), Elementary (Grades 3-4), Intermediate (Grades 5-6), Advanced (Grades 7-9), Working Time: 65 minutes. Forms A, B, and C. Published by: Test Department, Harcourt, Brace and World, Inc. 7555 Caldwell Avenue, Chicago, Illinois 60648.
2. _____ . Stanford Reading Tests. Grades 4-9. Levels and Working Time: Primary I (Grades 1.5 - 2.4) 1 hour 25 minutes, Primary II (Grades 2.5 - 3.9) 1 hour 15 minutes, Intermediate I (Grades 4.0 - 5.4) 40 minutes, Intermediate II (Grades 5.5-6.9), 40 minutes, Advanced (Grades 7-9) 30 minutes. Forms W, X, and Y. Published by: Test Department, Harcourt, Brace and World, Inc. 7555 Caldwell Avenue, Chicago, Illinois 60648.

3. Tiegs, Ernest W. and Clark, Willis W. California Reading Test, 1957 Edition. Grades 1-14. Levels and Working Time: Lower Primary (Grades 1 and 2) 23 minutes, Upper Primary (Grade 3), 40 minutes, Elementary (Grades 4-6) 50 minutes, Junior High (Grades 7-9) 68 minutes, Advanced (Grades 9-14) 68 minutes. Forms W, X, Y and Z. Published by: California Test Bureau, A Division of McGraw-Hill Book Company, Manchester Road, Manchester, Missouri 63011.
4. Nelson, M. J. Nelson Reading Tests (Revised Edition) Grades 3-9. Working Time: 30 minutes. Forms A and B. Published by: Houghton-Mifflin Company, 1900 South Batavia Avenue, Geneva, Illinois 60134.
5. Greene, Henry A. et. al. Iowa Silent Reading Tests (New Edition) Grades 4-12. Levels and Working Time: Elementary (Grades 4-8) 49 minutes, Advanced (Grades 9-12) 45 minutes. Forms Am, Bm, Cm and Dm. Published by: Harcourt, Brace and World, Inc. 7555 Caldwell Avenue, Chicago, Illinois.

The usefulness of the co-variance design is its ability to remove the factors which affect the reading process from having any effect on the final results. The following hypothetical situation might be helpful at this time. Suppose the Title I class had an average score of fifty points and the non-Title I students averaged a one hundred points. Normally one would say the non-Title I students did the better job. However, the remark that they should do better since they have higher intelligence quotients is quite relevant. By inserting the various intelligence scores into the design, it is possible to eliminate them as a factor. If the investigation were to stop here, the results might show an adjustment of the two mean

scores to sixty and ninety. In the evaluation of the local Title I program, it is necessary to use the scores from the same intelligence tests.

Another factor which could affect the reading process is the students reading achievement prior to the time the reading program commenced. It is suggested that a reading test be given at the start of the Title I program. This test should be given to the control group at the same time. Continuing with the hypothetical situation our two mean scores have now been adjusted to sixty-five and eighty-five.

Another factor which would affect the reading process is the child's self-concept. This test should be given at the end of the program to both groups. Although there are possibly other tests available, the researcher would suggest the following:

Piers, Ellen V. and Harris, Dale B. Childrens' Self-Concept Scale (The Way I Feel About Myself) Grades 3-10, Working Time: 20 minutes, Single form. Published by: Counselor Recordings and Tests, Box 6184 Acklen Station, Nashville, Tennessee 37212.

If the investigator were to conclude here, he might have the two groups with mean scores of seventy and eighty.

However, another factor which would affect the process is the child's family reading environment. Although this is a

complicated area to control, the researcher would recommend the Family Reading Environment Category as used in this research (See Appendix A). This device should also be used with both groups. Thus our hypothetical situation concluded with the mean of seventy adjusted to eighty and the mean of eighty adjusted down to seventy.

After controlling on these four factors, it is evident that the only difference between these two groups is that the control group remained in the self-contained classroom while the experimental group left the regular classroom to attend the reading class for part of the day.

The concern now would be to see if the ten point advantage of the experimental group was due to the merits of the Title I reading class or if it was due to luck (guessing on the original test).

Recommendations for Further Research

1. Replicate the study just completed. This would provide an opportunity to further validate these findings.
2. Complete another study similar to this using only Title I teachers with credentials in Remedial Reading.
3. Complete another study similar to this paying direct attention to the adequacy of the building and teaching facilities.
3. Complete another study similar to this restricting the class time either to more or less time than was used in this study.

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APPENDIX A

Dear Fifth Grade Teacher:

I am in the process of writing my Doctoral Dissertation. The basic concern of my study is the Title I Remedial Reading Classes. I am sure that the students who leave your class during the day are losing out on something. I am also positive that the students gain something from being the Title I Classes. The purpose of this study is to determine the significance of this gain.

I would like for you to study the five categories on the following blue pages. Then, I would like you to assign each child from your class that is in the study a categorical number which would best typify his/her home reading environment.

Naturally, I realize this is purely subjective on your part and thus might not be a true categorization of the child's actual reading environment. In some cases, it would be helpful to you to ask your students some of the following questions. Doing this might give more credence to your efforts.

1. Do your parents encourage you to read?
2. How much do you read at home? Approximate number of hours each week?
3. Does your family subscribe to magazines? If so, how many and what kinds?
4. Do you get any magazines at home that are especially for you?
5. Do your parents belong to any "Book-of-the-Month" Clubs?
6. Does your family have a large number of books located in some particular room in your house? If so, would you estimate the number of books you have? (50, 100, 200... 1,000).
7. Do you have a library card?

8. Do your parents take you to the library? (Often, occasionally, never)
9. Do your parents, brothers and/or sisters, read to you and/or with you? If so, how often each week?
10. After you read a story, do you talk to your parents about it?
11. Do you have a room where you can read without little or no interference?
12. Do your parents encourage you to read?

CATEGORIES DESCRIBING THE READING ENVIRONMENT

<u>CATEGORY</u>	<u>DESCRIPTION</u>
Number 5	<ol style="list-style-type: none"> 1. Parents have an established library for themselves and their children. 2. They regularly subscribe to both adult and children's magazines and books. 3. The children are encouraged to make regular visits to the public library. 4. The parents read to and with their children. 5. Excellence in education is always stressed.
Number 4	<ol style="list-style-type: none"> 1. Parents have a limited library for themselves and for their children. 2. They subscribe to magazines for themselves but not to any especially for their children. 3. Children have library cards and are encouraged to attend the library. 4. At times, the parents are willing to listen to their children read, but this occurs on a sporadic basis.
Number 3	<ol style="list-style-type: none"> 1. Parents subscribe to a few magazines. 2. Books are available in the home for children's reading, but there exists no established library. 3. Child might have a library card, but received it only by his own initiative. 4. The parents are concerned about the child's reading habits, but there is a lack of encouragement.

CATEGORYDESCRIPTION

Number 2

1. Parents do not regularly subscribe to any magazines or books.
2. There is a lack of any quiet place to read in the home.
3. The parents tolerate the child reading but certainly do not encourage it.
4. There is no library as such in the home, although there are a few books and magazines available.

Number 1

1. Parents are either illiterate or semi-illiterate - at any rate, they are non-readers.
2. Parents do not subscribe to any magazines or books. Therefore, there is a complete void of reading material in the home.
3. The parental attitude is reluctant to the child reading or even going to school.

APPENDIX B

The Piers-Harris
Children's Self Concept Scale
(The Way I Feel About Myself)

by
Ellen V. Piers, Ph. D.
and
Dale B. Harris, Ph. D.

Here are a set of statements. Some of them are true of you and so you will circle the yes. Some are not true of you and so you will circle the no. Answer every question even if some are hard to decide, but do not circle both yes and no. Remember, circle the yes if the statement is generally like you, or circle the no if the statement is generally not like you. There are no right or wrong answers. Only you can tell us how you feel about yourself, so we hope you will mark the way you really feel inside.

- | | | | |
|----|--|-----|----|
| 1. | My classmates make fun of me | Yes | No |
| 2. | I am a happy person | Yes | No |
| 3. | It is hard for me to make friends | Yes | No |
| 4. | I am often sad | Yes | No |
| 5. | I am smart | Yes | No |
| 6. | I am shy | Yes | No |
| 7. | I get nervous when the teacher calls on me | Yes | No |
| 8. | My looks bother me | Yes | No |

- | | | | |
|-----|--|-----|----|
| 9. | When I grow up, I will be an important person | Yes | No |
| 10. | I get worried when we have tests in school | Yes | No |
| 11. | I am unpopular | Yes | No |
| 12. | I am well behaved in school | Yes | No |
| 13. | It is usually my fault when something goes wrong | Yes | No |
| 14. | I cause trouble to my family | Yes | No |
| 15. | I am strong | Yes | No |
| 16. | I have good ideas | Yes | No |
| 17. | I am an important member of my family | Yes | No |
| 18. | I usually want my own way | Yes | No |
| 19. | I am good at making things with my hands | Yes | No |
| 20. | I give up easily | Yes | No |
| 21. | I am good in my school work | Yes | No |
| 22. | I do many bad things | Yes | No |
| 23. | I can draw well | Yes | No |
| 24. | I am good in music | Yes | No |
| 25. | I behave badly at home | Yes | No |
| 26. | I am slow in finishing my school work | Yes | No |
| 27. | I am an important member of my class | Yes | No |

28.	I am nervous	Yes	No
29.	I have pretty eyes	Yes	No
30.	I can give a good report in front of the class	Yes	No
31.	In school I am a dreamer	Yes	No
32.	I pick on my brother (s) and sister(s)	Yes	No
33.	My friends like my ideas	Yes	No
34.	I often get into trouble	Yes	No
35.	I am obedient at home	Yes	No
36.	I am lucky	Yes	No
37.	I worry a lot	Yes	No
38.	My parents expect too much of me	Yes	No
39.	I like being the way I am	Yes	No
40.	I feel left out of things	Yes	No
41.	I have nice hair	Yes	No
42.	I often volunteer in school	Yes	No
43.	I wish I were different	Yes	No
44.	I sleep well at night	Yes	No
45.	I hate school	Yes	No
46.	I am among the last to be chosen for games	Yes	No
47.	I am sick a lot	Yes	No
48.	I am often mean to other people	Yes	No
49.	My classmates in school think I have good ideas	Yes	No

50.	I am unhappy	Yes	No
51.	I have many friends	Yes	No
52.	I am cheerful	Yes	No
53.	I am dumb about most things	Yes	No
54.	I am good looking	Yes	No
55.	I have lots of pep	Yes	No
56.	I get into a lot of fights	Yes	No
57.	I am popular with boys	Yes	No
58.	People pick on me	Yes	No
59.	My family is disappointed in me	Yes	No
60.	I have a pleasant face	Yes	No
61.	When I try to make something, everything seems to go wrong	Yes	No
62.	I am picked on at home	Yes	No
63.	I am a leader in games and sports	Yes	No
64.	I am clumsy	Yes	No
65.	In games and sports, I watch instead of play	Yes	No
66.	I forget what I learn	Yes	No
67.	I am easy to get along with	Yes	No
68.	I lose my temper easily	Yes	No
69.	I am popular with girls	Yes	No
70.	I am a good reader	Yes	No

- | | | | |
|-----|---|-----|----|
| 71. | I would rather work alone than with a group | Yes | No |
| 72. | I like my brother (sister) | Yes | No |
| 73. | I have a good figure | Yes | No |
| 74. | I am often afraid | Yes | No |
| 75. | I am always dropping or breaking things | Yes | No |
| 76. | I can be trusted | Yes | No |
| 77. | I am different from other people | Yes | No |
| 78. | I think bad thoughts | Yes | No |
| 79. | I cry easily | Yes | No |
| 80. | I am a good person | Yes | No |

Score: _____