

EFFECTS OF A COORDINATED LABORATORY
CLASSROOM APPROACH TO THE
TEACHING OF READING IN
GRADES 3, 4, 5

By

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PREFACE

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CHAPTER I

INTRODUCTION

As a consequence of the "knowledge explosion" in contemporary society it is increasingly necessary that citizens read with understanding, insight, and critical analysis. Children entering public schools should have at their disposal an instructional program in reading that allows them to develop their reading potential to the maximum.

Tinker and McCullough (1975) commented that:

An expanding curriculum and changing methods of instruction in present-day schools as well as a world that demands more reading, have increased the need for a greater amount and a wider variety of reading. At all levels of education reading should be both a subject of instruction and a tool employed in studying other subject-matter (p. 7).

Kipling (1967) stated that to provide this kind of reading instruction consideration must be given to two areas: 1) A program of reading based upon sound philosophy and research and 2) an organizational pattern that will permit the staff to function most effectively within their schools.

The late Dr. James E. Allen, Jr., serving as United States Commissioner of Education proclaimed this belief:

We should immediately set for ourselves the goal of assuring that by the end of the 1970's the right to read shall be a reality for all--that no one should be leaving our schools without the skill and the desire necessary to read to the full limits of his capability (1970, p. 277).

Aukerman (1971) wrote:

Generations of Americans lived and learned to read by drill on ABCs, on the Horn Books in bleak colonial schoolhouses by couplets of the New England Primers, and by purposeful recitation of moral verse from McGuffeys Eclectic Readers . . . (p. 1).

. . . yet changes took place with ever-increasing speed, until now the English-speaking world is literally inundated with a flood of materials, methods, and proposals. Some of the new approaches modestly claim partial answers to our problems of teaching to all children of school age; others claim full scale success; and a few appropriately boldly ask to be heard and tried (p. 32).

According to Heilman (1972) this could be called the "frenzied search" . . .

The search was based on the false hope that there just might be a panacea for the ills which beset reading instruction. This false hope leads to many unproductive responses such as excessive concern with trivia, unwarranted loyalty - or hostility - to labels without concern for substance, or childlike faith in "break-throughs" which later proved to more of a triumph for Madison Avenue than for children in the classroom (p. 32).

Thus, the question remains: what direction should a school reading program take in terms of organizing equipment, materials, personnel, diagnostic and prescriptive techniques, testing, and classroom procedures in a productive and effective reading effort? Aukerman (1971) believes that "any proposal should stand the test of scientifically-designed, carefully planned, and honestly reported research" (p. 1). New concepts and approaches in the field of reading which will significantly lower the percentages of reading deficient students are needed.

Significance for the Study

Perhaps nothing underlines more clearly the need to keep basic research available than does the rapid growth of instructional materials in the reading education field over the past ten years. The teachers

required to use these new materials may often be ignorant of the programs' theoretical base and practical applications. If teachers are well acquainted with both the theoretical and practical findings of past research, needless duplication of study can be avoided and research can proceed in an orderly and systematic manner.

Weaver (1969) noted that the body of reading research has not produced theoretical structures which would give any confidence that interchange between research and theory is going on. He argues that, "there has been little dialogue between research and theory in the reading literature at present" (p. 5). Brauner (1964) stressed a need for conceptual research which he called, "the missing link between a logical-speculative tradition prematurely abandoned and the body of immediately useful fact without theoretical portent" (p. 3).

Historically, reading programs, research, methods, approaches, techniques, systems, procedures, materials, equipment, and services have been aimed within a singular emphasis. Elementary schools may be using a basal reader as their main approach with limited non-referenced supplementary materials. A lack of cross referencing of skill development to the basal reader used in the reading approach may result in fragmented and non-sequential instruction. A study is needed to integrate some of the written material and to provide statistical data as a reference point for future reading programs. New reference points require a conceptual framework that will provide for sound implementation based on adequate research. Theoretical constructs based upon an intelligent understanding of collected data are needed in giving these strategies structural unity. It was in recognizing this need for new reference points in reading research that this study was formulated.

The purpose of this study was to determine the effects of a Coordinated Laboratory Classroom Approach to reading in a setting of specifically defined variables. It was not the intent of this investigator to outline a universal remedy for student reading problems, but to enhance future reading programs and contribute to the literature in the field of reading.

Definitions, Assumptions, and Limitations

Definition of Terms

The definitions of the terms used in this study were representative of the usage observed in the literature and reflected the appropriate synonyms and contextual variations.

Teachers of Reading: Teachers of reading are those teachers who spend a majority of their teaching day in activities specifically related to reading instruction, either with students or other teachers. They are sometimes referred to as school reading consultants, reading specialists, and reading coordinators.

Administrators: Administrators include those principals of elementary schools who have teachers assigned to their staff on a full- or part-time basis for the purpose of teaching reading skills.

International Reading Association (I.R.A.): The I. R. A. is an international association comprised of members concerned with the teaching of reading, especially as it is practiced and encouraged through instruction and supervision in schools. The journals of the I. R. A. provide a forum for the exchange of information and opinion in the exploration of interests in reading.

Authorities: Authorities in the field of reading include, but are not limited to, those experts whose writings have appeared in the publications of the International Reading Association. Supplemental research from other professional books and journals was considered authoritative when cited by I.R.A. authors. Other research was reported when it added additional insight to the goals advocated by authorities.

Reading: The process of symbolic interpretation, i.e., the process of comprehending the sense of written language by interpreting the characters with which it is expressed (Powers, 1973).

Skill: The internalization of a habit, i.e., the ability to perform primarily on a subconscious level without conscious analysis.

Non-Referenced Reading Instruction: Refers to a lack of cross-reference of skill development materials to the basal or co-basal currently used in the school.

Approach: The phrase 'approach to reading' has recently been used in a variety of ways without acquiring any accepted definition. In different contexts it has been employed to mean a method, a medium, a reading scheme or a set of equipment.

Traditional Reading Programs: Conventional reading programs can be identified as utilizing a singular or modified-singular approach with limited or no cross-referenced supplemental activities; they are non-directional in terms of school-wide effort and the basic objectives of accountability.

Coordinated Laboratory-Classroom Approach: The Coordinated Laboratory Classroom Approach may be defined as a total school personnel effort to teach reading using a variety of cross-referenced instructional materials, techniques, and methods in a positive environ-

mental setting. Cross-referenced materials include, not exclusively, reading contracts, programmed materials, skill boxes, dramatizations, library usage, multi-level texts, newspapers, records, tapes, diagnostic-prescriptive programming. The Coordinated Laboratory Classroom Approach has three distinct facets: 1) a reading developmental laboratory, 2) classroom instruction, and 3) an exchange of laboratory and classroom faculty-student personnel. Five graphic displays (Figures 2-4) will follow to further the definition of the Coordinated Laboratory Classroom Approach.

Assumptions

An assumption of this study was that the tests utilized were valid; that is, the tests actually measured the skills learned by the students in reading vocabulary and comprehension. Similarly, a second assumption is that the attitudinal survey accurately measured the degree of attitude change in the students toward the reading process. A third assumption is that there were no differences between schools. If a difference exists, it is attributed to the teaching methodology. The schools for this study were matched by computer analysis of several variables. A fourth assumption is that there were no differences between teachers in the same school. Fifth, the generalizability of the study to a larger population rests on an assumption that the sample chosen is representative of the population at large.

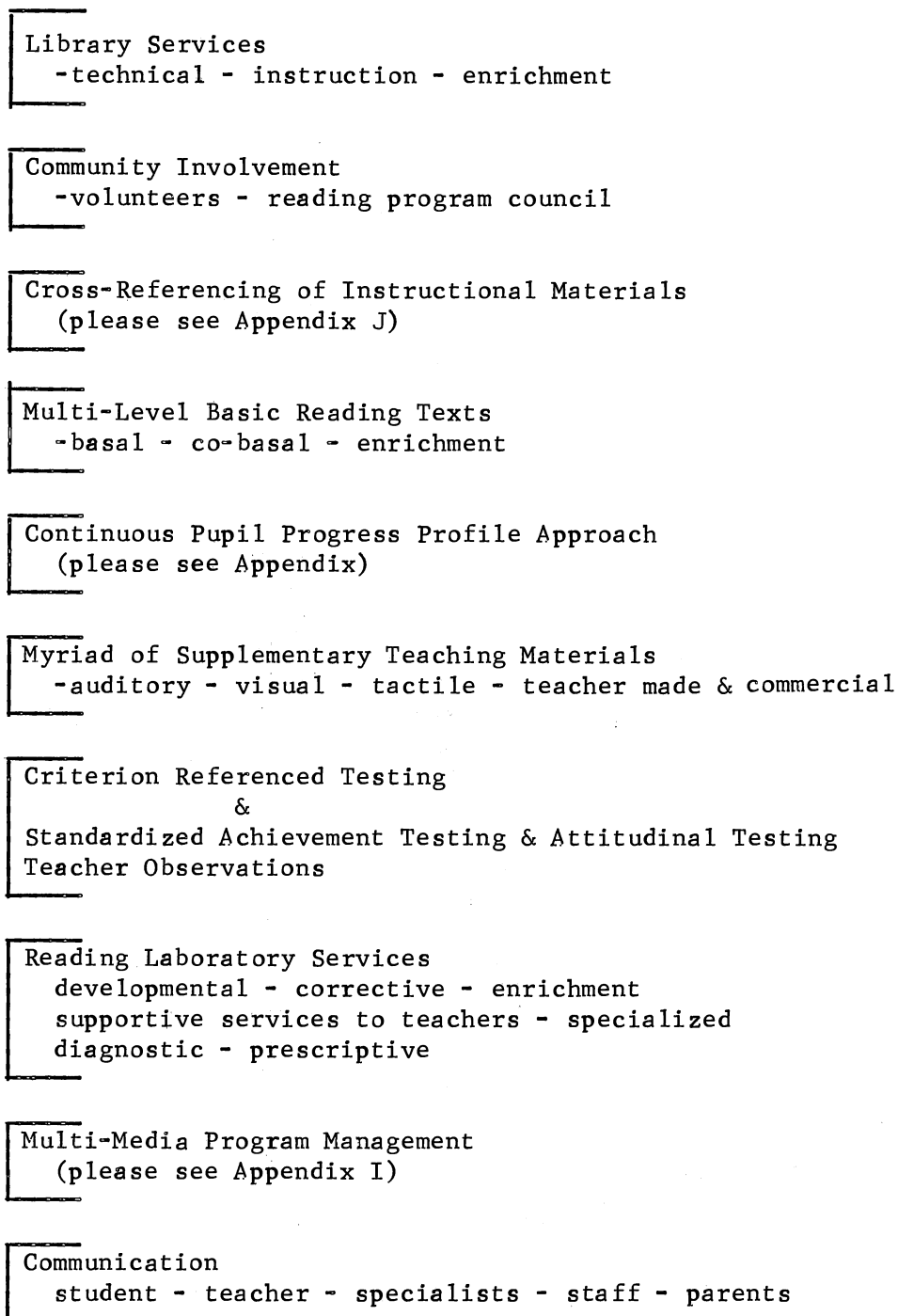
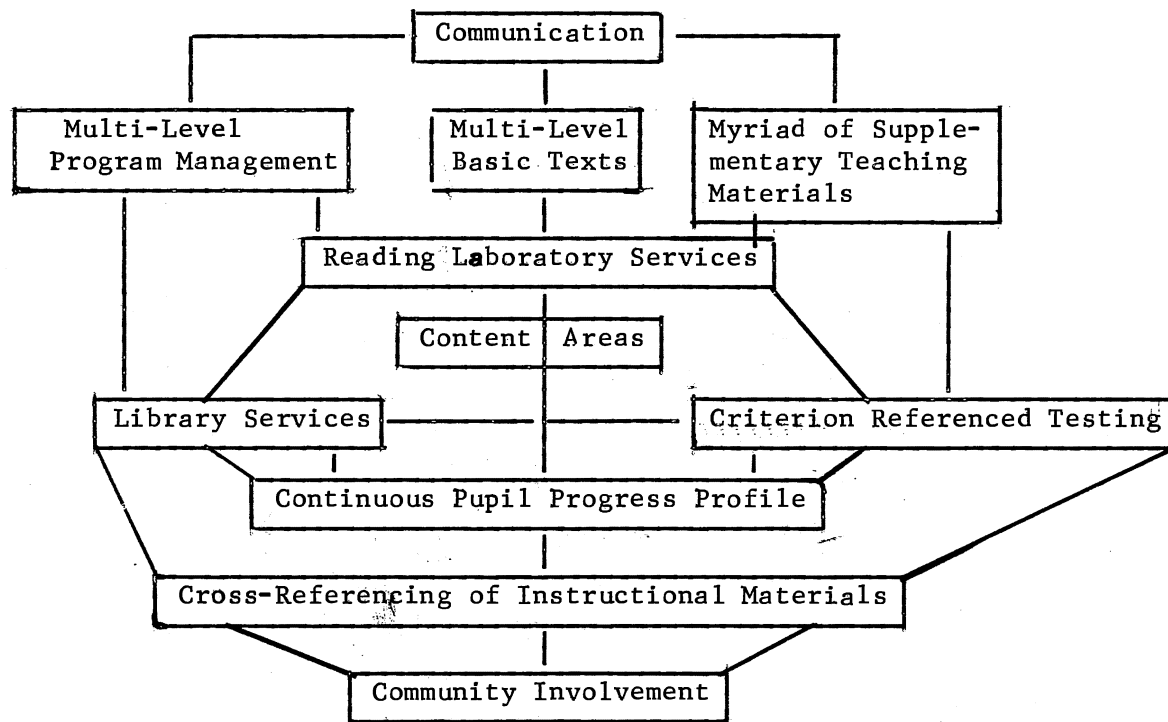


Figure 1. Components for Coordinated Laboratory Classroom Approach



Model Description: This figure is outlined to facilitate communication between all components. The figure represents a "totality," or total systems approach to a school reading program. Each component is defined as a "system" by this researcher.

Figure 2. Coordinated Laboratory Classroom Approach Model

THE READING LABORATORY

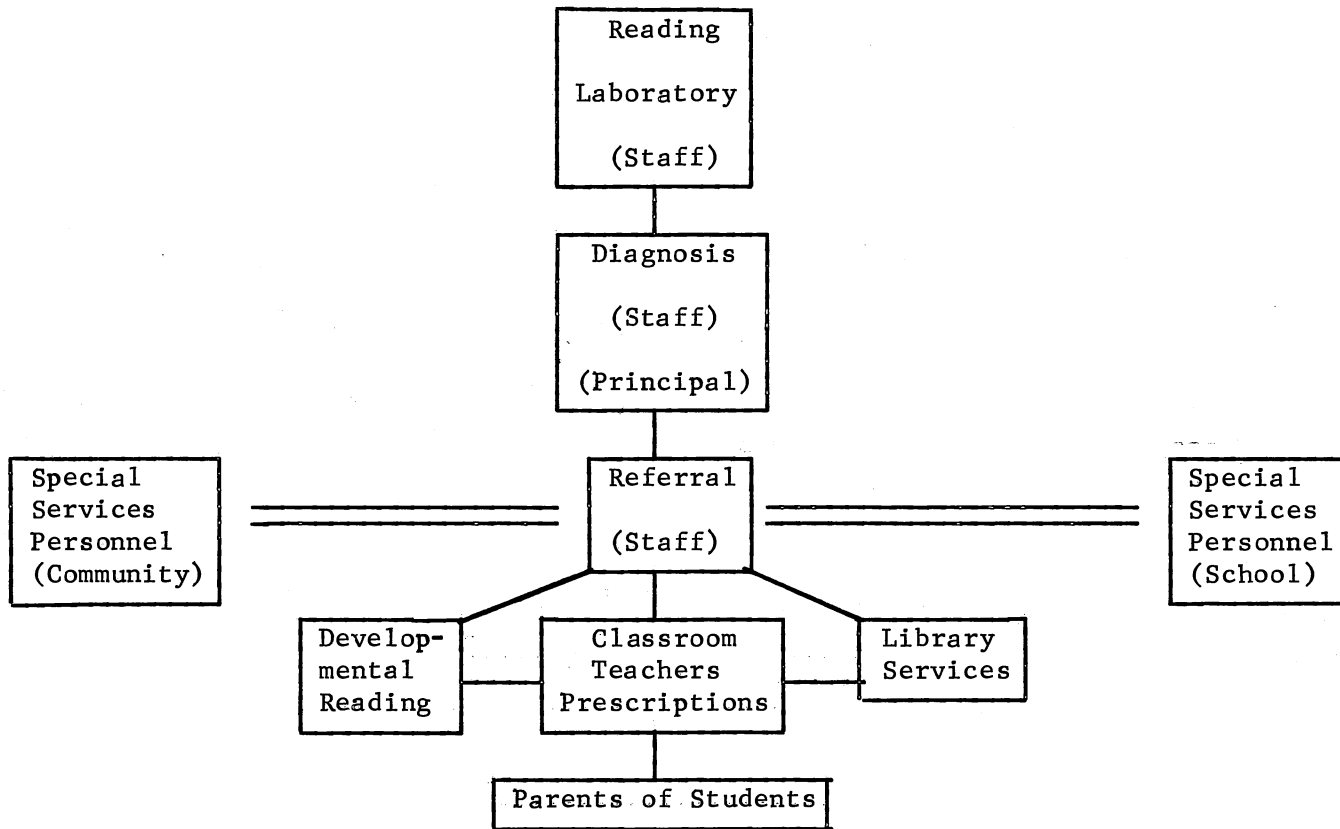
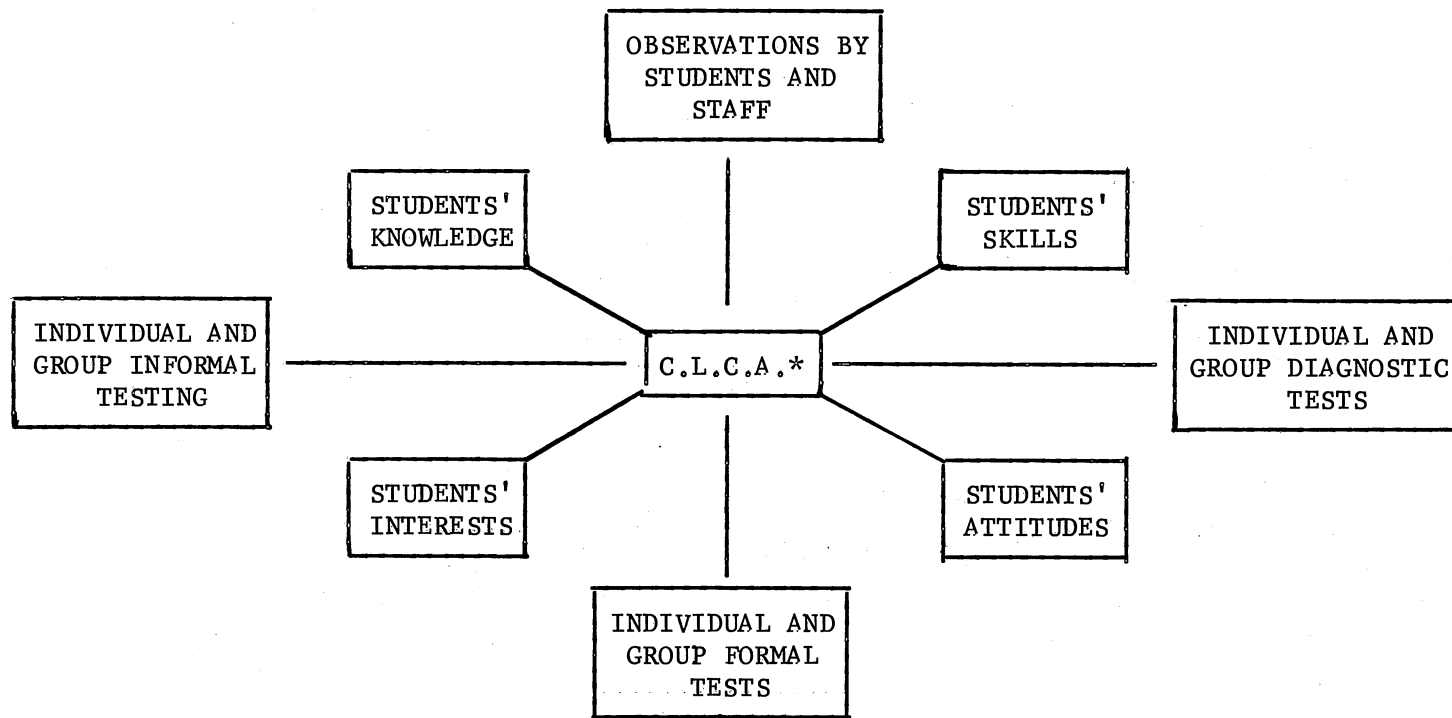


Figure 3. Communication Model C.L.C.A (Coordinated Laboratory Classroom Approach)



*Coordinated Laboratory Classroom Approach

Suggested by:

McDonald, Thomas F. "An All School Secondary Reading Program,"
Journal of Reading, May 1971, 552-557.

Figure 4. Student Progress Facilitation Model

Limitations

As many variables as plausible were identified to isolate a "matched" school for the experimental group of students. Obviously, however, finding two samples of schools alike in all respects, thus controlling all intervening variables, is impossible.

Time factor pre-tests for this research were given in September, 1974, and post-tests were given in early May, 1975. It is possible that a short duration of the testing period would yield different results as compared to a two-year study. However, the loss of observations (students) to normal attrition would also have been greater. Therefore, the findings of the study cannot be generalized beyond a one-year exposure to the treatment. As is true in any innovative process, the findings of the study will be confounded with a possible Hawthorne effect.

Purpose of the Study

The purpose of this study was to determine whether children in grades 3, 4, and 5 will demonstrate gains in vocabulary, comprehension, and attitudes toward reading after involvement in a Coordinated Laboratory Classroom Approach to the teaching of reading.

Answers to the following questions will be sought:

1. Do students who have received reading instruction with a Coordinated Laboratory Classroom Approach in grades 3, 4, and 5 show a differential gain score in reading comprehension when compared to matched students who have received traditional reading instruction with little or no coordinated-teacher-laboratory involvement?

2. Do students who have received reading instruction with a Coordinated Laboratory-Classroom Approach in grades 3, 4, and 5 show a differential gain score in reading vocabulary when compared to matched students who have received traditional reading instruction with little or no coordinated-teacher-laboratory involvement?

3. Do students who have received reading instruction with a Coordinated Laboratory-Classroom Approach in grades 3, 4, and 5 show a differential gain score in attitudes toward reading when compared to matched students who have received traditional reading instruction with little or no coordinated-teacher-laboratory involvement?

Statement of Hypotheses

This study proposed to test the following hypotheses:

Hypothesis I

When gain scores on the Iowa Test of Basic Skills/Comprehension and the Iowa Test of Basic Skills/Vocabulary are considered jointly, there is no significant difference between students instructed through the traditional approach and students instructed through the Coordinated Laboratory-Classroom Approach.

Hypothesis II

There will be no significant differentiation in gain score between traditional and Coordinated Laboratory-Classroom Approach reading comprehension instruction experienced by the students in grades 3, 4, and 5, as measured by the Iowa Test of Basic Skills.

Hypothesis III

There will be no significant differentiation in gain score between reading vocabulary and Coordinated Laboratory-Classroom Approach instruction experienced by the students in grades 3, 4, and 5, as measured by the Iowa Test of Basic Skills.

Hypothesis IV

There will be no significant differentiation between the attitude of students taught by traditional and Coordinated Laboratory-Classroom Approach instruction in grades 3, 4, and 5, as measured by the Iowa Test of Basic Skills.

Procedures and Organization of the Study

Procedures

Two schools were identified by the Director of Research and Evaluation of the Wichita Public Schools, Kansas. The schools were matched according to size, academic achievement based on grades 3-6 results on the Iowa Test of Basic Skills, education level of parents, and family income level. The Coordinated Laboratory-Classroom Approach was administered to students at Garrison School and traditional reading instruction was used with Caldwell School.

Pre- and post-test forms of the Iowa Test of Basic Skills were administered to approximately 300 students in grades 3, 4, and 5. Pre- and post-test forms of the Estes Attitude Scale in reading were used to measure affective attitudinal characteristics of the students.

Organization of the Study

The study contains five chapters. An overview of the study has been presented in Chapter I. A review of the literature is given in Chapter II. In Chapter III, the procedure, design, population, instrument, and management of the data are discussed. The results of the data are analyzed in Chapter IV. A summary of the study, including implications and recommendations for further research, is presented in Chapter V.

Recapitulation

An overview of the study was given in this chapter. Studies were cited which indicated that there is a need for more effective reading teaching programs and that present efforts tend to be inadequate. The purpose of the study was to determine the effects of a Coordinated Laboratory Classroom Approach to reading in a setting of specifically defined variables and assumptions. The need for such conceptual and statistical research was cited.

The definitions of the terms used in the study were considered representative of the usage observed in the literature. Assumptions and limitations of the study were cited.

The procedures used in the study included pre- and post-test examination of reading vocabulary and reading comprehension of students in grades 3, 4, and 5. Attitudinal testing was also conducted to measure the students' attitudes toward the reading process.

The results of the data will be found in Chapter IV. A summary of the study, including implications and recommendations for further research, will be found in Chapter V.

CHAPTER II

REVIEW OF THE LITERATURE

An ERIC search utilizing the descriptions of reading laboratories, reading clinics, reading centers, and developmental reading was made. Abstracts were reviewed in an attempt to identify research or programs using either traditionally-oriented or singular approaches to the teaching of reading.

Special attention was given to the publications of the International Reading Association. Material accepted for publication by this organization has met the editorial and research criteria of a staff of experts who have received international recognition for their professional contributions to the field of reading.

The literature related to the study will be organized into three areas: (1) literature pertaining to singular approaches, (2) literature pertaining to programs utilizing reading centers and reading clinics, and (3) literature related to learning theories from which the Coordinated Laboratory-Classroom Approach was considered.

Literature Pertaining to Singular Approaches

Morrison (1970) observed that after a seven-month research period, the reading achievement level of 12 matched pairs of second grade students of the experimental group who received one hour of clinical instruction daily, had a significantly higher gain score on a standard

achievement test and a diagnostic reading scale. A significant difference in attitude and motivation was also recorded.

In 1971 Hartford, Connecticut schools set up three intensive reading instructional teams and provided small group reading instruction to 363 students. The program was departmentalized with team members specializing in one of the three instructional areas: language development and individualized reading, decoding and word-attack skills, and vocabulary-comprehension development. Improvement gains were significant at the .01 level. The test data were substantiated by an analysis of parent and teacher evaluation forms only.

Smith (1970) proposed that the reading specialist work with the teacher in the regular classroom, rather than conduct a separate program in another room, to facilitate early reading problem identification and instructional continuity. No statistical data are available on the program.

Humphrey (1971) designated a reading program that would mobilize many areas of a school's operations. A directionality of purpose and approach to the instructional process was outlined. However, a field-tested study was not conducted to portray its effectiveness as a reading program approach.

The Golfview Program (1972), called Correlated Reading Instruction and Inservice Training, utilized an individually prescribed reading lab program with on-going inservice training for teachers. There were no statistical data presented for the program.

Singular approaches in specialized reading areas were also reviewed and analyzed. After an extensive investigation of the relationship between auditory discrimination and reading achievement, Dykstra (1968)

found relatively low correlations (under .43) between discrimination and word recognition. He concluded that developing the auditory discrimination of pupils will not be sufficient to insure their learning to read. Wheeler and Wheeler (1970) also found correlations between auditory discrimination and reading in the same range as Dykstra and concluded that at the intermediate grade level there was no reason to believe a substantial relationship existed between discrimination and reading.

Reynolds (1953) gave elementary students tests for blending and word-pair discrimination. Although he found blending ability not highly related to reading ($r = .10$ to $.40$), he found word-pair discrimination to be more closely related to reading level. However, when multiaudle analysis was partialled out, the correlations were not significant. He concluded that none of the measures of auditory discrimination adds significantly to multiaudle analysis for purposes of prediction.

Robinson (1972) compared reading progress of third grade pupils with varying degrees of low-high auditory and visual abilities with a sight versus phonic approach. It was found that neither method for teaching reading surpassed the other. Only one significant difference was found; the sight group scored less than one point higher on one test than the phonics group. Other mean score differences were not significant.

Literature Pertaining to Programs Utilizing Reading Centers and Reading Clinics

Engh (1972) described an "Inner City's 'total' Approach" of a reading center program. While improvement in a child's reading skill

is central, the program has a much broader impact, helping the child develop mentally, emotionally, and in personality. However, no professional or statistically documented assessment is available on the program.

The Topeka Reading Clinic report (1971) has identified its reading centers, clinics, and services program as one of diagnosing reading disabilities and designing remedial programs. The remedial reading teachers affiliated with the clinic give inservice training to reading teachers in the schools in such skills as diagnosing teaching techniques, choosing materials, and writing learning sequences. Students showed an average gain in reading level of 2.98 months per program month as measured by the standard reading inventory. In 1969-70, 845 students showed an average gain of 1.9 months per month in the program for grades 4, 5, and 6.

The literature reveals that the idea of a clinic for reading instruction is not new. Sherk (1968) reported that:

The first clinic for remedial instruction which came to the attention of the writer was established in 1921 at the University of California, Los Angeles. Grace M. Fernald who had previously been working with deficient readers was eventually given a room in the University Training School. From this developed The Clinic School which later became part of the University Psychology Department. Other universities had not yet developed special reading clinics such as those that became numerous in the period from 1950-1965.

Some public school systems, however, were laying the groundwork for later developments (p. 352).

Sherk also quotes Gray from an earlier publication as follows:

In order to provide classroom teachers with expert help, several cities have established educational clinics where detailed diagnostic studies are made and have also provided a special room where remedial instruction is given (1922).

Because the needs of many poor readers cannot be determined readily through classroom diagnosis, institutions and school systems in increasing numbers are establishing educational clinics. These clinics are rendering a very valuable

service as shown by the work of Baker and Leland in Detroit, Betts in Shaker Heights, Ohio, and Witty at Northwestern University.

The term 'clinic' was still used loosely in the period 1935-1940 to cover many situations, psychological and educational. However, having reading clinics in the public schools evidently was the beginning of a trend, according to Smith, in this period. A glimpse of the status of reading clinics can be obtained by this quotation which appears in the Thirty-Sixth Yearbook, Part I, of the National Society for the Study of Education, published in 1937.

The tendency to establish reading clinics for intensive study of serious cases of reading disability is one of the newer developments associated with improved supervision of reading. In one city at least three reading clinics have been established. In another city remedial classes under cadet teachers have been organized in junior high schools and senior high schools; furthermore, reading clinics for elementary schools and junior high schools have been established and provisions have been made for training teachers in remedial reading. The practices in these cities illustrate the tendency to make the best possible use of clinical methods of diagnosis in the discovery of causes of reading. (p. 352).

Churchill (1968) suggests that reading clinics derive their existence from the needs of the school reading program. When students are unable for diverse reasons to progress satisfactorily through the regular developmental reading program, there is a need to provide diagnostic and remedial procedures which will enable the student to read at a level that could be expected of him. If remedial instruction is to be effective, the clinic cannot function as an isolated island for retarded readers but must be cognizant of the students' school environment, work closely with classroom teachers, and utilize multidisciplinary talents in helping students. The clinic program is justified to the degree that it contributes to effective resolutions of reading difficulties.

Churchill continues to point out that:

the clinic has a responsibility to each student to see that pertinent and clear communication occurs among clinic, teacher

principal, parent, and student so that diagnostic findings and instructional recommendations are implemented. The instructional and emotional needs of the student must be of common knowledge and emphasis in regular classroom activities as well as in the clinic (1968, p. 368).

Humphrey again declares that:

Communication is a vital part of the management functions. Plans or innovations cannot be achieved until they are communicated to those who will have a part in implementing them. If the whole team is involved in setting objectives, then communication will be more efficient because all are informed of the plans for the reading program. Communication is only one important factor in a successful reading program (1971, p. 4).

The Milwaukee Public Schools (1966) have operated a reading improvement program in numerous centers for a number of years. These centers take the reader at his present level of achievement and allow him to move as rapidly as possible to a level of reading achievement commensurate with his potential or capacity. Special activities involving small groups and individual instruction are included. Each pupil is helped to see evidence of his own improvement. It is also considered important to increase his self-image, motivation, and direction. Pupils in the evaluation sample who received the added services of the reading center together with its special help in reading made a mean gain of five months in a 3½ month period.

Literature Related to Learning Theories

From Which the Coordinated Laboratory-

Classroom Approach was Considered

The instructional approach of a Coordinated Laboratory-Classroom Approach discloses a learning theory similar to the integration of activities characterized in Gestalt Psychology. The literature cited in this section is comparable to the integrated approaches of Gestalt

Psychology in conjunction with the Coordinated Laboratory-Classroom Approach to the teaching of reading.

Shubkugle (1970) declares that "Reading is an aspect of the total language emergent process. It is not a set of skills to be studied apart (p. 8). She concludes that "Reading is an integral part of the teaching-learning process and to isolate it does damage to the basic theory from which our basic teaching practices originate" (p. 8).

Southgate and Roberts (1970) have ascertained that:

The teacher who is helping the child to master the task of learning to read is doing so in a particular situation. Numerous factors present in this situation are related both directly and indirectly to the teacher's choice to an approach to reading. Among the broader background features of the reading environment should be listed the type of school or educational institution in which the reading is to take place and the area in which it is situated. At a closer level, physical features of the actual space in which the learning will be undertaken, such as the size of the room, the furniture and fixtures, and the space available for the movement of the children are all relevant. The number of other children present in the teaching-learning situation, and the ways in which they resemble or differ from the child in question, also represent important factors in the environment. But the situation which represents the teaching-learning unit is not merely an inanimate backcloth made up of room, furniture, and other children, in front of which teacher and child concentrate on task. The 'climate of the school' and the beliefs of the teacher combine to produce, within this physical environment, a definite pattern of procedures. This is a dynamic situation, of which the teacher, the learner, and the task are integral parts comes into existence. Accordingly not only the separate features of the environment but also their interactions within this dynamic situation constitute important factors influencing children's reading progress (p. 56).

Humphrey (1971) expressed that the management of a reading program should be based on objectives rather than tasks. There are eight functions that apply to successful management: planning, organization, staffing, direction, control, innovation, representation, and communication. The R3C concept (reading coordinator, committee, reading center)

is helpful to delegate the responsibilities for the reading program to individuals or smaller groups. The coordinator would act as the leader of the reading program. Teachers from different grade levels should be put on the reading committee to help and advise the coordinator. The school reading center would contain materials available to all teachers in the school. Its function would be to help the teachers achieve the goals of the reading program by making them aware of what resources are available, improving the center environment and simplifying check-out procedure. The principal would meet with the reading committee to analyze needs and agree on goals, then the coordinator might begin detailed planning and other functions with the reading committee. All goals are mobilized to motivate the total student population.

William James (1890) minimized the role of inner driving forces as the source of human motivation. For James, motivation resides in an act of will or determination "Begin with the line of his natural interests, and offer him objects that have some immediate connection with these" (p. 69).

Dewey (1913) felt constrained to emphasize that interest and effort are not contradictory, but that effort is naturally founded upon interest.

Thorndike (1906) recognized interest as a motivating force.

We depend upon interests to furnish the motives for the acquisition of knowledge and for the formation of right habits of thought and action . . . The problem of interest in teaching is not whether children shall learn with interest or without it; they never learn without it; but what kind of interest it shall be; and from what the interest was derived. When an individual is attracted by the intrinsic qualities of the work, his interests may be called immediate or intrinsic; when the work does not interest him in and of itself but only by its consequences or connections, the interests may be called derived (pp. 51, 54).

Kilpatrick (1925) stressed the need for intrinsic motivational incentives that are superior to extrinsic incentives. Kilpatrick gives three reasons for preferring them:

When we engage in an activity in answer to a merely extraneous and extrinsic incentive we are interested not primarily in the activity but in the incentive. We are concerned in having children build up interests in what they do for its own sake and not for an extrinsic incentive. Activity intrinsically interesting leads to a unified or integrated self (p. 292).

This integration and unification of activities is characterized in Gestalt Psychology. Wertheimer (1945) defined a Gestalt as:

. . . a whole the behavior of which is not determined by that of its individual elements but where the part processes are themselves determined by the intrinsic nature of such wholes (p. 112).

Duncan (1953) examines more definitively the actual instructional approach to Gestalt theory by his summarization that "we tend to see the whole pattern before we see the part of it . . . This tendency to see "wholes" is emphasized in the Gestalt hypothesis" (p. 53).

Recapitulation

The review of the literature for this chapter was organized into three main areas: (1) literature pertaining to singular approaches, (2) programs utilizing reading centers and reading clinics with data, and (3) literature related to the Coordinated Laboratory-Classroom Approach.

In this review of selected literature, special attention was given to literature in the field of reading exhibiting a high level of approachability to a Coordinated Laboratory-Classroom Approach. The literature review indicated the following concepts.

1. The research related to this study yielded few or no statistical treatment results.
2. Attention was given to the identification of several concepts of learning theory to reading instructional programs.
3. Most of the available literature centered around reading centers or reading clinics.
4. The literature implied that studies available on a concept similar to the Coordinated Laboratory-Classroom Approach were limited.

Although hundreds of reading programs and research were analyzed, only the research which appeared pertinent to the Coordinated Laboratory-Classroom Approach were selected for the review of the literature. To conclude, the research appears to be remiss in this particular area of reading curriculum design and innovation. Hence, this research examines the Coordinated Laboratory-Classroom Approach, and its effects in the realm of reading education.

CHAPTER III

DESIGN OF THE STUDY

This study was undertaken to measure the effects of a Coordinated Laboratory-Classroom Approach to the teaching of reading in grades 3, 4, and 5. This chapter will provide a description of the subjects, treatment of the subjects, instrumentation, and the method of collection.

Subjects

Permission to study the effects of a Coordinated Laboratory-Classroom Approach to reading as compared to the traditionally-oriented reading instruction was granted on August 26, 1974 (see Appendix A). Permission was also granted on this date for use of the school system computers to seek the statistical and data collection service to identify a matched experimental school for the treatment school under study.

A comparison school was identified by the Division of Research and Evaluation Services utilizing the characteristics of: school size, based on official enrollment reports; academic achievement of pupils, based on third grade through sixth grade results on the Iowa Test of Basic Skills; educational level of the parents and family income level, both based on information contained in the County Assessor's annual enumeration data; and geographic residence of bussed-in pupils, based on computerized transportation lists. It was the conclusion of the

research specialists of the school district that while no other elementary school matched the treatment school perfectly, Caldwell Elementary School probably came closer on the above listed measure (see Appendix B). School Principals in both selected schools were notified of the impending research study to be conducted.

Students in grades 3, 4, and 5 of the two elementary schools comprised the subjects for this study. Approximately 300 subjects provided data for the investigation which comprised the experimental and control groups. The entire student population in grades 3, 4, and 5 of the experimental and control groups were tested.

The control group was identified by computer analysis provided by the Research and Evaluation Division of the Wichita Public Schools. The experimental and control groups are housed in two elementary schools in Wichita, Kansas.

Students in the experimental school received the treatment of a Coordinated Laboratory-Classroom Approach to the teaching of reading. The students in the control school received traditional reading instruction.

None of the subjects were informed beforehand that they were to be given reading examinations. Neither were any of the students told beforehand that they would be involved in a special reading program. Even after the pre-tests had been conducted, no indication was given to the experimental or control group that they would soon be involved in a special reading program.

Treatment of the Subjects

The young reader can be helped to sense the significance and scope of reading through a total curriculum reading program which integrates all disciplines and combines the efforts of staff, pupils, and community. This heading describes the implementation of a Coordinated Laboratory-Classroom Approach for the teaching of reading.

The program included four categories: (1) intensive needs assessment; (2) project identification and implementation; (3) affective dimension; and (4) involvement of the community.

Formal and informal discussion sessions with the staff were used to take a thorough look at the reading needs of students at Garrison School. Questionnaires were sent to parents to discover their concerns about their children's reading needs. Teachers who were not connected to the reading project used a checklist while interviewing teachers who were involved in the program (see Appendix I). Students were interviewed and given reading questionnaires to determine their attitudes toward reading. Standardized skill tests in reading vocabulary and comprehension were analyzed. Special areas of concern identified from the standardized tests were noted for later diagnosis by the staff. The data were collected and presented to the entire staff for evaluation and planning.

Following the needs assessment, a coordinated laboratory-classroom system approach was begun. The reading laboratory was used as the focal point for teachers and students, providing materials for the classroom teacher, before and after school service for students, guided individual instruction for students with targeted reading problems, large group instruction in reading enrichment, small center areas for pleasure

reading, and manipulative materials for students. To encourage and expedite communication to and from the classroom and within the community, the special reading teacher's efforts were low-key, whether in a supportive role to other teachers or in a directive role in the classroom.

Constant communication among all persons involved in the project was essential to its success. Monthly "rap" sessions by the staff helped keep track of organizational goals.

Both the lab and the classroom used diagnosis and treatment in the areas of phonetic analysis, structural analysis, vocabulary development, comprehension, and study skills. Teachers pre-tested and continuously retaught, then post-tested critical areas. The prescriptive component of the program approached basic reading skills through letter recognition, common noun pictures, basic sight words, and phonetic analysis. Tasks progressed from easy to difficult and encouraged maximum student involvement. The complementary prescriptive system consisted of kits teaching auditory-visual discrimination, phonetic analysis, structural analysis, and vocabulary development. These kits provided sequential training and extended practice for those students who had not mastered these skills.

An instrumentation system, using basic sight vocabulary word phrases and discovery spelling on film, stressed visual retention and word memory by sequence learning. Special visual machines provided students with a variety of perceptual experiences. The system attempted to develop positive attitudes in students about their ability to learn.

Most importantly, all of these systems and approaches were referenced to each other and to the multilevel reading tests (see Appendix C).

A teacher could refer to several prescriptive approaches for any single child. The behavioral reading objectives found in classroom planning books were referenced to an interdisciplinary approach (see Appendix J). For example, the science unit on chemical reactions using a student-prepared cooking lesson was structured for purposeful reading instruction. The reading of ingredient labels, the intent of the recipe, and even the sequential process of left-right or up-down columnar reading were integrated into the lesson. The physical education program was used to help teach directionality, laterality, spatial relations, and left-right and hand-over-hand coordination.

Some of the features of the total curriculum reading program were the library media center, the use of typewriters, a school postal system, pleasure reading areas, photography, and music.

In establishing the library media center, the whole concept of the traditional library program was changed to meet new demands. Increased instructional time in the library was given to all classes. Listening and viewing areas were set up with tapes, filmstrip viewers, 8mm films, and records for small groups who were sent to the library. A "Learning Center Library" was created to break up the traditional library formality. A library game interaction program was set up for students. A library checkout service was made available to the community before and after school. A storytelling hour before school was begun. Interest in books was sustained by the increased use of color and realia items. A paperback book section became operational.

Typewriters for classrooms were donated from non-school sources, borrowed from surrounding high schools, and purchased by interested supporters in the community. An electric typewriter was donated for use

in the kindergarten room. Manual dexterity skills were gained by students involved in typewriter instruction. Finger placement, key structure, and typing skills were taught to all students by classroom teachers and parent aides. Students began typing stories, assignments, letters, and high frequency words with their new skill.

A school postal system was established to encourage writing skill development and language expression among students. Students set up their postal station in the central hallway using their own postal service insignia, commemorative stamp charts, and even "wanted" posters. Letter forms and envelopes were mimeographed. The school's own postage stamps with adhesive backing were printed by a local printing company that donated its services. Classroom mailboxes were made by the school custodian from empty boxes and were anchored near the doorways for easy access. Students handled all phases of delivery and letter cancellation, learning alphabetizing and sorting skills while carrying out their roles in the post office. The significant aspect of the post office revealed itself in cooperation and understanding between primary and intermediate grade students in the above-mentioned areas.

Bathtubs with cushions, picnic tables with colorful awnings for springtime reading, thirty gallon paper barrels with cutout sides for "sit in" reading, a parachute hung from the ceiling for "drop in" reading, and carpets made by students for individual reading areas were all places where students enjoyed books. Small electrical spools donated by a local electrical firm were used for small reading circles. Overstuffed chairs and sofas, tables, and lamps were donated by parents who were interested in the reading space concept.

Photographs of students involved in daily activities were displayed in an effort to enhance individual and group self-concept. Many photographs were provided by the local newspaper which had run several stories on this school's programs throughout the year. Special school activities were also photographed by students with Polaroid cameras and displayed in the foyer for all students to see. Periodically, photographs were given to students for their personal enjoyment.

A close association between reading and music instruction was heightened with analogous concepts of expression, lyrics-poetry, meter-fluency, tempo-reading rate, choral readings, and so on. Music instruction branched out from the traditional classroom techniques to guitar instruction, whole school "song fests," visits by local rock groups, contemporary music instruction, and use of banjos, guitars and percussion instruments by students. The vocal music instructor offered a complementary component to the reading effort with music's many synonymous concepts. Music vocabulary was taught with a "password" game made by the teacher. Rhythm, voice inflection, accents, listening skills, and expression all were focused to support the integrated reading program.

The Affective Dimension

The staff felt they wanted to explore the elements of affective teaching, including institutional humaneness and the positive learning climate of a school. The staff written program was headlined "We're Glad You're Here."

The Headlined words were on floor mats, bulletin boards, doors, and pupil name tags. They were high-lighted on a twelve foot (3.5m)

banner placed in the front foyer. There were "I'm Glad You're Here" stamps for each teacher to use on pupils' daily work.

The "We're Glad You're Here" phrase was a way of life involving parents, teachers, pupils, secretaries, and the custodian in an effort to really listen to pupils and let them know that the adults in school heard them. The staff wanted the children to be involved in their own education. They felt that such an atmosphere would bring self-control among students and enhance learning more than crises discipline could.

Here are some of the suggestions for improving self-concept and developing the theme "We're Glad You're Here":

W henever the opportunity presents itself, "I'm Glad You're Here" stamps are used for students' papers.

E thnic bulletin boards and human relations materials are used extensively.

R emember special days and needs of children in your classroom.

E mphasize successes rather than failures.

G ive pupils tasks which are within their range of competence and ability.

L isten to pupils and let them know you hear them by reflecting what they said. This says, "I'm Glad You're Here."

A cknowledge deviations from acceptable behavior without condemning the child.

D o take positive discussions of children into the teacher's lounge.

Y our assignments should have a relevant purpose.

O n tests and quizzes, mark number correct rather than number wrong.

U nderwrite positive actions of your students by sending at least one positive postcard to parents each semester during the school term.

R emember to appeal to self-esteem and discipline rather than use coercion for maintenance of classroom order.

E nthusiasm toward a child's success builds more successes.

H ave an identification of three goals you will strive for in understanding children and improving instruction.

E ntertain at least three compliments daily in your classroom.

R eveal ways pupils can change failure into success.

E ncourage self-discipline in your classroom.

Birthdays of all students were organized chronologically by data processing into the nine month school term. Students with summer, holiday and weekend birthdays were given "un-birthdays" which coincided with the school term. In this manner, all students were involved in the birthday club.

A special letter addressed to the student was mailed to the home several days before the birthday. The student was requested to present the letter to the teacher. The teacher took the class to the birthday book so they could watch while the birthday student signed the book. Several students, upon viewing their signature in the birthday book from the preceding year, have commented on how their writing skills had improved. The birthday club book had provided a comparison.

Students who were absent from school were sent colorful postcards saying "Your presence is the signal for our class to move forward," with a traffic light emblazoned across the card front. Intermediate students who showed unusual typing proficiency helped with typing the daily attendance reminders. The daily absenteeism was appreciably reduced from the preceding year.

To encourage self-reliant behavior in the students and reduce regimentation, all class bells were removed and students were encouraged to proceed from classroom work areas to all other areas of the school without lines of boys and girls.

Community Involvement

To insure community understanding, special night meetings were held. Each teacher had an opportunity to have parents proceed through classroom learning centers and discuss the school's positive learning programs. Fifteen to eighteen parents were enlisted to help the classroom teachers on a regular basis with individual and small group work and clerical duties.

Mothers with infants who were unable to come to the school to serve as aides were enlisted in a special homebound service of sewing carpet squares, making learning games, and doing special artwork for classroom related activities.

The Parent-Teachers Association was charged with forming new school, parent, and teacher objectives.

The librarian, counselor, speech clinician, lunchroom aides, secretary, parents, principal, teachers, and even the building custodian were included in the total effort. The school secretary displayed trust, helpfulness, and assistance to students in making change, giving direction, assisting the school nurse with bruises and abrasions, comforting the tearful child who lost a permission slip, and assisting the classroom teacher and the principal.

Students saw auxiliary staff personnel, with books in their hands at coffee breaks, interacting with students by asking, "What is your favorite book?" or "Have you finished reading that book you were telling me about last week? I've finished mine." The special reading teacher, the library media center instructor, and the principal were involved at every level of planning, organizing and budgeting. Counselors, speech clinicians, and school nurses formed a vital auxiliary team which identi-

fied, prescribed, and carried out referral decisions on students with special needs. Lunchroom aides had a favorable opportunity to interact positively with students about the enjoyment of books while reducing negative verbal strokes at the same time.

There are enormous possibilities built into the total reading curriculum program. The entire school learning environment emphasized that, "Reading is fun, school is fun and enjoyable. You can be a part of it."

Instrumentation

An introduction was given to the experimental school staff to explain that a research study was to be conducted in their school for grades 3, 4, and 5 as part of the program at the school.

The Iowa Test of Basic Skills (Form 5) standardized achievement test already utilized by the students in the district was identified to measure reading vocabulary and reading comprehension on a pre-post test format. The Estes Attitude Scale in Reading was identified to measure on a pre-post test format the affective-attitudinal domain of the students.

The skills measured by the Iowa Test of Basic Skills are classified into five major areas: vocabulary, reading, language, workstudy, and mathematics. A single comprehensive test is provided in each of the first two areas. Separate subtests are provided for each of four aspects of language development: spelling, capitalization, punctuation, and usage. Three subtests in the workstudy area are concerned with map reading, reading graphs and tables, and knowledge and use of references. In the area of mathematics, separate subtests are provided for mathematics concepts and problem solving.

Each test is continuous, covering the range of achievement development in the elementary school. Six overlapping levels of each test were assembled by combining blocks or modules of test items, each representing an increasingly higher level of skills development. For example, the six levels of the Vocabulary Test are structured by combining ten blocks of items.

This overlap of items between successive grades reflects the overlap in the objectives and content of instruction and provides appropriate continuity in measurement corresponding to that in instruction.

All six levels of each of the elementary subtests are contained in a single booklet. The 96-page booklet contains a total of 1,232 test items. The numbers of items per level range from 374 for Level 9 to 507 for Level 14.

The organization of the battery is presented in Appendix D. It will be seen in this table, for example, that the booklet contains 178 items on reading comprehension. Items 1-60 constitute the Level 9 test, items 12-79 (a total of 68 items) make up the test for Level 10, etc. There is thus one continuous test of 178 items for all levels, but pupils taking each level begin and stop at different points in the test. The subjects of this study were only tested with: Test V, Reading Vocabulary (17 minutes) and Test R, Reading Comprehension (55 minutes). See Appendixes D and E for the explanation of:

1. Construction of the Individual Tests
 - A. Description of Levels
 - B. Test V - Vocabulary
 - C. Test R - Reading Comprehension

2. Reliability of the Test Scores

- A. Methods of Determining, Reporting, and Using Reliability Data
- B. Split-Halves Reliability Analysis
- C. Stability of Scores

Attitudinal Measurement

Development in the affective domain today is widely accepted as a viable objective of educational institutions. The evaluation of effective constructs is a pre-requisite to further development of teaching methodology in the affective domain.

The Estes Attitude Scale was chosen for this study to serve as the basis for attitude evaluation. The Estes Scales to Measure Attitudes Toward School Subjects consist of five 15-item Likert-type scales. Each of the five scales assesses attitude toward one of five content areas. Each 15-item scale may be administered separately and independently or the entire battery may be given at one sitting. Time of administration for the 75-item scale averages 20 minutes. Attitude toward a content area is here defined as a liking for or dislike of a given subject. Thus favorable attitude is evidenced by verbal statements of that nature, tendency to choose and apply oneself conscientiously in subject-related activities, and belief in the value of the subject (see Appendix G). It is true that the observant teacher can often identify those students who feel positively or negatively toward his content area, and the Estes Scales will generally confirm those observations. The primary value of the scales is that they (1) provide an

indication of degree of favorableness or unfavorableness toward a subject area, and (2) are capable of indicating incremental change over a period of time.

Before a test can be used with confidence, it is first necessary to carefully examine the evidence of its validity. Simply stated, "a test possesses validity to the extent that it measures what it claims to measure" (Best, 1970, p. 193).

Content Validity

The Estes Attitude Scale test manual indicated that the content validity of each scale statement was carefully assessed by the "intuitive rational method" described by Hase and Goldberg (1967) to determine its probable relevance to the underlying attitude of interest. Items judged both to measure a broad range of content in each subject area and to have high face validity from the point of view of potential respondents were selected for trial administration. "On the basis of this informal assessment, a total of 150 items, 30 for each of the five target attitudes were subsequently used for the preliminary form of the scales" (Estes and Johnstone, 1974, p. 222). Each 30-item scale was administered to approximately 600 students. Item analyses were performed on these data and the 20 items which discriminated most highly between high scoring and low scoring subjects on each scale were retained for further refinement and testing.

Convergent Validity

To investigate the convergent validity of the Estes Attitude Scales, Johnstone (1974) collected data on six criteria from sample respondents. (see Appendix H).

Method of Collection

Students in grades 3, 4, and 5 in the experimental and control schools were pre-tested in September and post-tested in May with the Iowa Test of Basic Skills and the Estes Attitude Scales.

Statistical Analysis of Data

Reading Vocabulary and Comprehension

The Statistical Analysis System (SAS) was used to process the statistical data. The multivariate analysis of variance (MANOVA) procedure was used to determine whether differences in vocabulary and reading comprehension were actually attributed to the method of instruction.

This statistical test was used since the response variables are probably not independent. Only if the multivariate analysis of variance supports the existence of a difference between the traditional approach and Coordinated Laboratory-Classroom Approach is it statistically valid to investigate in which dimension this difference was generated. Hypotheses that were supported at an observed significance level of .10 were accepted.

To ease analysis, an equal number of observations in every grade of each school was randomly drawn leaving 23 observations in each cell. Further analysis was conducted to see if there was an interaction between variables to identify if there was a difference in gain scores that was due to differences in students. An F test was conducted to determine if there was an interaction between variables of students and methodology.

TABLE I
CHART INDICATING NUMBER OF RESPONDENTS
BY GRADE LEVEL

Grade Level	Experimental Group Garrison School	Control Group Caldwell School
Grade 3	28	38
Grade 4	23	37
Grade 5	25	26

Attitudinal Data

Students names were not required on the attitudinal response survey forms. The testers felt that students would be more spontaneous in their responses if their identity was anonymous. Consequently, gain scores are not available to analyze.

An equal number of students were required in every grade level for each school in order to use the analysis of variance test. Twenty-three students were randomly chosen from every grade level and their scores were used in the analysis.

A three-way analysis of variance was used to analyze the attitude data. The variables and their levels were:

1. Methodology
2. Time Tests - September (Pre) and May (Post)
3. Grade levels 3, 4, and 5

In order to determine whether students' attitudes changed significantly from one school to the next, the dependent variable used in the analysis was the time by methodology interaction.

The overall research question is stated as follows: Do reading test scores and attitudes of students change significantly when instructed by the Coordinated Laboratory-Classroom Approach as compared to traditional reading instruction? This difference is measured by the time and methodology interaction.

CHAPTER IV

ANALYSIS OF DATA

The analyses of data for this research are reported as they relate to each of the hypotheses under study. Hypotheses with an observed significance level of .10 were rejected.

Hypothesis I

When gain scores on the Iowa Test of Basic Skills/Comprehension and the Iowa Test of Basic Skills/Vocabulary are considered jointly, there is no significant difference between students instructed through the traditional approach and students instructed through the Coordinated Laboratory-Classroom Approach to reading.

Data Results

This hypothesis was tested by a multivariate analysis of variance. An F value of 2.13 was produced which had an observed significance level of .10. Since this observed significance level equaled the rejection level of the study, the hypothesis was rejected. That is, there is a significant difference between the traditional approach and the Coordinated Laboratory-Classroom Approach--at least on the combined dimensions of vocabulary and comprehension. Given this result, it is pertinent to investigate whether this difference appeared in vocabulary,

comprehension, or both. Hypothesis II examines the dimension of reading comprehension, while the dimension of vocabulary is examined by Hypothesis III.

Hypothesis II

There is no significant difference between the mean gain score on the Iowa Test of Basic Skills/Comprehension for all students instructed through the traditional approach and the mean gain score on the Iowa Test of Basic Skills/Comprehension for all students instructed through the Coordinated Laboratory-Classroom Approach.

TABLE II

HYPOTHETICAL EXAMPLE: COMPUTATION OF MEAN GAIN SCORE FOR COMPREHENSION/GARRISON-EXPERIMENTAL GRADE THREE STUDENTS

Student	Score on Pre-Test	Score on Post-Test	Gain Score
1	65%	77%	+12%
2	72%	75%	+ 3%
3	70%	85%	+15%
4	63%	61%	- 2%
5	54%	88%	<u>+34%</u>
		Sum	+62%
Mean gain score = $\frac{62\%}{5} = 12.4\%$			

Individual pre- and post-test scores were computed, gain score difference realized, gain score difference summed and divided by number of respondents.

Data Results

Descriptive statistics bearing upon Hypothesis II are presented in Table III.

TABLE III
MEAN GAIN SCORES AND STANDARD DEVIATIONS OF
PRE- AND POST-TESTS FOR IOWA TEST OF BASIC
SKILLS/COMPREHENSION BY INSTRUCTIONAL
APPROACH AND GRADE LEVEL

Grade	N	Garrison - Experimental			N	Caldwell - Control		
		Mean	Standard Deviation	Post		Mean	Standard Deviation	Post
3	28	12.43	12.36	8.06	38	7.00	8.35	9.29
4	23	7.60	12.66	10.69	37	6.69	12.54	12.53
5	25	6.30	18.74	14.09	26	6.39	17.26	17.76

The hypothesis was tested by an analysis of variance over all grades. Standard deviation scores in a pre- and post-test format are presented. The analysis of variance test yielded an F score of 3.386, which had an observed significance level of .06. Since the level of rejection has been set at .10, the hypothesis of no significant difference must be rejected. Therefore, under the conditions of the statistical test, a significant difference was observed between the mean gain score on the Iowa Test of Basic Skills/Comprehension for all students instructed through the traditional approach and the mean gain score on the Iowa Test of Basic Skills/Comprehension for all students instructed through

the Coordinated Laboratory-Classroom Approach. The mean gain score difference between students taught by the traditional method and students taught by the Coordinated Laboratory-Classroom Approach are: Grade 3 (+5.43), Grade 4 (+.91), and Grade 5 (-.09). The scores indicate a significant difference in gain score between the traditional and Coordinated Laboratory-Classroom Approach in grade level 3. A lesser difference in mean gain score in grade 4 and a .09 increase in mean gain score is noted for the traditional approach to reading as opposed to a Coordinated Laboratory-Classroom Approach in grade 5.

This examination of the means of Table III revealed that two of the three grade levels instructed through the Coordinated Laboratory-Classroom Approach scored higher than students receiving traditional reading instruction. Grade level 5 favored the traditional approach to reading with the difference occurring in the second decimal place. On the basis of the difference in scores, the Coordinated Laboratory-Classroom Approach is especially favored in grade 3 and decreasingly so in grade 4. Grade 5 reveals a slight gain for the traditional approach to reading.

Hypothesis III

There is no significant difference between the mean gain score on the Iowa Test of Basic Skills/Vocabulary for all students instructed through the traditional approach and the mean gain score on the Iowa Test of Basic Skills/Vocabulary for all students instructed through the Coordinated Laboratory-Classroom Approach.

Data Results

Describing statistics citing Hypothesis III are presented in Table III.

TABLE IV
MEAN GAIN SCORES AND STANDARD DEVIATIONS FOR
PRE- AND POST-TESTS FOR IOWA TEST OF BASIC
SKILLS/VOCABULARY BY INSTRUCTIONAL
APPROACH AND GRADE LEVEL

Grade	Garrison - Experimental				Caldwell - Control			
	N	Mean	Standard Deviation		N	Mean	Standard Deviation	
			Pre	Post			Pre	Post
3	28	8.17	8.39	7.23	38	6.65	8.98	8.17
4	23	8.60	10.94	12.15	37	5.26	13.47	12.49
5	25	6.91	15.86	13.34	26	4.78	16.68	15.78

The hypothesis was tested by an analysis of variance over all grades pooled. Pre- and post-test standard deviation scores are also presented. The analysis of variance test yielded an F score of 2.659; which had an observed significance level of .10. The level of rejection was set at the .10 level. Therefore, the hypothesis of no significant difference must be rejected. Also, under the condition of the statistical test, a significant difference was observed between the mean gain score on the Iowa Test of Basic Skills/Vocabulary for all students instructed through the traditional approach and the mean gain score on the Iowa Test of Basic Skills/Vocabulary through the Coordinated Laboratory-Classroom Approach.

Hypothesis IV

There is no significant difference between the average change in Estes Attitude Scale in Reading score of students instructed through the traditional approach and the average change in Estes Attitude Scale in Reading score of students instructed through the Coordinated Laboratory-Classroom Approach.

Data Results

An analysis of variance was performed on the attitude data to see if changes in students' attitudes from the beginning to the end of the school year differed according to the teaching method to which they were exposed. This test yielded an F value of 3.386, which had an observed significance level of .0993. Since the level of rejection has been set at .10, the hypothesis of no significant difference must be rejected. Hence, under the direction of the statistical test, a significant difference was observed between the average change in Estes Attitude Scale in Reading score of students instructed through the traditional approach and students instructed through the Coordinated Laboratory-Classroom Approach. Significant gains are apparent in favor of the Coordinated Laboratory-Classroom Approach in all three grade levels. A significant decrease in gain score of students receiving reading instruction through a traditional approach was noted in grades 4 and 5 of the control group.

TABLE V

AVERAGE ATTITUDE CHANGE FOR ESTES ATTITUDE
SCALE IN READING BY INSTRUCTIONAL
APPROACH AND GRADE LEVEL*

Garrison - Experimental			Caldwell - Control		
Grade	N		Grade	N	
3	28	1.5714	3	38	1.3333
4	23	.5714	4	37	-3.2380
5	25	3.9524	5	26	-6.4286
Overall Average		2.0317			-2.778

*Higher scores denote "better" attitudes toward the reading subject area.

CHAPTER V

SUMMARY OF THE STUDY

This chapter will be organized into three areas for discussion:

- (1) Summary and Conclusions from the Hypotheses, (2) Theoretical Implications, and (3) Suggestions for Future Research.

Summary

The Introduction, Significance of the Study, Definitions, Assumptions, Limitations, and Purpose and Design of the Study were previously presented.

Two schools were identified by the Director of Research and Evaluation of the Wichita Public Schools, Kansas. The schools were matched according to size, academic achievement based on results from the Iowa Test of Basic Skills, educational level of parents, and family income level. The Coordinated Laboratory-Classroom Approach was administered to students at Garrison School, while traditional reading instruction was used with students at Caldwell School.

Pre- and post-tests were administered to approximately 300 students in grades 3, 4, and 5 in both Garrison and Caldwell Elementary Schools. Pre- and post-test forms of the Estes Attitude Scale in Reading were used to measure affective attitudinal characteristics of the students.

Hypothesis I

When gain scores on the Iowa Test of Basic Skills/Comprehension and the Iowa Test of Basic Skills/Vocabulary are considered jointly, there is no significant difference between students instructed through the traditional approach and students instructed through the Coordinated Laboratory-Classroom Approach to reading.

Conclusion. There is a difference between the traditional approach and the Coordinated Laboratory-Classroom Approach to the teaching of reading; and therefore, it is meaningful to determine the significant dimension of this difference. Multivariate analysis of variance was conducted with the test scores to analyze this hypothesis.

Hypothesis II

There is no significant difference between the mean gain score on the Iowa Test of Basic Skills/Comprehension for all students instructed through the traditional approach and the mean gain score on the Iowa Test of Basic Skills/Comprehension for all students instructed through the Coordinated Laboratory-Classroom Approach.

Conclusion. Based on the observed significance level of .06 with a level of rejection set at .10, the hypothesis of no significant difference was rejected. Therefore, it was concluded that students instructed through the Coordinated Laboratory-Classroom Approach to the teaching of reading yield higher gain scores in comprehension as measured by the Iowa Test of Basic Skills. The mean scores in Table III revealed that in two of the three grade levels of students taught by the

Coordinated Laboratory-Classroom Approach had higher gain scores in reading comprehension than the students taught by the traditional method.

However, a score in the second decimal place was recorded which favored the traditional approach to reading in one grade level. It can be concluded that on the basis of data analyzed that the students made higher gain scores in the Coordinated Laboratory-Classroom Approach in grade three and four.

Hypothesis III

There is no significant difference between the mean gain score on the Iowa Test of Basic Skills/Vocabulary for all students instructed through the traditional approach and the mean gain score on the Iowa Test of Basic Skills/Vocabulary for all students instructed through the Coordinated Laboratory-Classroom Approach.

Conclusion. It was concluded that students receiving reading instruction through the Coordinated Laboratory-Classroom Approach scored better on the Iowa Test of Basic Skills/Vocabulary than students receiving traditional reading instruction. Mean gain scores of students who received reading instruction through the Coordinated Laboratory-Classroom Approach were over two points higher in all grade levels than students who received traditional reading instruction.

Hypothesis IV

There is no significant difference between the average change in Estes Attitude Scale in Reading score of students instructed through the traditional approach and the average change in Estes Attitude Scale

in Reading score of students instructed through the Coordinated Laboratory-Classroom Approach.

Conclusion. The data reveals a wide difference in attitude changes between the Garrison - Experimental and Caldwell - Control group schools. The overall attitude change score as indicated in Table V clearly reveals higher average attitude gain scores for students receiving reading instruction through the Coordinated Laboratory-Classroom Approach. The difference in attitude change is significant enough to say that the students who receive reading instruction through the Coordinated Laboratory-Classroom Approach have "better" or more positive attitudes toward the reading process than students receiving the traditional method.

Note. A special significance is the drop in attitude changes from third grade to fifth grade levels of students who received reading instruction through a traditional approach. These data lead this researcher to suggest that the longer the students remain in a program utilizing traditional reading instruction, the more negative the students become.

Under the direction of the statistical F test with an F value of 3.386, which had an observed significance level of .10, the hypothesis was rejected.

Theoretical Implications

Many of the structural design changes in curriculum occurring in today's elementary schools have little to do with new research or knowledge about differing programs which integrate all disciplines and combine the efforts of staff, pupils, and community. Individuals must

be cognizant that children do learn in a variety of ways; that single basal reading textbook approaches have little relationship to today's active, perceiving, evaluating school child. This discussion of the theoretical implications of this study will be centered around three categories of a Coordinated Laboratory-Classroom Approach to the teaching of reading. The three categories are (1) Intensive Needs Assessment; (2) Project Identification and Implementation; and (3) Affective Dimension.

Intensive Needs Assessment

Silberman (1974) has stated that "It never occurs to more than a handful of educators to ask WHY they are doing what they are doing - to think seriously about purposes or consequences of education" (p. 99). To guard against a fragmented, non-integrated approach to reading instruction, one must collect data on all external and internal variables for evaluation and planning. Students, staff, and community must be involved so that there is direction and purpose with understanding of the goals to achieve in the reading program. Sound reading programs cannot be "handed out," they must be formulated through intensive needs assessment.

Project Identification and Implementation

Good teaching of reading can occur in several different settings, no one of which is best for all children. Thus, for growth in reading, a sound program offers alternative approaches to students. The 20th century child cannot be expected to remain at his desk while the passive teacher impassively attempts to teach reading skills with the

basal text and workbook as the single source of instruction. Children learn better when they have some choice about what and how they learn. Holistic learning is far better than piecemeal, fragmented, learning in a classroom of limited instructional choices.

There is a knowledge body that can and should guide teachers as they plan reading programs for students. Intensive needs assessments must be conducted to clarify the true needs of the students and staff in terms of a viable and productive reading program. It is not the decision of what to buy. It is, however, the multiple questioning decisions of: who are our students, who is our community, are reading labs just for remediation, what about multiple modality instruction, idea sharing by staff, and how can we offer more instructional choices to our students? These questions and ideas just scratch the surface in a needs assessment process before implementing a reading program. It is a sad commentary on educational planning by administrators and teachers when again and again one sees evidence of the apparent disregard for research and assessment before the reading program is started.

Affective Dimension

This writer refers to this category as The Hidden Curriculum, not because it cannot be seen in action in so many of our schools today, but because it should be so much a part of the curriculum that it has no separate category placement. Plans for improving education do not appear to consider what happens to students in schools on a day-by-day and hour-by-hour basis. Robert (1973) says that "in our pre-occupation with broad programs and systems, we have ignored the need for human interaction within the schools and the personal needs of the

students and teachers who live there from four to ten hours a day, five days a week, during the school year" (p. 11). It is difficult to ascertain how they expect young students to learn to read in an environment that denies personal interaction between students and teachers. All efforts should be put into action to include the element of affective teaching, instructional humanness, and the positive learning climate of a school.

Suggestions for Future Research

It is suggested that for future study, individuals taking the Estes Attitude Scale should be identified so that gain score could be tabulated on individual students.

It is also suggested that a test be given to determine the reason for the drop in attitude changes between grade levels in the traditional school.

A suggested replication design would resemble the model below to further eliminate the hidden variables in innovative research.

Methodology	Experimental		Control	
	1	2	1	2
School				
Grade Levels	3, 4, 5	3, 4, 5	3, 4, 5	3, 4, 5
Teachers	(two per grade level)		(two per grade level)	
Students	(20 per class)		(20 per class)	

This study should also be replicated in other grade levels, inner city schools, at the secondary level, and using a variety of teaching personnel.

Summation of the Study

It must be recognized that children learn to read in an array of ways; that concrete experience is of the utmost importance to young students; that rote memorization and single basal instruction has little relationship to today's active young student. It must also be recognized that children learn better when they have some choice about what and how they learn; that success builds success, repeated failure builds further failure; that holistic learning is superior to fragmented, piecemeal learning. Most important of all, one must recognize that children differ in many ways from one another and must not be taught en masse, or expected to learn to read by one method or approach only. The findings reported in this study are of enough significance to indicate that the Coordinated Laboratory-Classroom Approach to reading instruction is a viable area of study meriting a closer examination by researchers and school officials.

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APPENDIX A

LETTER OF APPROVAL FOR RESEARCH

WICHITA PUBLIC SCHOOLS
EDUCATIONAL SERVICES BUILDING
640 North Emporia
WICHITA, KANSAS 67214

August 26, 1974

Division of Research and Evaluation Services

Mr. John Conyers, Principal
Minneha Elementary School
701 North Webb Road
Wichita, Kansas 67206

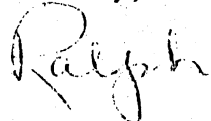
Dear John:

I indicated earlier that your research proposal had been approved by the Research Council. Enclosed is a copy of the proposal form showing the signatures of members of the Council.

This office will assist in identifying a matched elementary school as soon as data become available. Also, if needed, assistance will be given in randomly selecting pupils as subjects for the research.

I am looking forward to the completion of your study. The problem area is an important one, and the investigation should yield data of value to the school system and to education in general. If I can assist further, please let me know.

Sincerely,



Ralph E. Walker, Director
Research and Evaluation Services Division

cc: Dr. Lawrence Bechtold
Dr. Donald Younglund
Office of Elementary Education

APPENDIX B

LETTER SELECTING A COMPARISON SCHOOL FOR
GARRISON ELEMENTARY

WICHITA PUBLIC SCHOOLS
EDUCATIONAL SERVICES BUILDING
640 North Emporia
WICHITA, KANSAS 67214

July 29, 1975

Division of Research and Evaluation Services

Mr. John Conyers
2122 Gold
Wichita, Kansas 67213

Dear John:

Subsequent to your inquiry about selecting a comparison school for Garrison Elementary, Dr. Ralph E. Walker, Director of Research and I investigated a number of possible matching characteristics for elementary schools within U.S.D. 259. These characteristics included the following: school size, based on official enrollment reports; academic achievement of pupils, based on third grade through sixth grade results on the Iowa Test of Basic Skills; educational level of parents and family income level, both based on information contained in the Sedgwick County assessor's annual enumeration data; and geographic residence of bussed in pupils, based on transportation lists.

It was our conclusion that while no other elementary school matched Garrison perfectly, Caldwell Elementary probably came closer on the above listed measures. We would recommend Caldwell for use as a comparison school in your proposed study. You should contact the principal of Caldwell to let him know about your plans.

Good luck with your study.

Yours truly,



W. E. Turner
Research Specialist

Copy to: Dr. Ralph E. Walker

APPENDIX C

DESCRIPTION OF LEVELS

DESCRIPTION OF LEVELS

Levels 7-14 of the tests correspond roughly to chronological age. Each level number of the tests is the grade number plus six. These relationships are summarized below:

	Level	Age	Grade
Primary Battery	Level 7	7	1.7-2.5
	Level 8	8	2.6-3.5
Regular Battery	Level 9	9	3
	Level 10	10	4
	Level 11	11	5
	Level 12	12	6
	Level 13	13	7
	Level 14	14	8-9

THREE TESTING PLANS

Graded Testing

Under this plan of usage, all pupils in each grade are assigned the level of test designed for that grade, according to the preceding table. This procedure has all of the advantages and disadvantages which result from requiring the same test behavior of all pupils, no matter how advanced or retarded they are in their development.

Out-of-Level Testing in Groups

This plan consists of administering only one level to a given group, but the choice of level depends upon the average level of skills development of the grade group tested. It makes better allowance for the needs and abilities of groups which vary from the "average."

Individualized Testing

This plan consists of administering different levels of the tests to different pupils in the same classroom. Any combination of levels may be simultaneously administered in any organizational grouping (graded classrooms, pods, learning centers, etc.). Directions for administration and time limits are identical for all levels.

All that is necessary to individualize testing is to distribute an answer sheet for the appropriate level for each pupil. In returning answer sheets to Houghton Mifflin Scoring Service for processing, answer sheets for a particular grade or age group can be alphabetized without regard to level. List reports from any of the three testing plans are arranged in identical fashion, i.e., they contain the same scores, which are comparable from level to level, and involve the same procedures for interpretation.

The effects of individualized testing on performance will vary with local conditions. Under optimum conditions of pupil motivation and morale, results of graded and individualized testing should be very similar, for these were the conditions under which equivalence of the levels was established.

The purpose of individualized testing is not systematically different test scores but more accurate and appropriate measurement.

THE PRIMARY BATTERY

Levels 7 and 8 of the Primary Battery of the *Iowa Tests of Basic Skills*, Forms 5 and 6 are available as part of a continuous longitudinal program. Subtests are highly comparable and score scales represent an extension of those for Levels 9-14.

Whereas the Primary Battery was designed principally for use in Grades 1-3, it may also be used to extend individualized testing downward from Levels 9-14.

EMPHASIS ON SKILLS RATHER THAN ON FACTUAL CONTENT

The *Iowa Tests of Basic Skills* differ from most other elementary achievement test batteries in that they are concerned only with generalized intellectual skills and abilities and do not provide separate measures of achievement in the content subjects, such as the social studies, literature, general science, and descriptive geography.

It is the authors' opinion that measures of the basic intellectual skills are far more valuable for use in the improvement and individualization of instruction and in educational guidance than are measures of the acquisition of specific information in special subjects. The great heterogeneity or school-to-school variability in curriculum organization and content also makes it impossible to supply tests in these special subjects that are well adapted to most local situations.

In view of a national need for truly valid measures of achievement in the sciences and social studies, the authors have continuously experimented with test materials in these areas of the curriculum. Analyses of textbooks and courses of study reveal a discouraging lack of agreement in content and placement. Many items that are relatively easy in one system are inordinately difficult in another because of differences in instructional content. Lack of agreement on grade placement of materials makes it particularly difficult to find items which show a distinct learning progression from grade to grade. Those items which show most marked and regular decreases in difficulty from grade to grade tend to be items of general information (similar to those found in general intelligence or aptitude tests). Such items reflect neither the superiority nor inferiority of the instructional program.

APPENDIX D

CONSTRUCTION OF THE INDIVIDUAL TESTS

test with which to build up the pupil's self-confidence in the test situation by avoiding early frustrations with instructional content the pupil has not mastered.

The items in the test consist of a word in context followed by four possible definitions. Stimulus words were chosen from the Thorndike (44) and Rinsland (43) word lists, as were words constituting the definitions. Nouns, verbs, and adjectives were given approximately equal representation, with a few adverbs at each grade level.

It is not the purpose of a single item in a test of this type to determine whether the pupil knows the meaning of a *single* word (the stimulus word) only. Nor is it necessary that the response words be easier than the stimulus word. Rather, the immediate purpose of each item is to determine if the pupil is able to discriminate among the meanings of *all* the words used in the item. Thus, a 40-item vocabulary test may sample as many as two hundred words from his general vocabulary, instead of only 40.

Test R: Reading Comprehension

The Reading Comprehension Test consists of selections varying in length from a few sentences to a full page. The passages were chosen in an attempt to represent as completely as possible all of the types of material encountered by the pupils in their everyday reading. They were adapted from a wide variety of sources: newspapers, magazines, encyclopedias, government publications, textbooks, and original literary works. A somewhat arbitrary classification of the materials used in Form 5 is shown in Table 6.1 to illustrate the extent to which different types of reading materials are represented in the test for each level.

The reading process as defined by the items in this test is a complex one. Whether or not a pupil is a good reader depends not only on the extent to which he apprehends the author's meaning, but also on the degree to which he grasps the significance of the ideas presented, evaluates them, and draws useful conclusions from them. This is true at all developmental levels. Children do not suddenly learn to read with comprehension at any particular age or grade. Thoughtful reading is the result of a long period of growth beginning in the first grade. No amount of drill at the higher levels can make up for a lack of attention to *reading for meaning* in the middle or lower grades.

For these reasons, the items in all levels of the tests place a premium on understanding and drawing inferences from the reading selections.

Some of the specific skills measured by the tests are listed in Table 6.2. The numbers at the right refer to items in each of the forms which illustrate each of the skills.

It will be noted that the items in these tests are somewhat longer and more involved than most items in other current elementary school reading tests. This, again, is a reflection of the extent to which complex processes are being measured by the test. Test items which contain only short responses tend to measure relatively superficial comprehension. Furthermore, short-response items are more likely to be answerable through a process of matching words in the responses with words in

Construction of the Individual Tests

Test V: Vocabulary

This test was placed first in the battery for two reasons. In the first place, it is an easy test to take from the standpoint of mechanics and therefore a good one to accustom the pupils to handling the separate answer sheet. In the second place, skill in vocabulary differs from the other skills tested in the battery in that it is not so directly related to specific instruction as are most of the other skills. A pupil's vocabulary depends to a large extent upon the richness of language experiences in his home background and upon incidental in-school and out-of-school language experiences. It also depends on the richness of experiences in the school program, but in most schools pupils receive very little instruction specifically designed to increase their "word power." A vocabulary test is, therefore, a good

Table 6.2: TEST R: Reading Comprehension

Skills Tested	Form 5	Form 6
D (Details) – To Recognize and Understand Stated or Implied Factual Details and Relationships		
D-1 To recognize and understand important facts and details	28, 94, 114	38, 80, 155
D-2 To recognize and understand implied facts and relationships	10, 87, 162	52, 105, 148
D-3 To deduce the meaning of words or phrases from context	59, 103, 154	30, 133, 168
P (Purpose) – To Develop Skill in Discerning the Purpose or Main Idea of a Paragraph or Selection		
P-1 To detect the main purpose of a paragraph or selection	97, 119, 170	120, 157
P-2 To recognize the main idea or topic of a paragraph or selection	24, 118, 149	35, 99, 164
O (Organization) – To Develop Ability to Organize Ideas		
O-1 To recognize common elements or parallel topics in incidents or paragraphs	68, 128, 155	79, 108, 175
O-2 To recognize proper time sequence	86, 156, 172	10, 50, 144
E (Evaluation) – To Develop Skill in Evaluating What is Read		
E-1 To develop generalizations from a selection	33, 120, 173	8, 131, 177
E-2 To recognize the writer's viewpoint, attitude, or intention	89, 109, 168	19, 96, 167
E-3 To recognize the mood or tone of a selection	130	97, 163
E-4 To recognize outstanding qualities of style or structure	57, 108, 132	60, 169, 178

the passage without any real understanding. Avoidance of word-matching opportunities usually requires fairly lengthy re-statements of ideas in the passage.

In the lower levels it was necessary to include a few items measuring rather simple skills because this represents the level of reading development of the average or below-average pupil. Even at this level, an attempt was made to test for understandings and simple inferences whenever possible.

More complex skills were gradually introduced as pupil performance in the tryout tests demonstrated readiness for them. To score well on the last few selections, a pupil has to use all of the skills generally associated with mature adult reading.

APPENDIX E

RELIABILITY OF THE TEST SCORES

RELIABILITY OF THE TEST SCORES

Methods of Determining, Reporting, and Using Reliability Data

A soundly planned, carefully constructed, and comprehensively standardized achievement test battery represents the most accurate and dependable measure of pupil achievement available to the classroom teacher. Many of the subtle, extraneous factors that contribute to unreliability and bias in human judgment have no effect on standardized test scores. In addition, many other factors that contribute to the apparent inconsistency in pupil performance can be effectively minimized in the test situation. Some of these influences may be easily identified: temporary changes in pupil motivation, health, and attentiveness; minor distractions from within and without the classroom; limitations in number, scope, and comparability of the available samples of pupil work; and misunderstanding by pupils of what the teacher expects of them. But undoubtedly there are many more about which we know very little. The greater effectiveness of the well-constructed achievement test in controlling these factors — as compared to the teacher's informal evaluation of the same achievement — is evidenced by the higher reliability of the test.

Test reliability may be quantified by a variety of statistical data. Such data, however, reduce to two basic types of indexes. The first of these indexes is the reliability coefficient. In numerical value, the reliability coefficient is always between .00 and .99, and generally between .60 and .95. The closer the coefficient approaches the upper limit, the greater is the freedom of the test scores from such factors as those suggested above, factors that obscure real differences in pupil achievement. However, this ready frame of reference for reliability coefficients is deceptive in its simplicity. It is impossible to conclude whether a value such as .75 represents either a "high" or "low," "satisfactory" or "unsatisfactory" reliability. Only after a coefficient has been compared to those of *equally valid* and equally practical alternative tests can such a judgment be made. In practice, such tests can rarely be found. Therefore, the reliability coefficient is rarely free of some ambiguity. (For a fuller discussion of the importance and limitations of reliability coefficients, see the section entitled "Validity of the Tests.")

The second of the statistical indexes used to describe test reliability is the standard error of measurement. This index represents a measure of the net effect of all factors leading to inconsistency in pupil performance and to inconsistency in our interpretation of that performance. The standard error of measurement may be best understood, perhaps, by a hypothetical example. Suppose a number of students who are all of exactly the same reading ability were to take the same reading test. Despite their equal ability, they would not all get the same scores. Instead, their scores would range over a considerable interval. A few would get much higher scores than

they deserve, a few much lower; the majority would get scores fairly close to that value representing their actual ability. All such variation in scores would be attributable to differences in motivation, attentiveness, and other factors suggested above. The standard error of measurement is an index of the variability of the scores of pupils having the same actual ability. There is, of course, no way of telling just how much a student's achievement may have been under- or over-estimated. The best estimate that we may make of the level of his ability is that represented by his obtained score.

We may, however, make reasonable estimates of the amounts by which the abilities of students in a particular reference group have been mismeasured. For about two-thirds of the examinees, the test scores they obtain are "correct" within one standard error value; for 95 per cent the scores are in error by less than two standard errors; for more than 99 per cent, the scores are in error by less than three standard error values.

Two methods of estimating reliability were used to obtain the data provided in the following sections. The first was the split-halves method. Reliability coefficients derived by this technique were based on the answer sheets of a completely representative sample of the standardization participants. These coefficients are probably somewhat inflated and should be regarded as upper limits. The *Iowa Tests* are primarily power tests; any speed factor involved would influence scores from both halves in the same manner. Errors associated with variations in pupil performance from one time to another are not taken into account. The practical advantage of this method of estimating reliabilities is that the coefficient may be computed for a large representative sample of the pupils used to establish the norms.

The second set of reliability data is based upon the administration of equivalent forms. Reliability coefficients obtained by correlating the scores from equivalent forms are considered superior to those derived by the split-halves procedure. However, a practical disadvantage is that equivalent forms reliability data must always, of necessity, be secured from a limited sample of schools that may not be completely representative of all the schools used in establishing the norms.

Split-Halves Reliability

The reliability data presented in Table 6.4 are based upon a sample of approximately 12.5 per cent of the answer sheets from the complete standardization group for each grade.

The two test halves were constituted as "equivalent" halves in much the same way that equivalent forms are assembled under classical procedures. That is, the items for each level were first classified according to skills class and general level of item difficulty. Then items were assigned randomly to halves. In tests made up of "blocks" of items, such as those accompanying reading passages or maps, items were assigned the halves in blocks (to avoid inflation of the reliability estimates through inter-item dependence).

Grade 3
level nine

TABLE 6.4
Split-Halves Reliability Analysis

Grade 3
level nine

	TEST V VOCAB DIARY V	TEST R READ INC R	TEST L: LANGUAGE SKILLS					TEST W: WORK STUDY SKILLS				TEST M: MATHEMATICS SKILLS			COM- POSITE C	
			SPELLING L1	CAPITAL LETTERING L2	PUNC- TUATION L3	USAGE L4	TOTAL L	MAPS W-1	GRAPHS W-2	REFER- ENCES W-3	TOTAL W	CONCEPTS M-1	PROBLEMS M-2	TOTAL M		
National Representative Reliability Sample N = 2476	RAW SCORES															
	Mean	13.5	23.1	11.8	14.2	12.0	13.9	13.0	10.9	9.0	17.0	12.3	15.1	10.6	12.8	14.9
	S.D.	6.44	10.86	6.29	6.68	5.57	7.23	5.47	4.86	3.88	7.69	4.85	6.27	4.83	5.17	5.79
National Representative Reliability Sample N = 2476	GRADE EQUIVALENTS															
	Mean	31.6	32.7	33.6	32.6	33.2	33.4	33.2	32.0	31.8	31.6	31.8	32.4	31.2	31.8	32.2
	S.D.	10.50	11.28	12.33	11.83	12.05	13.00	10.38	10.71	11.01	9.25	9.04	9.10	9.32	8.53	8.86
Reliability Coefficients		.87	.91	.87	.86	.80	.90	.95	.75	.77	.88	.91	.87	.82	.91	.98
Weighted National Standardization Sample N = 19,534 (Wrd N = 56,243)	RAW SCORES															
	Mean	13.4	23.2	11.8	14.3	12.1	13.9	13.0	10.9	9.0	17.1	12.3	15.1	10.5	12.8	14.9
	S.D.	6.52	10.93	6.24	6.73	5.69	7.20	5.49	4.80	3.89	7.69	4.83	6.11	4.80	5.08	5.80
	S.E. Meas.	2.3	3.2	2.3	2.5	2.5	2.2	1.2	2.4	1.9	2.7	1.5	2.3	2.1	1.6	0.8
	GRADE EQUIVALENTS															
	Mean	31.4	32.8	33.5	32.9	33.5	33.3	33.3	32.0	31.9	31.8	31.9	32.3	31.0	31.7	32.2
	S.D.	10.72	11.37	12.29	11.90	12.22	12.95	10.43	10.59	11.04	9.24	8.99	8.88	9.24	8.41	8.88
	S.E. Meas.	3.7	3.3	4.5	4.5	5.4	4.0	2.3	5.3	5.3	3.3	2.7	3.3	4.0	2.7	1.3
	AGE EQUIVALENTS															
	Mean	84.9	85.8	86.7	86.4	87.4	87.3	86.9	85.6	85.9	85.8	85.8	86.3	85.3	85.8	85.8
	S.D.	10.78	11.46	12.48	12.07	12.22	12.89	10.50	10.66	11.01	9.22	8.99	8.85	9.16	8.35	8.91
	S.E. Meas.	3.8	3.4	4.5	4.6	5.5	4.0	2.3	5.3	5.3	3.2	2.7	3.2	3.9	2.5	1.4
STANDARD SCORES																
Mean	57.9	57.8	59.6	58.8	59.5	60.7	56.8	57.2	57.6	56.3	54.7	56.0	55.8	54.2	54.5	
S.D.	13.13	13.63	13.95	13.93	14.52	14.24	13.83	13.22	13.51	13.05	12.61	12.42	12.76	11.97	12.93	
S.E. Meas.	4.7	4.0	5.1	5.3	6.5	4.4	3.1	5.6	6.5	4.6	3.8	4.5	5.5	3.6	2.0	

Grade 4
level ten

Grade 4
level ten

	TEST V VOCAB DIARY V	TEST R READ INC R	TEST L: LANGUAGE SKILLS					TEST W: WORK STUDY SKILLS				TEST M: MATHEMATICS SKILLS			COM- POSITE C	
			SPELLING L1	CAPITAL LETTERING L2	PUNC- TUATION L3	USAGE L4	TOTAL L	MAPS W-1	GRAPHS W-2	REFER- ENCES W-3	TOTAL W	CONCEPTS M-1	PROBLEMS M-2	TOTAL M		
National Representative Reliability Sample N = 2564	RAW SCORES															
	Mean	17.5	28.2	16.3	15.9	15.1	14.8	15.5	13.7	9.7	20.2	14.5	15.6	11.4	13.5	17.8
	S.D.	7.98	12.61	8.43	6.39	6.89	6.89	6.22	5.73	4.22	7.75	5.22	6.44	5.28	5.48	6.70
National Representative Reliability Sample N = 2564	GRADE EQUIVALENTS															
	Mean	41.2	41.6	42.9	42.1	42.6	42.4	42.5	41.8	41.6	41.0	41.5	42.2	40.7	41.4	41.6
	S.D.	12.68	13.37	14.41	14.09	13.96	15.20	12.44	12.21	13.21	11.05	10.61	10.38	10.52	9.68	10.55
Reliability Coefficients		.88	.92	.91	.83	.86	.88	.96	.82	.79	.85	.92	.84	.81	.90	.98
Weighted National Standardization Sample N = 20,372 (Wrd N = 57,362)	RAW SCORES															
	Mean	17.4	28.5	16.4	16.2	15.3	14.8	15.7	13.7	9.8	20.5	14.7	15.8	11.4	13.6	17.9
	S.D.	7.90	12.34	8.40	6.42	6.86	6.83	6.20	5.62	4.11	7.69	5.14	6.46	5.30	5.49	6.62
	S.E. Meas.	2.8	3.6	2.5	2.6	2.5	2.4	1.2	2.4	1.9	3.0	1.5	2.6	2.3	1.7	0.9
	GRADE EQUIVALENTS															
	Mean	41.2	42.0	43.0	42.9	42.9	42.5	42.8	41.8	42.2	41.6	41.8	42.4	40.8	41.6	41.9
	S.D.	12.53	13.04	14.33	14.13	13.97	15.07	12.45	11.96	12.80	10.90	10.31	10.40	10.58	9.68	10.38
	S.E. Meas.	4.4	3.8	4.2	5.7	5.2	5.3	2.6	5.1	6.0	4.3	3.0	4.2	4.6	3.1	1.5
	AGE EQUIVALENTS															
	Mean	94.7	95.2	96.4	96.4	96.9	96.5	96.5	95.5	96.2	95.5	95.7	96.3	95.0	95.7	95.6
	S.D.	12.59	13.18	14.74	14.34	14.07	15.00	12.60	11.92	12.90	10.83	10.31	10.41	10.52	9.68	10.44
	S.E. Meas.	4.4	3.7	4.3	5.8	5.2	5.2	2.6	5.0	5.9	4.2	2.9	4.2	4.6	3.1	1.5
STANDARD SCORES																
Mean	68.3	67.9	69.1	69.2	69.5	69.7	68.4	68.2	68.7	68.1	67.3	68.0	67.6	66.7	67.2	
S.D.	12.54	13.18	13.64	13.71	13.56	13.85	12.84	12.40	12.65	11.91	11.08	11.02	11.67	10.43	10.99	
S.E. Meas.	4.3	3.7	4.0	5.6	5.0	4.8	2.6	5.2	5.8	4.6	3.1	4.4	5.1	3.4	1.6	

Grade 5
level eleven

TABLE 6.4 (continued)
Split-Halves Reliability Analysis

Grade 5
level eleven

	TEST V VOCAB USAGE V	TEST R READ INC R	TEST L: LANGUAGE SKILLS					TEST W: WORK STUDY SKILLS				TEST M: MATHEMATICS SKILLS			COM. POSITE C	
			SPELLING L1	CAPITAL LETTERS L2	PUNCTUATION L3	USAGE L4	TOTAL L	MAPS W1	GRAPHS W2	REFERENCES W3	TOTAL W	CONCEPTS M1	PROBLEMS M2	TOTAL M		
National Representative Reliability Sample N = 2578	RAW SCORES															
	Mean	21.7	33.6	19.0	17.5	17.4	15.1	17.2	17.5	9.1	23.3	16.6	17.8	12.5	15.1	20.8
	S.D.	9.16	13.67	9.05	6.83	7.15	6.86	6.60	6.42	4.24	10.55	6.35	7.02	5.34	5.75	7.50
National Representative Reliability Sample N = 2578	GRADE EQUIVALENTS															
	Mean	50.8	51.5	52.0	52.6	52.1	51.6	52.1	51.8	51.4	51.9	51.7	51.8	50.7	51.3	51.5
	S.D.	14.44	14.27	16.17	16.34	15.77	17.01	14.31	13.17	14.04	13.19	11.74	12.42	12.14	11.29	11.94
National Representative Reliability Sample N = 2578	Reliability Coefficients															
		.89	.93	.90	.84	.85	.88	.96	.83	.75	.90	.92	.82	.80	.89	.98
Weighted National Standardization Sample N = 20,647 (Wrd N = 57,883)	RAW SCORES															
	Mean	21.8	33.9	19.3	17.6	17.6	15.2	17.4	17.5	9.2	23.7	16.8	17.9	12.6	15.2	21.0
	S.D.	9.18	13.66	9.08	6.74	7.33	6.83	6.62	6.54	4.32	10.62	6.42	7.05	5.39	5.78	7.52
	S.E. Meas.	3.1	3.7	2.8	2.7	2.7	2.4	1.3	2.7	2.1	3.3	1.7	2.9	2.4	1.9	1.1
	GRADE EQUIVALENTS															
	Mean	51.0	51.8	52.5	52.9	52.6	51.9	52.5	51.9	51.8	52.3	52.0	52.0	50.9	51.5	51.8
	S.D.	14.40	14.23	16.19	16.11	16.02	16.88	14.24	13.46	14.21	13.21	11.87	12.40	12.20	11.32	11.89
	S.E. Meas.	4.8	3.9	5.1	6.4	6.0	6.0	3.0	5.5	7.0	4.1	3.3	5.2	5.4	3.8	1.7
	AGE EQUIVALENTS															
	Mean	104.6	105.1	106.2	106.6	106.7	105.8	106.3	105.5	105.9	106.2	105.9	106.0	105.1	105.6	105.5
	S.D.	14.50	14.40	16.81	16.31	16.16	16.86	14.44	13.49	14.32	13.16	11.90	12.46	12.26	11.36	11.99
	S.E. Meas.	4.8	3.9	5.3	6.4	6.2	5.9	3.0	5.6	7.2	4.1	3.3	5.2	5.4	3.8	1.7
	STANDARD SCORES															
	Mean	77.1	77.1	77.4	77.9	77.9	77.6	77.6	77.7	77.7	78.1	77.5	77.4	77.3	76.6	76.9
	S.D.	12.60	12.71	13.66	13.37	13.36	13.65	12.51	12.01	12.40	11.81	10.86	11.22	11.47	10.54	10.79
S.E. Meas.	4.2	3.4	4.3	5.3	5.1	4.8	2.6	5.0	6.2	3.6	3.0	4.7	5.1	3.5	1.5	

Grade 6
level twelve

Grade 6
level twelve

	TEST V VOCAB USAGE V	TEST R READ INC R	TEST L: LANGUAGE SKILLS					TEST W: WORK STUDY SKILLS				TEST M: MATHEMATICS SKILLS			COM. POSITE C	
			SPELLING L1	CAPITAL LETTERS L2	PUNCTUATION L3	USAGE L4	TOTAL L	MAPS W1	GRAPHS W2	REFERENCES W3	TOTAL W	CONCEPTS M1	PROBLEMS M2	TOTAL M		
National Representative Reliability Sample N = 2558	RAW SCORES															
	Mean	23.3	32.1	19.2	18.6	17.4	15.4	17.6	17.0	10.3	28.5	18.6	19.1	12.3	15.7	21.4
	S.D.	8.54	13.04	9.12	7.93	7.28	6.31	6.76	6.08	4.30	10.59	6.24	7.71	5.65	6.30	7.29
National Representative Reliability Sample N = 2558	GRADE EQUIVALENTS															
	Mean	60.9	62.0	61.7	62.2	61.6	61.8	61.8	61.3	61.2	61.8	61.4	61.7	60.5	61.1	61.4
	S.D.	16.16	15.18	18.39	18.10	18.96	18.92	16.27	15.40	15.85	15.33	13.50	13.76	13.99	12.88	13.28
National Representative Reliability Sample N = 2558	Reliability Coefficients															
		.88	.92	.91	.82	.85	.85	.95	.79	.70	.90	.91	.85	.81	.90	.98
Weighted National Standardization Sample N = 20,831 (Wrd N = 59,276)	RAW SCORES															
	Mean	23.2	32.2	19.4	18.8	17.5	15.4	17.7	17.1	10.3	28.8	18.7	19.3	12.5	15.9	21.5
	S.D.	8.56	13.04	9.10	7.97	7.26	6.37	6.77	6.25	4.38	10.60	6.31	7.80	5.69	6.36	7.32
	S.E. Meas.	3.0	3.8	2.8	3.4	3.8	2.5	1.5	2.8	2.4	3.3	1.9	3.0	2.5	2.0	1.0
	GRADE EQUIVALENTS															
	Mean	60.8	62.1	62.0	62.7	61.9	61.8	62.1	61.4	61.3	62.3	61.6	62.1	60.9	61.5	61.6
	S.D.	16.24	15.19	18.30	18.16	18.84	19.09	16.29	15.75	15.97	15.36	13.68	13.88	13.96	12.89	13.31
	S.E. Meas.	5.7	4.4	5.6	7.7	7.3	7.4	3.6	7.0	8.6	4.7	4.1	5.3	6.1	4.1	2.0
	AGE EQUIVALENTS															
	Mean	114.4	115.1	115.8	116.5	116.3	115.6	116.0	115.1	115.7	116.0	115.6	115.8	115.1	115.4	115.3
	S.D.	16.35	15.37	19.00	18.46	19.01	19.03	16.52	15.78	16.10	15.30	13.72	13.95	14.03	12.94	13.42
	S.E. Meas.	5.7	4.5	5.8	7.9	7.3	7.4	3.6	7.2	8.7	4.7	4.1	5.4	6.2	4.1	2.0
	STANDARD SCORES															
	Mean	85.0	85.8	84.8	85.4	84.9	85.2	85.3	85.5	85.4	86.3	85.9	86.0	86.1	85.7	85.7
	S.D.	13.21	12.53	14.18	13.58	14.41	14.25	12.80	12.82	12.86	12.24	11.46	11.49	11.81	10.98	11.22
S.E. Meas.	4.6	3.6	4.3	5.8	5.5	5.5	2.8	5.9	7.0	3.8	3.4	4.4	5.2	3.4	1.7	

APPENDIX F

STABILITY OF SCORES

STABILITY OF SCORES

The evidence of stability of scores over a fairly long period of time has a somewhat different meaning for intelligence or aptitude tests than for achievement tests. The former types of tests are concerned with abilities thought to change relatively little over time. This stability over a period of months or years has some relevance for the issue of reliability. Achievement, on the other hand, may change markedly in a year's time. In fact, one goal of good teaching is to alter patterns of unsatisfactory growth. If the correlations between scores for successive years are exceedingly high, this may constitute indirect evidence that little was done as a result of the first testing to adapt instruction to individual differences that were revealed. On the other hand, when equivalent forms are used in the two testings, the correlations may be regarded as minimum estimates of equivalent forms reliability. In using stability coefficients for such purposes it is important to remember that they are attenuated, not only by errors of measurement, but also by differences associated with changes in true status.

The stability coefficients reported in Table 6.6 are based upon three studies: the Coffman and Chen data are from an unpublished four-year longitudinal study of two representative Iowa school systems; the Linn (24) data are from the New York State Quality Measurement Project; and the Merenda and Jackson (29) data are from a sample of ten school systems in the LaCrosse, Wisconsin, area.

The relatively high correlations obtained give additional evidence of the reliability of the tests. On the other hand, correlations between scores for successive years being so high *might* indicate that schools were not making effective use of test results. It also means that the reliabilities of gains between successive years are necessarily relatively low. The "optimum" coefficients of stability in ideal school situations (i.e., in which optimum provisions for instructional needs are made for each individual pupil) for tests of this type have not yet been established.

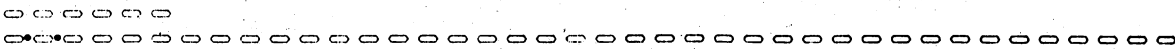
Additional data on the stability of school system averages are available from the New York State Quality Measurement Project (11). Correlations between Grade 5 and Grade 8 ITBS GE's were secured by three different methods. Method I (Matched Longitudinal) correlations were based on school system means for the same students, those with complete sets of test scores in Grade 5 and again three years later in Grade 8. Method II (Unmatched Longitudinal) correlations were between school system means for the complete set of fifth grade scores with the complete set of eighth grade scores three years later. Method III (Cross-Sectional) correlations were based on the system means for the complete set of fifth grade scores with the complete set of eighth grade scores for the same year.

The correlations for the three methods are shown in Table 6.7. The correlations for school system means are not greatly different from those reported from the same project for pupil scores (Table 6.6). As would be expected, the obtained correlations tended to be somewhat higher for Method I, in

which the same pupils were tested in both grades, than those in Method II, in which some pupils were different, and in Method III, in which all pupils were different.

APPENDIX G

SAMPLE - ESTES READING ATTITUDE SCALE

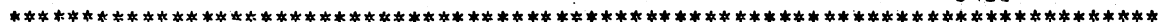


ESTES READING ATTITUDE SCALE

GARRISON ELEMENTARY PUPIL GRADE LEVEL (MARK OUT) .1. .2. .3. .4. .5. .6.

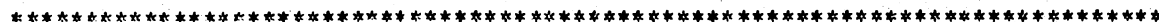
TO THE STUDENT--READ EACH STATEMENT. AS YOU READ THE STATEMENT, MARK OUT THE LETTER WHICH AGREES WITH HOW YOU FEEL ABOUT THE STATEMENT.
 (BE SURE TO USE A LEAD PENCIL TO MAKE YOUR MARKS)

* KEY--A STRONGLY AGREE
 * B AGREE
 * C UNDECIDED
 * D DISAGREE
 * E STRONGLY DIS-AGREE
 *



EXAMPLE--ALL BOOKS SHOULD HAVE GREEN COVERS. .A. .B. .C. .D. .E.

- 1. READING IS FOR LEARNING BUT NOT FOR ENJOYMENT. .A. .B. .C. .D. .E.
- 2. MONEY SPENT ON BOOKS IS WELL-SPENT. .A. .B. .C. .D. .E.
- 3. THERE IS NOTHING TO BE GAINED FROM READING BOOKS. .A. .B. .C. .D. .E.
- 4. BOOKS ARE A BORE. .A. .B. .C. .D. .E.
- 5. READING IS A GOOD WAY TO SPEND SPARE TIME. .A. .B. .C. .D. .E.
- 6. SHARING BOOKS IN CLASS IS A WASTE OF TIME. .A. .B. .C. .D. .E.
- 7. READING TURNS ME ON. .A. .B. .C. .D. .E.
- 8. READING IS ONLY FOR GRADE GRUBBERS. .A. .B. .C. .D. .E.
- 9. BOOKS AREN'T USUALLY GOOD ENOUGH TO FINISH. .A. .B. .C. .D. .E.
- 10. READING IS REWARDING TO ME. .A. .B. .C. .D. .E.
- 11. READING BECOMES BORING AFTER AN HOUR. .A. .B. .C. .D. .E.
- 12. MOST BOOKS ARE TOO LONG AND DULL. .A. .B. .C. .D. .E.
- 13. FREE READING DOESN'T TEACH ANYTHING. .A. .B. .C. .D. .E.
- 14. THERE SHOULD BE MORE TIME FOR FREE READING DURING THE DAY. .A. .B. .C. .D. .E.
- 15. THERE ARE MANY BOOKS WHICH I HOPE TO READ. .A. .B. .C. .D. .E.
- 16. BOOKS SHOULD NOT BE READ EXCEPT FOR CLASS REQUIREMENTS .A. .B. .C. .D. .E.
- 17. READING IS SOMETHING I CAN DO WITHOUT. .A. .B. .C. .D. .E.
- 18. A CERTAIN AMOUNT OF SUMMER VACATION SHOULD BE SET ASIDE FOR READING. .A. .B. .C. .D. .E.
- 19. BOOKS MAKE GOOD PRESENTS. .A. .B. .C. .D. .E.
- 20. PEADING IS DULL. .A. .B. .C. .D. .E.



APPENDIX H

CORRELATIONS OF THE ESTES ATTITUDE SCALE

**Correlations of Attitude Scales with
Verbal IQ, Quantitative IQ, Corresponding Course Grades, and Grades
With the Effects of Verbal and Quantitative IQ Controlled Statistically**

ATTITUDE SCALE	CRITERION				
	Verbal IQ	Quant IQ	Grades	Grades ^a	Grades ^b
English	.12*	.08	.29*	.27*	.28*
Mathematics	.20*	.21*	.35*	.30*	.30*
Science	.13*	.10*	.22*	.18*	.20*
Social Studies	.10*	.02	.33*	.32*	.33*

Note — There are no course grades in Reading.

^aCorrelations of Corresponding Grades with the effect of Verbal IQ controlled statistically.

^bCorrelations of Corresponding Grades with the effect of Quantitative IQ controlled statistically.

*p < .05

The Estes Attitude Scales

**Internal Reliability Coefficients, Coefficients
Of Factorial Similarity, Intercorrelations of Scale Totals,
And Principal Component Factor Loadings for Scale Intercorrelations**

Scale	Reliabilities		Coefficient of Factor Similarity	Scale Intercorrelations				Factor Loadings	
	Sample A	Sample B		Math	Reading	Science	S. Studies	I	II
ENGLISH	.85	.76	.81	.25*	.40*	.27*	.44*	.79	
MATHEMATICS	.86	.84	.92		.27*	.36*	.27*		.82
READING	.93	.87	.94			.24*	.41*	.77	
SCIENCE	.88	.85	.93				.39*		.79
SOCIAL STUDIES	.91	.82	.95					.71	.32

Note — Loadings with absolute values less than .25 are omitted. All items have been scored so that higher score indicates more positive attitude.

*p < .001

**Means and Standard Deviations for
Samples A and B**

Attitude Scale	Sample A		Sample B	
	Mean	S. D.	Mean	S. D.
ENGLISH	50.34	9.30	50.29	8.24
MATHEMATICS	54.03	9.37	51.94	10.04
READING	57.00	11.76	53.74	10.29
SCIENCE	51.25	10.20	51.56	9.77
SOCIAL STUDIES	53.25	10.43	51.17	9.15

The Estes Attitude Scales

Correlations of Attitude Scales with Self Ratings, Peer Nominations,
Teacher Ranking, Course Grades, Achievement Scores, and Extracurricular Tallies

CRITERION MEASURE	ATTITUDE SCALE						
	English	Math	Reading	Science	SSt	Verbal	Quant
SELF RATING							
English	<u>.58*</u>		.28*		.24*	<u>.46*</u>	
Mathematics		<u>.63*</u>		.14			<u>.45*</u>
Reading	.24*		<u>.70*</u>		.25*	<u>.53*</u>	
Science	.10	.24*	.12	<u>.65*</u>	.20*	<u>.18*</u>	<u>.55*</u>
Social Studies	<u>.22*</u>		.24*	<u>.15*</u>	<u>.58*</u>	<u>.44*</u>	.14
PEER NOMINATIONS							
English	<u>.23*</u>	.15*	.26*	.12*	.23*	<u>.31*</u>	.16*
Mathematics		<u>.20*</u>	.13	.13	.12	<u>.15*</u>	<u>.20*</u>
Reading	.17*	.15*	<u>.37*</u>		.23*	<u>.34*</u>	.13
Science		.17*		<u>.23*</u>			<u>.25*</u>
Social Studies	.17*	.12	.20*		<u>.11</u>	<u>.21*</u>	.12
TEACHER RANKING ^a							
English	<u>.30*</u>	.20*	.28*		.22*	<u>.34*</u>	.16*
Mathematics		<u>.28*</u>	.18*		.15*	<u>.19*</u>	<u>.19*</u>
Science	.14	.28*	.26*	<u>.23*</u>	.25*	<u>.29*</u>	<u>.31*</u>
Social Studies	.16*	.17*	.22*	.16*	<u>.27*</u>	<u>.27*</u>	.19*
COURSE GRADES ^a							
English	<u>.29*</u>	.22*	.35*	.11	.25*	<u>.38*</u>	.19*
Mathematics		<u>.35*</u>	.16*			.13	<u>.23*</u>
Science		.26*	.21*	<u>.22*</u>	.16*	.21*	<u>.29*</u>
Social Studies	.22*	.21*	.29*	.13	<u>.33*</u>	<u>.35*</u>	.20*
ACHIEVEMENT SCORE							
English	<u>.13</u>	.17*	.40*		.18*	<u>.32*</u>	.12
Mathematics		<u>.26*</u>	.24*	.10		<u>.17*</u>	<u>.21*</u>
Reading	.14	.22*	<u>.50*</u>	.13	.19*	<u>.38*</u>	.21*
Science	.10	.26*	<u>.35*</u>	<u>.22*</u>		<u>.25*</u>	<u>.28*</u>
Social Studies	.10	.20*	.40*	.16*	<u>.14</u>	<u>.29*</u>	.21*
EXTRACURRICULAR							
English	<u>.16*</u>	.11	.27*		.19*	<u>.27*</u>	.11
Mathematics		<u>.10</u>	.11	.11		.10	<u>.13</u>
Reading	.18*	.17*	<u>.31*</u>	.11	.22*	<u>.31*</u>	.16*
Science			.10	<u>.14</u>			<u>.12</u>
Social Studies	.13		.22*		<u>.17*</u>	<u>.22*</u>	

Note - Only correlations significant at the .01 level are reported. Correlations indicating degree of scale validity are underlined.

^aThere are no teacher ratings or course grades in Reading.

*p < .001

APPENDIX I

PROGRAM MANAGEMENT GUIDE SHEET

PROGRAM MANAGEMENT

EXAMPLE - SUGGESTED CHECK LIST FOR COORDINATED, LABORATORY CLASSROOM INSTRUCTION

SCHOOL ORGANIZATION	PROGRAM FACTORS
FACILITY: _____ CLASSROOM _____ LEARNING CTR. _____ OPEN SPACE OTHER: _____	STAFFING: _____ TEACHER _____ TEACHER/AIDE _____ TEAM TEACHING _____ SPECIALIST _____ TEACHER OTHER: _____
STORAGE: _____ MOBILE CART _____ FILE CABINET _____ CUPBOARD _____ BOOK SHELVES OTHER: _____	PUPIL/TEACHER RATIO: ____/____ GROUPING: _____ HOMOGENEOUS _____ CROSS-AGE _____ HETEROGENEOUS OTHER: _____
DISTRIBUTION: _____ MATERIALS CHECKED OUT OF CENTRAL LOCATION _____ MATERIALS HOUSED IN RESPECTIVE CLASSROOM OTHER: _____	DAILY TIME ALLOTTED TO TEACHING READING AND LANGUAGE ARTS: _____
EQUIPMENT: _____ LISTENING CENTER _____ HEADSETS (NO.) _____ _____ JACK BOX _____ CASSETTE PLAYERS (NO.) _____ OTHER: _____	TEACHING MATERIALS: _____ _____ _____ _____ _____ _____ _____
STUDENT TRANSIENCY: _____ LESS THAN 25% _____ 26% - 50% _____ 51% - 75% _____ 76% - 100% OTHER: _____	

APPENDIX J

TEACHING ALTERNATIVES SUPPLEMENT

EXAMPLE OF CROSS REFERENCING OF EQUIPMENT AND MATERIALS

TEACHING ALTERNATIVE SUPPLEMENT— WITH COORDINATED LABORATORY CLASSROOM
APPROACH

(teacher may quickly identify at the precise page number a myriad of
supplementary activities for a child who needs prescriptive teaching in
any one skill area)

TEACHING ALTERNATIVES	PAGE
<u>Acoustifone Corporation</u>	
Reading Achievement Program	1
<u>Allyn and Bacon, Inc.</u>	
Sheldon Basic Reading Series, 1968	8
<u>American Book Company</u>	
The READ System, 1968	12
<u>Barnell Loft, Ltd.</u>	
Specific Skill Series	318**
<u>Basic Education Computers, Inc.</u>	
Beginning Reading Program	324**
<u>Behavioral Research Laboratories</u>	
Sullivan Reading Program, 1969	16
<u>Bell & Howell</u>	
Language Master	28
<u>Benefic Press</u>	
Reading Laboratory	229*
<u>Benziger, Inc.</u>	
The Linguistic Readers, 1971	22

	PAGE
<u>Field Educational Publications, Incorporated</u>	
The Cornerstone Readers, 1970	251*
Field Reading Skills Program, 1972	244*
The Kaleidoscope Readers, 1969	247*
<u>Follett Educational Corporation</u>	
City Schools Reading Program, 1970	76
<u>Gamco Industries, Inc.</u>	
Creative Visuals	80
<u>Ginn and Company</u>	
The Ginn Basic Readers 100 Edition, 1966	258*
Reading 360, 1970	84
Sounds We Use, 1967; 1969	255*
<u>Harcourt Brace Jovanovich, Inc.</u>	
The Bookmark Reading Program, 1970	88
<u>Harper and Row, Publishers, Inc.</u>	
Basic Reading Program, 1966	31
Design for Reading, 1972	327**
<u>D. C. Heath and Company</u>	
Miami Linguistic Readers, 1970	97
<u>Hoffman Electronics Corporation</u>	
Language Arts Program	102
<u>Houghton Mifflin Company</u>	
Houghton Mifflin Readers, 1971	107

	PAGE
<u>Spin-A-Test Company</u>	
Manual for the Spin-A-Test Game-Making Technique Applied To Remedial Reading	310*
<u>Sterling Educational Films</u>	
Language Arts, Phonics Series	210
<u>Sullivan Associates/Webster Division, McGraw-Hill Book Company</u>	
Programmed Reading, 1968	213
<u>Teaching Technology Corporation</u>	
Multi-media, audio-visual materials	218
<u>Webster Division/McGraw-Hill Book Company</u>	
Programmed Reading, 1971	35
<u>Wollensak/3M Company</u>	
Teaching Tapes	221
<u>Richard L. Zweig Associates, Inc.</u>	
Zweig Reading Reinforcement System, 1972	38

Harper and Row: Basic Reading Program, 1966

TEACHING ALTERNATIVES - Word Analysis/Phonetic Analysis

RETEACH	BOOK	PAGE
p-1. initial consonant 'b'	- City Days, City Ways	- T97
p-2. initial consonant 'c'	- Janet and Mark	- T76
p-3. initial consonant 'd'	- Janet and Mark	- T101
p-4. initial consonant 'f'	- City Days, City Ways	- T128
p-5. initial consonant 'g'	- Outdoors and In	- T184
p-6. initial consonant 'h'	- Outdoors and In	- T168
p-7. initial consonant 'j'	- Janet and Mark	- T41
p-8. initial consonant 'l'	- Outdoors and In	- T138
p-9. initial consonant 'm'	- Janet and Mark	- T59
p-10. initial consonant 'n'	- Outdoors and In	- T199
p-11. initial consonant 'p'	- Around the Corner	- T44
p-12. initial consonant 'r'	- City Days, City Ways	- T52
p-13. initial consonant 's'	- Janet and Mark	- T83
p-14. initial consonant 't'	- City Days, City Ways	- T63
p-15. initial consonant 'w'	- Outdoors and In	- T152
p-16. initial consonant 'y'	- City Days, City Ways	- T82
p-17. initial digraph 'sh'	- Just For Fun	- T155
p-18. initial digraph 'wh'	- City Days, City Ways	- T112
1-1. final consonant 'd'	- Around the Corner	- T224
1-2. final consonant 'k'	- Real and Make-Believe	- T61
1-3. final consonant 'l'	- Around the Corner	- T194
1-4. final consonant 'n'	- Real and Make-Believe	- T65
1-5. final consonant 'r'	- Around the Corner	- T183
1-6. final consonant 'p'	- Real and Make-Believe	- T134
1-7. final consonant 't'	- Around the Corner	- T170
1-8. final consonant 'k'	- Around the Corner	- T144
1-9. final consonant 'x'	- Real and Make-Believe	- T168
1-10. final phonetic part 'st'	- Real and Make-Believe	- T164
1-11. final phonetic part 'ng'	- Real and Make-Believe	- T58
1-12. final phonetic part 'ch'	- Real and Make-Believe	- T160
1-13. final phonetic part 'ck'	- Real and Make-Believe	- T228
1-14. final phonetic part 'll'	- Real and Make-Believe	- T124
1-15. short vowel 'a'	- Real and Make-Believe	- T51
1-16. short vowel 'e'	- Real and Make-Believe	- T201
1-17. short vowel 'i'	- Real and Make-Believe	- T96
1-18. short vowel 'o'	- Real and Make-Believe	- T170
1-19. short vowel 'u'	- Real and Make-Believe	- T234
1-20. long vowel 'a'	- Real and Make-Believe	- T70

Webster Division, McGraw-Hill: Programmed Reading, 1971

TEACHING ALTERNATIVES - Word Analysis/Phonetic Analysis

RETEACH	BOOK	FILMSTRIP	FRAME
p-1. initial consonant 'b'	- Two	- 9	- 16
p-2. initial consonant 'c'	- One		
p-3. initial consonant 'd'	- One		
p-4. initial consonant 'f'	- One	- 10	- 23
p-5. initial consonant 'g'		- 12	- 9
p-6. initial consonant 'h'		- 10	- 41
p-7. initial consonant 'j'	- Six	- 8	- 18
p-8. initial consonant 'l'	- Two	- 14	- 13
p-9. initial consonant 'm'	- Pre-reader	- 9	- 22
p-10. initial consonant 'n'	- Pre-reader		
p-11. initial consonant 'p'	- Pre-reader	- 9	- 20
p-12. initial consonant 'r'	- Two	- 12	- 20
p-13. initial consonant 's'	- One		
p-14. initial consonant 't'	- Pre-reader	- 9	- 11
p-15. initial consonant 'w'	- Three	- 13	- 30
p-16. initial consonant 'y'	- No prescription		
p-17. initial digraph 'sh'	- One	- 13	- 5
p-18. initial digraph 'wh'	- Fifteen		
1-1. final consonant 'd'	- One		
1-2. final consonant 'k'	- Two		
1-3. final consonant 'l'	- Three		
1-4. final consonant 'm'	- One		
1-5. final consonant 'n'	- Pre-reader		
1-6. final consonant 'p'	- Pre-reader		
1-7. final consonant 'r'	- No prescription		
1-8. final consonant 't'	- Pre-reader		
1-9. final consonant 'x'	- Five		
1-10. final phonetic part 'st'	- No prescription		
1-11. final phonetic part 'ng'	- One		
1-12. final phonetic part 'ch'	- Two		
1-13. final phonetic part 'ck'	- Two		
1-14. final phonetic part 'll'	- Three		
1-15. short vowel 'a'	- Pre-reader	- 9	- 4
1-16. short vowel 'e'	- Two		
1-17. short vowel 'i'	- Pre-reader		
1-18. short vowel 'o'	- Pre-reader	- 8	- 18
1-19. short vowel 'u'	- Seven		

Richard L. Zweig Associates: Zweig Reading Reinforcement System

TEACHING ALTERNATIVES - Perceptual Skills

RETEACH	PROGRAM	LOCATION
a. audio-visual reversals	- R PD	- 16-30
b. m-n-h substitutions	- R PD	- 19-21
c. r-l substitutions	- R PD	- 2, 5, 26 27
d. f-th substitutions	- Y PD	- 25-27
	- G PD	- 16-18
e. b-d-p reversals	- R PD	- 16-18
f. th-wh substitutions	- R PD	- 22-24
	- Y PD	- 25-27
	- G PD	- 16-18
g. s-f substitutions	- R PD	- 28-30
h. sh-ch substitutions	- R PD	- 10-12
	- Y PD	- 28-33
	- G PD	- 16-18
i. s-th substitutions	- R PD	- 22-24
	- Y PD	- 25-27

A Coordinated Laboratory Classroom Approach - chronological-sequential student record profile
ERIC'S PROFILE: MODEL
 (Twenty percent photo reduction) Grades k-6

Continuous Pupil PROGRESS PROFILE in READING

DIRECTIONS TO THE TEACHER: These profiles are to be used as a continuous record of the pupil's progress in reading. There is a separate profile for each skill area: Phonetic Analysis, Structural Analysis, Vocabulary Development, Comprehension and Study Skills. In recording the results of each test, make sure you are using the correct skill profile. Each one indicates the objectives on individual tests.

Count the number of incorrect responses for each behavioral objective. Based on the scoring instructions, write the date of the test beside the skill in the "Proceed" or "Reteach" column. At the beginning of the Phonetic Analysis profile is a list of letters representing perceptual-type problems. If a skill number followed by one of these letters is circled, write the letter next to the date of the test beside the skill, and place a check (✓) under "A" for auditory or "V" for visual in the reteach column. See teacher's manual for complete directions.

WORD ANALYSIS / Phonetic Analysis

	Reteach		Proceed		Reteach		Proceed	
	A	V						
a. audio-visual reversals					1-21. long vowel 'e'			
b. m-n-h substitutions					1-22. long vowel 'i'			
c. r-l substitutions					1-23. long vowel 'o'			
d. f-th substitutions					1-24. long vowel 'u'			
e. b-d-p reversals					1-25. regular vowel combination 'ee'			
f. th-wh substitutions					1-26. regular vowel combination 'av'			
g. g-f substitutions					1-27. 'y' as a vowel			
h. sh-ch substitutions					1-28. irregular vowel combination 'ow'			
i. s-th substitutions					1-29. irregular vowel combination 'ow'			
p-1. initial consonant 'b' ✓			10/14/72	10/21/72	1-30. irregular vowel combination 'ew'			
p-2. initial consonant 'c'					1-31. murmur diphthong 'ar'			
p-3. initial consonant 'd'					1-32. murmur diphthong 'er'			
p-4. initial consonant 'f'					1-33. murmur diphthong 'ir'			
p-5. initial consonant 'g'					1-34. murmur diphthong 'ur'			
p-6. initial consonant 'h'					1-35. initial consonant 'k'			
p-7. initial consonant 'j'					1-36. initial blend 'sp'			
p-8. initial consonant 'l'					1-37. initial blend 'st'			
p-9. initial consonant 'm' ✓			10/14/72	10/21/72	1-38. initial blend 'sl'			
p-10. initial consonant 'n'					1-39. initial blend 'sm'			
p-11. initial consonant 'p'					1-40. initial blend 'sw'			
p-12. initial consonant 'r'					1-41. initial blend 'spr'			
p-13. initial consonant 's'					1-42. initial blend 'fl'			
p-14. initial consonant 't'					1-43. initial blend 'bl'			
p-15. initial consonant 'w' ✓✓			10/14/72	10/21/72	1-44. initial blend 'cl'			
p-16. initial consonant 'y'					1-45. initial blend 'tr'			
p-17. initial digraph 'sh' ✓			10/14/72	11/7/72	1-46. initial blend 'gr'			
p-18. initial digraph 'wh' ✓✓			10/14/72	11/7/72	1-47. initial blend 'cr'			
1-1. final consonant 'd' ✓			12/4/72		1-48. initial blend 'fr'			
1-2. final consonant 'k'					1-49. phonetic part 'qu'			
1-3. final consonant 'l'					1-50. initial digraph 'ch'			
1-4. final consonant 'm'					1-51. initial digraph 'kn'			
1-5. final consonant 'n'					1-52. initial digraph 'th' (voiced)			
1-6. final consonant 'p' ✓			12/4/72		1-53. initial digraph 'th' (unvoiced)			
1-7. final consonant 'r'					2-1. initial consonant 'z'			
1-8. final consonant 't'					2-2. initial consonant 'v'			
1-9. final consonant 'x'					2-3. hard 'g'			
1-10. final phonetic part 'st' ✓✓			12/4/72		2-4. soft 'g'			
1-11. final phonetic part 'ng'					2-5. regular vowel combination 'ai'			
1-12. final phonetic part 'ch'					2-6. regular vowel combination 'ea'			
1-13. final phonetic part 'ck'					2-7. regular vowel combination 'oa'			
1-14. final phonetic part 'll' ✓			12/4/72		2-8. initial digraph 'ch' (k)			
1-15. short vowel 'a'					2-9. irregular vowel combination 'aw'			
1-16. short vowel 'e'					2-10. phonetic part 'sch'			
1-17. short vowel 'i'					2-11. initial digraph 'gu'			
1-18. short vowel 'o'					2-12. final consonant 's'			
1-19. short vowel 'u'					2-13. final blend 'nk'			
1-20. long vowel 'a'					2-14. final blend 'nd'			

Pupil's Name: ERIC

Age: 6

Year in School: 12 3 4 5 6

RED PART 1
RED PART 2
RED PART 3
RED PART 4
RED PART 5
RED PART 6
ORANGE PART 1
ORANGE PART 2

2
VITA

John Gale Conyers

Candidate for the Degree of

Doctor of Education

Thesis: EFFECTS OF A COORDINATED LABORATORY CLASSROOM APPROACH TO THE TEACHING OF READING IN GRADES 3, 4, 5

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