A DESCRIPTION, ANALYSIS AND EVALUATION

OF THREE APPROACHES TO THE

TEACHING OF READING

APPROVED:

Graduate Committee:

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Major Professor

_____
Committee Member

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Committee Member

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Dean of the School of Education

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Dean of the Graduate School

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TEACHING OF READING

DISSERTATION

Presented to the Graduate Council of the

North Texas State University in Partial

Fulfillment of the Requirements

For the Degree of

DOCTOR OF EDUCATION

By

Kenneth Boyd Lane, B. A., M. Ed.

Denton, Texas

August, 1963

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CHAPTER I

INTRODUCTION

This study is concerned with three different approaches to the teaching of reading. The approaches are described in terms of the methods and techniques employed and the reasons for employing the method or technique indicated. Field testing of these approaches in a variety of classrooms and grade levels and in many combinations constitutes one basis for evaluation. Another basis is teacher evaluation of the approaches based on actual study and implementation of the approaches in the teacher's own classroom.

Statement of the Problem

The problem, in brief, is to describe, analyze, and evaluate three approaches to the teaching of reading in grades one through six in selected school districts in a California county.

The problem stated in general is as follows: To develop a written descriptive and analytical definition of three theoretical approaches to the teaching of reading to elementary school pupils, to analyze and evaluate each of the three approaches in terms of (1) teacher evaluation of in-service education programs designed to acquaint them with the approach which they individually selected, (2) the consequences of implementing the selected approach

in classrooms in terms of teacher reaction and evaluation, and (3) the consequences of implementing the approaches in terms of pupil scores on standardized achievement tests in reading, measures of attitude toward reading, and scores on personal and social adjustment tests made by pupils taught by the participating teachers in selected school districts, grades one through six in a southern California county.

Sub-Problems

This study was designed to follow a four-year sequence as follows: first year, development of research design and development of basic definitions of the approaches; second year, inservice education phase for teacher participants and implementation phase for classroom experimentation; third year, evaluation of data and reporting of findings to participating teachers and districts; fourth year, completion of general reporting of findings and completion of statistical treatment of all data. The following sub-problems relate to the sequence indicated above:

The description and analysis of the three approaches.--To describe and analyze in terms of descriptive criteria (method, technique, procedure, material) and analytical rationale (philosophical consideration and psychological theory of learning) and to develop an over-all or general definition of each of the

following approaches: (1) the Basic Reading Approach, (2) the Individualized Reading Approach, and (3) the Language Experience Approach to reading.

Proposal of participation in the study to teachers.--To establish qualifications for teacher participants and acquaint them with the study, its design, purpose, and the details of the theoretical approaches to enable them to decide whether or not they wished to participate and which approach they wished to study and to implement in the classroom.

In-service education programs for teachers in the study.--To develop in-service education leadership teams to plan and to conduct monthly sessions for participating teachers and to prepare teachers by helping them attain greater insight into their selected approach through these sessions.

Selection and/or development of pupil testing instruments.--To select standardized achievement tests in reading, tests of personal and social adjustment, and to develop and validate a test of pupil attitude toward reading to be used in determining consequences and relationships.

Development of instruments for collecting data from participating teachers.--To develop the following instruments: (1) an instrument dealing with teaching approach to be used to determine each teacher's approach during the in-service phase of the study and to

determine the degree of conformity to the teacher's selected approach during the implementation phase of the study; (2) an instrument dealing with the in-service education program for participating teachers to be used to determine teachers' evaluations of this aspect of the study; (3) instruments dealing with the elements of each of the three approaches to be used to determine teachers' estimates of how practical, workable, and significant each of the elements of the particular approach was in actual classroom operation.

Evaluation of data.--To treat data statistically to provide bases for determining: (1) the significance of differences between teachers' own approaches as compared with teachers' conformity to their selected theoretical approaches, (2) participating teachers' evaluation of the in-service education programs dealing with their selected approach, (3) teachers' evaluation in terms of effectiveness of elements of their selected theoretical approach, (4) consequences of implementing the theoretical approaches as compared with consequences of implementing individual teacher approaches in terms of pupil scores on standardized reading achievement tests, pupil scores on personal and social adjustment tests, and pupil scores on an attitude toward reading inventory, (5) relationships of reading achievement test scores and personal/social adjustment test scores, reading achievement test scores and attitude toward reading inventory scores, personal/social adjustment test scores and attitude toward reading inventory scores, and other possible pertinent relationships.

Purpose of the Study

The primary purpose of the study is to provide opportunity for qualified and interested teachers to participate voluntarily in educational research which has as its objective the improvement of instruction in reading through classroom experimentation. A related purpose is the development of operational definitions of the three selected approaches to the teaching of reading to serve as bases for classroom experimentation both for purposes of this study and for other studies in the field of reading instruction. A further purpose is to evaluate as carefully as possible within the limitations of the design of the study, the consequences of implementing the approaches in the classroom. These evaluations may well serve as a guide to school districts or individual teachers as the district or the individual teachers contemplate using any one of the three approaches.

A purpose related to in-service education is to train, as a result of participation in this study, teachers who may serve as consultants or resource persons in their own districts in the reading approach with which they experimented. Using the material developed in the study and their experiences in the study, these teachers may become valuable staff leaders in the districts.

A purpose of improving reading instruction generally may be achieved if teachers not participating in the study are motivated to evaluate their own approaches to the teaching of reading in light of the findings of the study. This may lead many teachers

to experiment with one of the three approaches or to develop new
approaches of their own.

The Need for the Study

Improvement of instruction is inevitably dependent upon the
teacher and his feeling of need for improvement. Studies and
the resultant research data are valuable to the individual teacher
generally to the extent such data and findings seem pertinent and
applicable to his particular set of circumstances. There is great
need, then, to design and carry out studies that meet the criteria
of pertinency and applicability to day-by-day classroom teaching
situations. One basic way to assure that these criteria are at
least met in part is to determine felt needs of as many teachers
as possible. Another way to be reasonably sure that these criteria
are met is to seek the active involvement of many teachers in the
study itself. If this is done, there is the added value of at-
tracting other teachers, not in the study, to a consideration of the
details and findings of the project. In other words, teachers
generally have more confidence in and seem more interested in
"practical" curriculum research involving themselves or other
teachers than they are in more abstract and further removed in-
vestigations.

This study has been designed to meet the need for classroom
teacher participation in educational research which deals with a
topic identified by them as important and is considered by them
as an area of needed study. Teachers did indicate that the field

of reading instruction was one in which they felt a need for study. They also indicated an interest in each of the three approaches and seemed anxious to participate in the study in order to experiment with new approaches and learn at firsthand some of the consequences of implementing them in the classroom. Their willingness to volunteer for the project and to continue in it voluntarily for a full school year indicates their acceptance.

A more general need arises from the function of our educational institutions. The American public school has long accepted as one of its major responsibilities the task of promoting literacy. A democratic society by its very nature places great faith in the wisdom and abilities of the individual citizen. The ability to read and write is considered to be vital to each member of our society. Any attempt to make better provision for the development of this ability by all citizens is in keeping with the spirit of a basic American ideal. This study is aimed at opening up more approaches to the teaching of reading with a view of possible improvement of reading instruction.

Much improvement has been made over the years as the schools have struggled with the task of promoting and refining literacy to a high level. Hundreds of studies conducted in the field of reading instruction have modified markedly the methods and materials employed in the teaching of reading. Burton makes the point that these changes were not always for the best but eventually culminated in a much improved situation.

The evolution of reading instruction for a time was fraught with considerable confusion. Schools, in general, made great effort to utilize the findings of research, but often failed to utilize them properly in relation to functional goals of instruction. Some schools began to emphasize the mechanics of reading, to teach "speed and comprehension" to the exclusion of all other considerations. Other schools almost completely ignored these factors, and stressed literary reading or reading for appreciation, frequently talking in trite verbalisms about such values as "truth, beauty, and wisdom." After a time, however, schools began to broaden their programs of instruction, to break away from teaching mechanics alone and literary appreciation alone. They began to achieve a far more sensible balance by giving consideration to such factors as children's interests, backgrounds, and levels of maturity. At the same time, publishers began to produce better basic and supplementary materials for children to use, materials better suited to their interests, abilities, and needs, and better suited in the sense of fidelity to life (2, p. 148).

The complexity of the problem indicates the need for many more studies. It is now generally accepted by many curriculum workers, teachers and administrators, as a result of the availability of much information concerning human growth and the learning process, that no single approach to teaching reading is apt to be the best or only solution to meet the needs created by the great diversity of our school population and the diversity among public school teachers. Improved practices will be indicated and deeper insights will be achieved as a result of a broad front of investigations probing into method, materials, and the learning process. This study should be considered as one of the many needed to accomplish these ends.

Background of the Study

One of the several functions of the department of education of a large county in California is the coordination of curriculum. The department has operated on the premise that this is a service function rather than an activity imposed upon the various school districts in the county. For several years the department staff has sought ways and means of providing services on a broader scale to the more than fifty school districts it serves.

One type of service which had been frequently discussed by the staff was the provision of leadership and service in county-wide curriculum research. Several small "action research" projects and pilot studies had been carried out by staff members and district personnel. These were considered to be worth while and necessary. It was felt, however, that a more formal and systematic approach should be made to curriculum research which would involve many educators from many of the school districts in the county. Thinking along these lines, an assistant superintendents council, an organized group of district and county administrators charged with curriculum responsibilities, requested that the department of education design and carry out a research study in the field of elementary arithmetic instruction. This was done. Other studies were requested by this same group. One of the studies requested is the one described in this document.

A curriculum coordinator on the department staff was assigned the responsibility for preparing and presenting a study design

proposal to the staff and to the assistant superintendents council. The study was approved by both groups. Several rewritings of the proposal were necessary before final approval was achieved.

Following final approval, a committee of three other curriculum coordinators was assigned to assist the staff member responsible for the proposal. This committee, the Reading Study Project Committee, was charged with the over-all responsibility for carrying out the study. The committee was assigned regular office time in which to refine the proposal, gather data, and prepare the necessary definitions, instruments, and plans for conducting the project. Other staff members, outside consultants, and district personnel assisted the committee in carrying out its responsibility.

The department staff and the assistant superintendents council along with a considerable number of teachers felt then, and continue to feel at this time, that the teaching of reading in the elementary schools of the county is one of the most important professional duties of the teacher. Teachers constantly request advice, help, and materials in their attempt to improve reading instruction. They have shown much interest in current trends in this area of the curriculum. Interpretations of the material reported in the literature concerning approaches to the teaching of reading have been made by many teachers and have, to some degree, been implemented in their classrooms. Individual experimentation had convinced many of these teachers that there were, indeed, some unusually promising

ideas to be more fully explored. It was such a climate, conducive to action that gave impetus to and sustained interest in the study even though at the time, national and local focus was upon mathematics, science, and foreign language instruction.

Further significance of this type of study is pointed out in the professional literature. Gray, in the Encyclopedia of Educational Research (7), reports a great number of studies under the general heading of methods of teaching reading. These studies have dealt with incidental approaches to reading instruction, systematic approaches, opportunistic approaches, independent silent reading approaches, and intensive instruction approaches. The need for studies of this type is implied in this statement:

> Because of the complexity of the problem, the need is as urgent today as formerly for analytical studies and experiments which aim to determine the method or combination of methods, most effective in teaching various types of pupils to read and the conditions under which each secures most rapid progress (7, p. 995).

In summary, the study evolved from expressed needs of school districts and teachers. The leadership was assumed, as requested, by a service and leadership organization, the department of education of a California county. Current interests and activities of teachers in the field of reading, as well as trends reported in the literature, helped shape the design of the study. The concept of systematic cooperative curriculum research at the classroom level guided the committee in developing materials and procedures.

Details of the Study Design

Basic elements of the study include hypotheses, definitions of terms, limitations, sources of data, procedure and treatment of data, and a survey of related studies. A discussion of these elements follows.

Hypotheses

The study was designed to test the following hypotheses:

1. Three different approaches to the teaching of reading can be identified, analyzed, and described in the form of operational definitions which can be used by classroom teachers as a guide to implementation.

2. In-service education programs designed to assist teachers prepare for implementation of their chosen approach to teaching can be valuable to the teachers involved.

3. Individual teacher approaches to the teaching of reading are not significantly different from the theoretical approaches which they selected to implement (null hypothesis).

4. Teachers who implement a given theoretical approach tend to rate the various elements of the approach positively in terms of workability, practicality, and significance.

5. Classroom group pupil gains or losses as measured by tests of reading achievement, personal/social adjustment and attitude toward reading for the experimental period (implementation phase) are not significantly different from gains or losses for the control period (in-service phase) (null hypothesis).

6. There is no relationship between achievement test scores in reading and personal/social adjustment test scores (null hypothesis).

7. There is no relationship between achievement test scores in reading and attitude toward reading test scores (null hypothesis).

8. There is no relationship between personal/social adjustment scores and attitude toward reading test scores (null hypothesis).

Limitations

The following limitations are recognized and should be carefully considered when interpreting the data presented.

1. The written operational definitions of each of the three approaches are limited to concise statements which indicate only the essence of each approach. More specific details, procedures, and techniques were discussed during the in-service phase of the study. Lack of control of the variable of teacher interpretation of the more specific aspects of an approach is an obvious limitation.

2. Teacher participation in the study was limited to those teachers meeting certain qualification criteria. Voluntary participation by those who qualified is a further limitation.

3. The grade level and number of pupils were factors dependent upon the outcome of voluntary participation of teachers. Classroom groups of pupils were limited to the group ordinarily assigned to the teacher participant. Each approach was implemented

at each grade level, but the total number of pupils in the approaches were limited to the chance distribution of grades, as noted above.

4. Variables other than the teacher variable, the classroom group variable, and the approach to teaching variable were not controlled. Since the same group of pupils taught by the same teacher during two consecutive periods of the same school year constitutes the basis of comparison, the time variable may be considered a limitation to some degree. However, the assumption made by standardized test designers that achievement as measured by those tests follows a linear pattern has been accepted as valid. This would tend to overcome objections to the time variable since the expected amount of gain at the norm in terms of grade placement scores is one month per one month of instruction. Therefore, the normal or average expectancy in terms of gains could be compared even though the periods measured are consecutive rather than parallel. The test in reading does appear to present a limitation in measurement for certain groups who score high group averages during the first period and are thus left without much chance for gain on another form of the test for the experimental period.

5. Pupil data are limited to test scores derived from three tests or instruments administered and scored by teachers three times during the study. Intelligence test scores are the scores available to the teachers from district group or individual test sources.

Some primary grade groups were not measured for intelligence because of district policy.

6. Teacher data are limited to teacher response to the various instruments developed for the study.

Sources of Data

In developing the operational definitions, the professional literature was consulted. The most significant information, however, was derived from staff members (through discussion, interview, and assigned writing) at various stages of the development of the definitions. Basic reading texts for elementary grades and the manuals that accompany those texts were the main sources of data in developing the definition of the Basic Reading Approach. The staff members consulted were those who had had firsthand experience in working with the elements of each of the approaches in the schools of the county and elsewhere. Other staff members made suggestions regarding the theoretical structuring of the definitions.

Data representing teacher evaluation of in-service programs, elements of the approach, teacher approach to teaching reading, and teacher conformity to theoretical approach chosen were gathered from the fifty-nine teachers completing the study.

Pupil test data were derived from the 1,274 pupils who were in the classrooms of the participating teachers. These pupils and teachers represented twelve different school districts located in the county. In addition to the test data required by the design

of the study, teachers gathered and reported these pupil data: intelligence quotient, chronological age, and sex.

Procedure and Treatment of Data

Following the approval of the study and the formation of the Reading Study Project Committee, procedure followed the sequence outlined below.

Development of Operational Definitions

Each approach was analyzed in light of information from the professional literature, qualified staff members, and any other pertinent source. An over-all or general definition consisting of two or three written paragraphs was developed for each of the approaches. These were reviewed by qualified staff members, refined by the committee, and adopted.

A format for the operational definitions was adopted. This format consisted of two major column headings as follows: (1) Criteria and (2) Rationale. A sequential set of numbered entries placed in the "criteria" column were matched with corresponding numbered entries in the "rationale" column. Entries in the "criteria" column consisted of statements describing in terms of method, technique, or material the particular approach. The corresponding entries in the "rationale" column consisted of an analysis of the "criteria" entries in terms of philosophical consideration and/or psychological theory. The development of these definitions took place over a ten-month period. After

review and refinement, they were adopted. After adoption, they
were included as part of a document entitled, "Three Approaches
to the Teaching of Reading," produced by the department of education
of the county. Other contents of this document included an intro-
duction to the study and the statement of the problem of the study.
The intended use of this document was to acquaint school district
personnel and qualified teachers with the study and to serve as a
guide in assisting teachers to select an approach.

Selection and/or Development of Pupil Tests

It was determined that several measures of pupil behavior repre-
senting different factors relating to progress in learning to read
should be taken. Achievement in measurable elements in reading,
concept and adjustment of self as an individual and member of group,
and attitude toward reading were selected as the most significant
factors that could be measured by use of existing valid instruments.
It was found, however, that no suitable instrument for measuring
attitude toward reading was available.

Qualified members of the staff were consulted in the selection
of instruments to measure achievement and personal/social concept
and adjustment. The instruments selected were the California
Reading Test and the California Test of Personality. For first-
grade pupils' first test, the Lee-Clark Reading Readiness Test was
selected. These three instruments are all published by the California
Test Bureau of Los Angeles, California.

It was necessary for the committee to devise an instrument to measure attitude toward reading. An instrument containing 114 items was devised. A pilot study was conducted in which the instrument was administered to classroom groups at every grade level. Prior to administering the instrument, the teacher of each class group was asked to list the five pupils (if there were that many in such a category in the class) with favorable attitudes toward reading and the five pupils (if there were that many in such a category in the class) with unfavorable attitudes toward reading. In addition, each of these listed pupils were asked to indicate how they felt about reading. Where possible, the parent of the child was asked to rate the pupil's attitude toward reading. These ratings became the criteria for judging the validity of the attitude inventory. Without exception, pupils rated as having favorable attitudes toward reading made higher scores on the test, whereas those rated as having unfavorable attitudes toward reading made lower scores on the test. In addition, where the ratings were mixed, these pupils made scores between the favorable and unfavorable rated pupils' scores. Based upon this evidence, it was decided to use this instrument. Some items which seemed confusing were rewritten. This instrument has since been refined as a result of the data derived from the study. The number of items has been reduced to the twenty-five most discriminating items.

Proposal of Participation in the Study to Teachers

School districts were contacted by the department of education and invited to select teachers to participate in the study. The first step in this process consisted of the district appointing a liaison person. Each liaison person's responsibilities included acting as district director of the study, contact with the Reading Study Project Committee, formation of teacher selection committee in the district, orientation of teachers to the study, and general administration of the study in the district.

Each district liaison person was instructed to form a district teacher selection committee composed of the chief administrative officer of the district or his representative and curriculum or supervisory personnel. Teachers selected to be briefed on the study were required to meet these qualifications: (1) possession of the general elementary teaching credential (California), (2) having consistent average or above average administrative ratings for prior three years of teaching or past years of teaching if less than three years in teaching, (3) having average or above average rating on adaptability, energy, and originality, and (4) being a teacher known to carry out a well-balanced instructional program.

Teachers selected on the basis of the qualifications were invited to attend an orientation session concerning the study. Copies of the document, "Three Approaches to the Teaching of Reading," were distributed and discussed. Teachers were invited

to study the document and decide at a later date whether or not they wished to participate in the study. Teachers wishing to participate submitted a completed form indicating their desire to participate and which approach they wished to implement. After initial selection, decisions relating to participation and approaches were entirely voluntary on the parts of teachers.

In-Service Phase

Teachers volunteering for the study were grouped according to the approach selected. For each group, an in-service leadership team was organized. These teams consisted of one member of the Reading Study Project Committee, one department staff member strongly identified with and qualified in the particular approach, and two or three other department staff members. The teams were assigned one and one-half days per month to plan and carry out a two-hour in-service education session each month for five consecutive months (September through January). Teachers were instructed to implement their usual individual approach to reading during this period (in-service phase).

Pupils were administered the three tests indicated at the beginning of this period and at the end of this period. Teachers were administered an instrument, "Teacher Inventory of Approaches to the Teaching of Reading." This instrument was designed to provide a standardized means of describing individual teacher approaches by requiring teachers to rank on a five-point scale the accuracy of

thirty-three items in terms of their individual approach to teach-
ing reading. The instrument was devised to present statements
regarding eleven categories of reading instruction. Eleven state-
ments dealing with these categories in each of the three theoretical
approaches were included. The instrument yielded an accuracy com-
posite score for each of the three approaches, as well as any addi-
tional remarks the teacher felt a need for including to further
clarify his approach.

In addition to the in-service sessions, teachers were en-
couraged to consult the district liaison person or department of
education staff members if they had questions regarding their se-
lected approach. The final in-service meeting was followed by a
dinner at which time an assistant director of research and guid-
ance from another county school office spoke to the participants.
His topic was, "The Role of the Teacher in Research."

Implementation Phase

Teachers were instructed to conform as closely as possible to
the operational definition of their chosen approach throughout this
period. At least two qualified observers visited each classroom
in the study. All teachers were found to be implementing the ap-
proach selected as judged by the observers. No attempt was made
to differentiate the degree of excellence with which the teachers
were implementing the approach since all were conforming to the
essential criteria of the approach selected.

Pupils were administered the three tests at the end of this period. Teachers were administered, for the second time, the instrument, "Teacher Inventory of Approaches to the Teaching of Reading," at the end of this period. In addition, teachers were asked to respond to an instrument, "Reading Study Project Evaluation Questionnaire," the purpose of which was to ascertain the teachers' judgments concerning different aspects of the study. A third instrument was used to obtain data regarding the appropriateness, workability, and significance of the various significant elements of the approach which the teacher selected to implement. This instrument was titled, "Reading Approach Evaluation Questionnaire." Five-point scales were used as a basis for rating the various items contained in each of the three instruments listed above. The scales represented degrees of accuracy of description of approach for the teacher inventory instrument; degrees of quality for project evaluation questionnaire; degrees of quality with regard to workability, appropriateness, and significance for the reading approach evaluation instrument.

Treatment of Data

The specific statistical procedures which were followed in the treatment of the data derived from the various instruments administered to teachers and pupils are indicated below.

Determination of teacher approaches.—Data derived from the instrument, "Teacher Inventory of Approaches to the Teaching of Reading," consisted of the following: (1) Three description of teaching accuracy scores. These scores were derived by taking the sum of ratings given by each teacher to each set of eleven items representing each of the three approaches. A five-point scale starting with one: "entirely inaccurate" to five: "entirely accurate" was used. It should be noted that the three sets of eleven items were each placed at random in the instrument and in no way identified as a set. (2) Three average accuracy scores derived by dividing the sums by eleven and rounding to the nearest whole number. (3) A consistency index number derived by adding the highest average accuracy score to the opposite values of the two lower average accuracy scores. Opposite values on the five-point scale are as follows: one equals five; two equals four; three equals three; four equals two; five equals one. (4) A consistency index score composed of the index number described above plus a prefix consisting of the three average accuracy scores (see (2) above) and a suffix consisting of one capital letter which is the symbol for the approach of the three approaches receiving the highest accuracy score and a capital letter enclosed in parentheses which is the symbol for the approach of the three approaches receiving the second highest accuracy score. When both of the lower two accuracy scores are equal, the suffix consists of the capital letter symbolizing the highest accuracy score only.

The following examples are presented to clarify the use of
accuracy scores, average accuracy scores, consistency index numbers,
and consistency index scores. The five-point scale of accuracy
has already been discussed. In order to clarify the consistency index
number, the following values have been determined: index numbers
14 and 15 represent a degree of consistency stated, "Approach is
consistently implemented"; index numbers 12 and 13, "Approach tends
to be consistently implemented"; index numbers 10 and 11, "Approach
is identifiable but eclectic in implementation"; index numbers 8
and 9, "Approach tends to be inconsistently implemented"; index
numbers 3 through 7, "Approach is inconsistently implemented."
The following are accuracy scores made by three different teachers,
one from each approach group, and during both control and experi-
mental periods. In addition, the consistency index scores are shown
for each of the examples. The consistency index scores are then
analyzed and interpreted.

A teacher from the Basic Approach Group made the following
accuracy scores during the control period: basic approach score,
48; individualized approach score, 37; language experience approach
score, 23. Converting the accuracy scores to average accuracy
scores (accuracy score divided by 11) and then computing the con-
sistency index number as described above, the consistency index
score is as follows: 432 11 B(I). This index score is interpreted
as follows: The teacher implemented an approach during the control
period characterized as an eclectic (11) basic (B) approach drawing

more heavily on elements of the individualized [(I)] approach
than upon the language experience (432) approach. This same
teacher made the following accuracy scores during the experimental
period (capital letters symbolizing the approach are B for basic,
I for individualized, LE for language experience): B=43; I=41;
LE=25. The consistency index score is thus: 442 10 B(I). This
index score is interpreted as follows: The teacher implemented an
approach during the experimental period characterized as an
eclectic (10) basic (B) approach drawing more heavily on elements
of the individualized approach [(I)] than the language experience
(442) approach. Comparing the consistency index scores for the
two periods (control and experimental), it can be noted that no
significant change in approach was made. In fact, the experimental
approach tended to be more eclectic and more oriented to the in-
dividualized approach than was the case during the control period.
In summary, with regard to this teacher, the individual teacher
approach implemented during the in-service (control) phase was not
different from the approach implemented during the implementation
period (experimental). Since this teacher chose the Basic Approach
as her experimental approach, and since her individual approach
was also characterized as the Basic Approach, no comparison of
approaches is possible. However, a comparison of teaching the
approach as individually conceived with teaching the approach as
theoretically conceived is possible. For purposes of assessing
consequencies by groups of teachers and classes, this teacher was

placed in a group of teachers following a similar consistency
pattern for both control and experimental periods.

A second example comes from a teacher in the Individualized
Approach Group, so assigned because she chose the Individualized
Approach as the one she wished to implement during the experimental
period. Her scores for the control period were as follows:
B=39; I=34; LE=24. Experimental period accuracy scores were:
B=29; I=54; LE=29. Consistency index scores would thus be:
Control, 432 11 B(I); Experimental, 533 11 I. The control period
index score is identical to the control period score for the teacher
in the first example. However, the experimental index score in-
dicates that the teacher has shifted from an eclectic Basic Ap-
proach to an eclectic Individualized Approach. The consequences of
implementing the theoretical approach can thus be compared with the
teacher's own approach during the control period.

The following example completes the series of examples of
teacher scores from each of the three approach groups. This teacher
was a member of the Language Experience Approach Group. Control
period accuracy scores were as follows: B=26; I=54; LE=49. Ex-
perimental period accuracy scores were: B=27; I=53; LE=54. The
respective consistency index scores were thus: 542 11 I(LE) and
552 11 LE(I). The analysis of these scores indicates that this
teacher shifted from an eclectic Individualized Approach drawing
heavily on elements of the Language Experience Approach to an

eclectic Language Experience Approach drawing heavily on the Individualized Approach during the experimental period. A contrast of approaches is possible in this case.

The consistency index score thus makes it possible to describe accurately the contrasts in approaches employed by a given teacher during each of the two periods. Groups of teachers can be described also in terms of consistency of implementation.

Another test of differences occurring in teaching approaches was employed. Using the consistency index scores as a guide, teachers in each of the approach groups were further regrouped according to approaches used during both periods. The accuracy score achieved by each teacher in these sub-groups for each of the three approaches was subtracted from the appropriate accuracy score for the experimental period. This resulted in tables of three sets of differences for each group of teachers. The sums of the three sets of differences were calculated. The means (Mn) and standard deviations (σ) of these tables of differences were also computed. The standard error of the mean (of the differences) (σ_M) was calculated as follows:

$$\sigma_M = \frac{\sigma}{\sqrt{N-1}}$$

The significance ratio (S. R.) was then calculated as follows:

$$S.\ R. = \frac{Mn}{\sigma_M}$$

The calculated significance ratio was checked against a table (11, p. 240) of minimum values of significance ratio required for significance at various levels. A 1.0 per cent level was required before accepting any difference as significant and not due to chance.

Evaluation of approaches and project.--These data were grouped by approach groups. Means and standard deviations were computed. Five-point scales were employed in each of these instruments.

Pupil achievement test data.--These data were reported by the teachers in terms of grade placement scores. Test one (T_1) was given at the beginning of the study (in-service phase), test two (T_2) was given at the mid-point of the study (end of in-service phase and beginning of implementation phase), and test three (T_3) was given at the end of the study (end of implementation phase). The length of the time between tests was approximately four teaching months. Each score of each pupil on each of the several tests was used directly in all calculations. All pupil, classroom group, approach sub-group, approach group, and total group data were treated as follows:

1. Gains or losses were computed as follows:

    a. Control Period (C): $T_2 - T_1 = C$.

    b. Experimental Period (E): $T_3 - T_2 = E$.

2. Differences (D) between periods were computed as follows:

$E - C = D$.

3. The mean and standard deviation were computed for D.

4. The standard error of the mean of D was computed as follows:

$$\sigma_M = \frac{\sigma}{\sqrt{N-1}}$$

5. The significance ratio was then calculated as follows:

$$S.\ R. = \frac{Mn}{\sigma_M}$$

The calculated significance ratio was checked against a table (11, p. 240) of minimum values of significance ratio required for significance at various levels. A 1.0 per cent level was required before accepting any difference as significant and not due to chance.

Pupil attitude inventory data.—These data were reported in terms of raw scores (range 0 to 114). They were treated in exactly the same way as outlined above.

Social/personal adjustment data.—These data were reported in terms of standard scores and were treated in exactly the same manner as outlined for achievement test data.

Other data.--The mean intelligence quotient and chronological
age were computed for all classroom groups, approach sub-groups,
approach groups, and the total group.

Correlations of the various possible pairs of pupil scores
for each testing period were computed by an electronic computer
at the Naval Electronics Laboratory, San Diego, California, for
all classroom groups, all approach groups, and all grade levels.

Use of individuals of a group as their own control.--Some
discussion of this type of experimental design has already been
brought out under point four of the section on limitations on
page 14 of this document. A further statement by McNemar
(12, pp. 340-341) supplements the justification for such a design:

> As is well known, one of the most efficient experimental
> designs is the use of individuals of a group as their own
> control. The performance of a group of individuals is
> determined for two different experimental conditions; and
> the resulting change, increase or decrease, in behavior is
> interpreted as being due to the differences in conditions,
> provided such factors as practice effects, fatigue, and
> memory have been taken into account.

The use of differences in terms of gains or losses during both
control and experimental periods and between periods further pro-
tects the validity of the comparisons made. Practice effects and
fatigue could be ruled out in this case. Memory could not be
considered a significant factor.

Definition of Terms

Approach to reading.--Identified by its major emphases in
terms of the methods, techniques, and materials employed by the
teacher as well as the reasons given for using such methods,
techniques, and materials. (See definitions for criteria and
rationale below.)

Assistant Superintendents Council.--An organization in a
county in California made up of the persons responsible for in-
structional leadership in their respective school districts.

Basic Reading Approach.--(Defined in detail in this document.)

Consultants.--Persons qualified to assist with elements of
the study both on the county staff and from other institutions or
organizations.

Criteria for an approach.--The descriptions of teaching
methods, techniques, and materials used by the teacher.

District liaison person.--That person designated by each
school district in the study to coordinate the study in his
district.

Elementary pupils.--Those pupils enrolled in the county
school districts in grades one through six.

Implementation phase of the study.--That period of time be-
tween January and May when the participating teachers employed the
approach which they had chosen.

Individualized Reading Approach.--(Defined in detail in this
document.)

In-service phase of the study.--That period of time between
September and January when the participating teachers met monthly
with in-service teams for instruction in the approach to the teach-
ing of reading which they had selected.

In-service teams.--Groups of county department of education
staff members assigned to the various approaches as in-service
education leaders.

Language Experience Reading Approach.--(Defined in detail
in this document.)

Materials.--Those physical objects utilized in the classroom
as stimuli for reading.

Participating districts.--Those school districts in the county
which were invited to take part in the study and which were repre-
sented by teachers electing to become participants in the study.

Pupil achievement.--The achievement of pupils in reading as
measured by the California Reading Test.

Pupil attitude toward reading.--The amount of favorable atti-
tude toward reading as indicated by scores attained on An Inventory
of Reading Attitude. (See Appendix A.)

Pupil self-concept and social/personal adjustment.--The measure
obtained from the California Test of Personality.

Rationale for an approach.--The stated and analytical reasons
and/or justifications for employing methods, techniques, and materials
in a given approach.

Reading.--Involves the recognition of printed or written symbols
which serve as stimuli for the recall of meanings built up through
past experience, and the construction of new meanings through
manipulations of concepts already possessed by the reader. The
resulting meanings are organized into thought processes according
to the clearly defined purposes of the reader. Such an organization
leads to new behavior which takes its place, either in personal or
in social development.

Staff, county department of education.--The professional staff
under the direction of an appointed superintendent of schools who
administers the policies of an elected board of education. There
are three divisions in the department. They are special services
division, business services division, and curricular services divi-
sion. There are four sections in the curricular services division.
They are the audio-visual section, curriculum coordination

section, pupil personnel section, and library section. The department serves fifty different school districts in the county. There are thirty staff members in the curricular services division.

Related Studies

Studies in the field of reading up to about 1948 numbered 2,700 (7). An estimated 1,500 more studies have been published up to the present time. This study relates in some ways to several types of investigations reported during the period from 1880 to 1960. This study seems to relate most closely with studies classi- fied as dealing with the teaching of reading, and more specifically with those studies dealing directly with method. This type of study was commented upon by Gray (7, p. 995). He concludes, in view of the many such research studies analyzed, that the comparative superiority of one method is not the real issue, but that "the real issue is not which of two procedures is better but rather what does each procedure contribute the more effectively to pupil development."

This study tends to lean in the direction of the "real issue" pointed out above in that it does not primarily pit method against method. It attempts to compare a well-defined and analyzed ap- proach presented to teachers through an adequate in-service education program with a less well-defined, individual teacher approach to the teaching of reading.

Reviews of some of the many studies dealing with some element or aspect similar to this study are presented below.

A study by Purcell (13) summarizes responses from 210 counties in Ohio, Pennsylvania, and West Virginia. The responses related to methods used in teaching reading in grades one through six, inclusive. The county study sought teacher response to questions concerning method as one means of evaluation of the three approaches.

Deverell (3) conducted a similar study in which 126 teachers indicated that they had much confidence in the basic reading program in use. Gray indicates with reference to Deverell's study, "More studies are desirable which reflect the judgments particularly of successful teachers of reading" (6, p. 208). The county study, through the teacher selection procedure, insured a means of getting the careful judgments of successful teachers of reading with regard to in-service activities, elements of the various approaches, and other significant aspects of the study.

Kingsley (9) carried out a study in the area of individualized reading. The nature of the reading activities provided for sixth-grade pupils in Bellingham, Washington, was described. Objective and non-objective data were presented to show results at the end of the school year. One major part of the county study describes and analyzes an individualized approach to the teaching of reading.

Ramsey (14), though dealing with the teaching of high school English in his study, used an approach similar in a limited way to the Language Experience Approach described in this document. In addition, his procedure is related in that among the steps taken was a preliminary training program for participating teachers. The

in-service phase of the county study is related to this procedure. Other studies over the years have, of course, made use of similar in-service procedures to ensure proper implementation.

Grau (4) indicates the need to think in terms of the total personality of the child as a reader. His study consists of case studies of non-readers. The county study evaluated each of the approaches in terms of personal/social adjustment scores and thus attempted to get at this aspect of the child as a reader.

Another study relating to the in-service phase of this study is one reported by Sister Josephina (8). Her evidence indicates the value of a cooperatively planned supervisory program designed to fulfill specific needs in the improvement of reading in grades four, five, and six. Gray points out in reviewing this study that when much effort is made to improve reading progress usually results. He adds, "This does not deny the fact that some methods are superior to others. It merely points out that a purposeful and determined attack on a problem is a vital step in securing its solution" (5, p. 417).

Knight (10) summarized previous studies relating personality and reading. One topic used in the report is "Relating Personality with Reading Development." The indication is that it is important to consider the personality or self-concept factor in evaluating the results of reading instruction. Russell (15) deals with this same concept.

Sutton (16) reports an investigation dealing with an approach similar to the Language Experience Approach which is described and analyzed in this document. She sought to determine the influence of pupil participation in the preparation of reading materials on their progress in reading. Materials such as stories, poems, and reports written by pupils were prepared and read later by other pupils in this grade five experimental group.

Artley (1) summarizes research dealing with the interrelations among the language arts. The Language Experience Approach as defined in the county study is built on this premise.

These are sample illustrations of the kinds of related studies reported in the annual summaries of reading investigations appearing in the Journal of Educational Research. Gray's article in the Encyclopedia of Educational Research (7, pp. 987-1003) served as a basic guide to reported studies and results in earlier investigations. The summaries were carefully checked for an eight-year period preceding the launching of the investigation reported in this document. This study combines the features of several studies and deals with a greater range of factors than any study reported to date.

No previous study has developed operational definitions of the three approaches described and analyzed in this study. Most earlier studies have concentrated on one, or possibly two, methods whereas this study recognizes three unique and valid approaches to the teaching of reading. Earlier studies have tended to measure the effectiveness of an approach or method in terms of pupil achievement test

scores. This study attempts to measure other pupil behavior as well. Thorough and long-range teacher in-service education in all three approaches conducted by qualified professional teams is a unique feature of this study. This is the first study in which the Language Experience Approach, as herein defined, has been utilized. The other two approaches have been more specifically defined than formerly. A pupil attitude toward reading instrument was developed for use in this study and thus provides a new tool for teachers. An inventory of teaching approach is another original instrument developed for and used in the study. When all of these features are considered, this study qualifies as original and pertinent to a very important aspect of instruction and teacher education.

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CHAPTER II

BASIC READING APPROACH

Sources of Data

Fourteen teachers who selected the Basic Approach completed
the study. Each teacher was given a code number for purposes of
identity. Each district represented was also given a code number.
Table I indicates information about each teacher and each class.
It should be noted that these fourteen teachers represent six of
the twelve school districts participating in the total project.
One teacher (code number 61) did not send in complete data from
pupil tests. This teacher did respond to all instruments ad-
ministered to teachers. As was explained in Chapter I, teachers
in each approach group are regrouped into sub-groups according to
common consistency index scores. In the case of this approach
group, twelve teachers were placed in sub-group I and one teacher
was placed in sub-group II. The teacher who failed to send in
complete student data was not assigned to any sub-group. For pur-
poses of reporting consequences of implementing the approach in terms
of pupil data, therefore, only thirteen teachers and classrooms are
included. Teacher 39 is the teacher placed in sub-group II.

It should be noted from Table I that the range of total years
of teaching experience is from one to twenty-four years. A somewhat

TABLE I

BASIC READING APPROACH: DESCRIPTION OF TEACHERS AND CLASSES

Sub-group	Teacher Code Number	District Code Number	Total Years of Teaching	Years in Present Grade	Grade Taught	Number of Pupils	Mean Intelligence Quotient	Mean Chronological Age (Months)	Contrast of Approaches*
I	9	2	12	10	5	14	116	122	bB
I	10	2	12	2	4	31	111	110	X
I	16	3	24	10	3	26	105	99	Bb
I	17	3	2	2	2	31	106	88	X
I	18	3	2	2	4	32	103	112	bB
I	37	5	4	4	3	21	103	89	X
I	38	6	3	1	1	25	...	76	bB
I	55	11	21	1	Pre-1	11	97	86	X
I	57	12	4	3	2	17	103	92	Bb
I	58	12	1	1	3	23	104	100	X
I	59	12	15	4	5	31	104	126	Bb
I	60	12	1	1	4	20	107	115	bB
..	61	12	5	3	6	..	...	...	..
II	39	6	13	2	6	25	112	135	IB

*bB=more basic in experimental period; Bb=more basic in control period; X=no contrast; IB=control: individualized, and experimental: basic, same consistency.

smaller range is reported for total years experience in the present grade taught.

All grade levels are represented (grades one through six). The number of pupils represents the pupils in each class for which a complete set of test scores for all three testing periods was reported. Individual pupils were eliminated because of lack of complete data on them due to late entrance to school, early departure from school, or absence from school on days when tests were administered. After screening, the total number of pupils in the Basic Approach classes was 307. The average number of pupils for groups reported in Table I is 23.62 for the total group and 23.5 for sub-group I.

The mean intelligence quotient for the total group of pupils is 106 and for sub-group I, 106. The mean chronological age for the total group of pupils is 105 months and for sub-group I, 102 months.

Description and Analysis of the Basic Approach

The following description and analysis stated in terms of criteria and rationale statements represent the solution to one of the major problems of this study with respect to the Basic Approach to the teaching of reading. This description and analysis served as the official definition of the Basic Approach for purposes of introduction to teachers, as a basis for in-service education, as a guide to implementation of the approach during the

experimental period, and as a basis for development of various
evaluation and rating instruments. The first section is devoted
to a general definition of the Basic Approach. The second section
is a more specific operational definition consisting of descriptive
material (criteria) and parallel analytical statements (rationale).
Each statement was selected in terms of fundamental significance
in describing the essence of the Basic Approach.

General Definition

The Basic Reading Approach, in its most definitive sense, is
concerned with providing children with experiences which will
help them learn how to read printed symbols. This may be con-
trasted with programs providing broad experiences in reading
different types of printed materials and other stimuli for the
purpose of greater generalized learning. Personal growth through
reading and recreational appreciation through reading are not
primary objectives of this program. (Remedial or corrective
instruction is not considered a part of the basic reading program.)

Skill development is central, the skills being those of
analyzing, locating, interpreting, and comprehending the written
or printed word from the page. The development of these reading
skills which are common to all reading situations involving
printed or written words is the primary objective of such a
program. The method of fulfilling this objective involves direct,
systematic instruction, usually on a daily basis, through the use

of a basic "reader" text or series of basic "reader" texts. These readers present a sequential organization for development of reading skills. A controlled vocabulary is utilized in presenting and providing for this sequential organization. To provide for the differences in abilities of pupils, three or more flexible groups in the class are utilized. Pupils may advance at different speeds through this sequential program, but all must follow the predetermined sequence.

Operational Definition

Criterion one.--The teacher attempts to assess the reading ability of each student for the purpose of establishing reading groups. She uses results of standardized reading tests, observation of the student, class size and make-up, intelligence tests and information from other teachers, and books previously read.

Rationale one.--Information concerning the child's reading ability and other pertinent information needs to be analyzed if he is to be placed in the best possible reading instruction situation. Children with similar reading abilities can be taught more effectively in groups than groups of children with wide differences in reading ability.

Criterion two.--On the basis of available student information, the teacher assigns each child to a reading group. Groups are

formed on the basis of reading ability with some flexibility for placing children in groups on other bases. Children may be moved from one group to another when they have need for a new group experience. In the typical class of twenty-five to thirty children, three groups are considered adequate.

Rationale two.--Children of similar abilities placed in small groups can be more easily instructed in reading skills. Materials of instruction can be prepared in terms of group needs on the basis of group ability. Children progress at different rates, therefore necessitating flexibility in the assignment of a child to a different group when development of his ability indicates change.

Criterion three.--At reading instruction time the teacher works with each group separately (usually in a reading circle situation). The teacher follows the suggestions for sequence and content set forth in the manual which accompanies the basic and supplementary series. While the teacher works with one group, the other children work at seatwork assignments or in self-selection activities such as art and word games.

Rationale three--Since the needs of the group differ and since there are more opportunities for individual help in a small group, the teacher works most effectively through her direct instruction activities geared to the ability of each group. In

the small groups it is possible for each child to read orally, take part in discussion, tell a story, and participate in skill-building activities. Children learn to work independently as they have opportunity for independent work (seatwork) while the teacher is working directly with one of the groups in a reading circle. (The teachers' manuals offer directions for carrying out a systematic reading program which accommodates several levels of ability.) Seatwork assignments which are correlated to the basic reader stories are included in the manual. Assignments for creative activities are also included.

Criterion four.--Generally, the plan of instruction for individual groups entails a definite procedure which includes these steps (procedure varies in different series and for different grade levels):

    a. Setting purpose (motivation and setting background)

    b. Introduction of new vocabulary and teaching of necessary skills

    c. Silent reading

    d. Oral reading

    e. Discussion of story

    f. Independent activities (workbooks, seatwork, teacher-guided skill development, silent reading).

Rationale four.--Certain logical procedures have proven
successful in the teaching of reading printed symbols. Children
learn best when they are motivated. To enhance accurate reading
and provide for success, skills related to the lesson and new words
taken from the lesson may become part of the daily reading activity.
Silent reading provides for the fortification of skills.

Oral reading provides the child with an opportunity to com-
municate with others. The teacher is able to evaluate the child's
reading progress during oral reading. Follow-up activities pro-
vide for additional opportunities to use skills and vocabulary
previously introduced as well as to pursue interests related to
the content of stories read. Follow-up activities can be used
to evaluate student progress.

Criterion five.--The teacher attempts to establish the pur-
poses of reading in a given lesson. She generally follows the
suggestions of the manual. Interests of the group on a par-
ticular topic may be used when related to the lesson to be read.

Rationale five.--Children's interest in, and understanding of,
the purpose of a task improves the learning situation. The sug-
gestions offered in the teacher's manual take into account what is
known about children's interests and ways in which they may be
stimulated.

Criterion six.--New words are introduced to the children
before they encounter them in a story context. These new words
are part of a carefully controlled vocabulary around which the
entire series is built. Word attack skills which are needed in
solving these new words are taught. Other skills to be emphasized
are suggested in the manual. (In primary grades much emphasis is
given to developing a basic sight vocabulary.) Instruction is
aimed at developing meanings for new words being introduced for a
given lesson. New words follow a sequence which is based upon
criteria of relative difficulty, interest as to age level, and
other considerations.

Rationale six.--Children have more success with printed
symbols when they are well prepared to cope with specific prob-
lems which they will encounter when reading the new story in the
basic text. When the vocabulary is controlled in this manner,
only a few new words are introduced in each lesson. In addition,
words which have been previously introduced are repeated in suc-
ceeding stories. This technique enables the child to handle a
small number of new words and to maintain a growing number of
previously learned words from a basic vocabulary list.

Criterion seven.--After discussion of new words and/or
points developed in the story, children are generally required to
read the story silently, keeping in mind the purposes that the

teacher established with the group. (This procedure varies with grade level; for instance, silent reading content ranges from short sentences to complete stories.)

Rationale seven.--Children read the story silently to facilitate their understanding of the content of the story. Questions are used to focus on the main points of the story and to guide reading for certain purposes.

Criterion eight.--Children in each group are given many opportunities to read orally. Oral reading is generally done in the group itself by individual children while the others serve as a small audience. Children in the group discuss and react to elements of the story and the presentation of the individual reader. The teacher may provide individual instruction in specific skills as she reacts to the oral reading.

Rationale eight.--When children read orally, the teacher gains an opportunity to evaluate such reading abilities as pronunciation, phrasing, word attack skills, expression, speed, and fluency. The teacher is enabled to appraise listening skills of group members. Oral group reading also serves as a means of sharing.

Criterion nine.--Prior to and following directed reading lessons, students are expected to engage in a variety of planned independent activities. Many of these activities are related to

the lesson. This is true of workbook exercises which accompany
the basic text, teacher-prepared worksheets, and related recre-
ational reading. Other activities not related to the lesson are
provided for by the teacher such as reading in various content
fields, recreational reading, expressive activities (group dramati-
zation, creative writing), and practice activities.

Rationale nine.—It is necessary that children not under the
direct supervision of the teacher are provided with a variety of
well-planned independent activities.

Review of Uses

The description and analysis reported above was used through-
out the study. In-service teams geared their monthly activities
to the various criteria and rationale. Teachers were instructed
to use the description and analysis as a guide in implementing the
approach during the experimental period.

The operational definitions of all three approaches served as
a guide for developing the teaching approach inventory instrument
as well as the approach evaluation instrument. The data derived
from these instruments will be discussed later. Evaluation by
teachers is reported in following sections.

Project Evaluation

A "Reading Study Project Evaluation Questionnaire" was ad-
ministered to all teachers in the study at the culmination of the

project. Appendix B consists of the six parts of the question-
naire and lists the mean of the ratings for each question by
approach groups of teachers. The rating scale and legend is also
included in the Appendix. The Appendix should be consulted as
needed to clarify the discussion which follows.

Analysis of Project Evaluation

Selection and introduction to study.—The highest rated item
had to do with freedom to select a theoretical approach for experi-
mentation purposes. The voluntary nature of teacher participation
was stressed from the first contact with school districts through-
out the entire project. This particular group of teachers, though
rating this item highest, failed to rate it as high as the other
two approach groups did. A related item dealing with initial par-
ticipation in the project indicates that this group did not feel
more than average satisfaction in exercising freedom in this respect.
Upon investigation, it was found that some pressure was exerted by
supervisory personnel in one of the districts supplying several
teachers. This explained, to some extent, the lower rating given
the above item by this approach group.

An important item which indicates an evaluation, to some de-
gree, of the description and analysis of the Basic Approach re-
ceived a mean rating of 3.86 (good, decidedly above average). This
item asks the teachers to rate the written material furnished to
help in deciding on participation.

An over-all composite mean of 3.54 for this section indicates an above average rating for teacher selection and introduction to the study.

In-service meetings.--All eight of the items in this section received above average ratings. The highest mean rating (4.29) was given the item dealing with teachers' feeling of freedom to participate actively in discussions. Items dealing with number of meetings and provision for acquainting teachers with materials received the lowest comparative ratings (3.57).

Another evaluation of the criteria and rationale statements is indicated, to some degree, by the above average rating (3.71) given to item 6 in this section and to item 8 which received a rating of 3.79. (See Appendix B.)

Implementation of the approach.--A mean rating of above average (3.66) was given this phase of the project. Highest rated (4.00 and above) items included the availability of materials to carry out the chosen approach, parents' attitudes, interest and support of the district, and children's feelings about being in a study. Among the materials rated high, it can be assumed, was the description and analysis of the approach.

Two items (1 and 9) give an indication of growth in insight into the theoretical approach after in-service and after actual experimentation. After in-service insight was rated 3.86 and after implementation, 3.93. These teachers had above average

insight when they began the experiment and maintained this insight through the experimental period. Since these teachers employed a basic approach during both periods, these ratings and the average rating (3.43) given teacher feeling of accomplishment at the end of the study are understandable.

An above average rating (3.64) dealing with teacher ability to carry out the spirit of the criteria and rationale of the Basic Approach is another positive evaluation of the description and operational definition.

Communication and mechanics.--This aspect of the project received an above average rating. Another evaluation of the definition is indicated by the 3.71 rating given item 2 in this section. Only average ratings were given mechanics of administering test and tabulating results as well as freedom to express ideas and ask questions of the liaison person. Highest ratings (4.07 and 4.14) were given to the freedom to express ideas and questions to the Reading Study Project Committee and the adequacy of the liaison person in providing information and materials.

Testing.--This section received only an average rating (3.19). The adequacy of the student test data record card was the exception. It received a 4.00 rating.

Teacher instruments.--This aspect was rated average in all respects.

Summary

The teachers in the Basic Approach rated four of the five aspects of the study above average.

Two aspects were rated average. These two were of less importance than the others. There were thirty-eight separate items calling for a response. These teachers rated twenty-two of the items above average (3.51-4.50) and sixteen, average (2.51-3.50). No items received excellent, fair, or poor ratings.

Evaluation of Basic Approach

A second part of the project evaluation consisted of an instrument requiring teachers to rate (on a five-point scale) twelve elements of the Basic Approach in terms of how practical, workable, and significant they were. Appendix C has been designed to indicate the exact statement to which the teachers responded and the mean rating given each item. The rating scale and legend is also included in Appendix C.

Eleven of the twelve elements rated were placed in the above average category. The only item falling in a lower category was the element dealing with a plan for placing children in groups other than ability groups for reading purposes. This item was rated only average (2.92).

Six of the items received ratings of 4.00 or above, which placed them as the highest rated elements of the Basic Approach. Four of these items dealt with established steps in presenting the reading lesson: the element of planned steps, the step of

introducing vocabulary and skills, the step of follow-up dis-
cussion and the step of independent activities. The other two
items of those highest rated six items strongly relate to the
steps. One was the concept of sequential skill development; the
other, the use of the teacher's manual as the primary guide for
reading instruction.

Based on these responses, it appears that these teachers feel
that the elements of the Basic Approach are practical, workable,
and significant to a decidedly above average degree. It would
appear that the operational definition and the in-service ac-
tivities were both successfully utilized in implementation by
these teachers.

Teacher Approaches

The instrument used to determine teacher approaches during
both the control period (in-service phase) and the experimental
period (implementation phase) has been discussed at some length
in Chapter I. Appendix D consists of a complete copy of this
instrument.

On the basis of the data derived from the two administrations
of this instrument, it was possible to achieve a quantitative and
descriptive score for each period for purposes of comparison and
forming sub-groups of teachers following similar patterns.

Table II indicates the consistency index scores of all teach-
ers in sub-group I and the single teacher in sub-group II. Sub-
group I consists of teachers who implemented an approach best

TABLE II

ANALYSIS OF APPROACHES EMPLOYED BY TEACHERS
IN BASIC GROUP

Sub-Group	Teacher Number	Consistency Index Score: Control Period	Consistency Index Score: Experimental Period
I	37	511 15 B	511 15 B
I	38	422 12 B	521 14 B
I	58	522 13 B	522 13 B
I	18	432 11 B	532 12 B(I)
I	55	532 12 B(I)	532 12 B(I)
I	10	533 11 B	432 11 B(I)
I	17	432 11 B(I)	432 11 B(I)
I	57	532 12 B(LE)	432 11 B(I)
I	9	443 9 B(LE)	433 10 B
I	60	554 8 B(LE)	543 10 B(I)
I	16	432 11 B(I)	442 10 B(I)
I	59	433 10 B	443 9 B(I)
II	39	432 11 I(LE)	432 11 B(I)

characterized as a basic approach during both control and experimental periods. Sub-group II consists of one teacher whose control period approach can be described as an individualized approach and whose experimental period approach can be described as the

Basic Approach. (Please note that the experimental period theoretical approach is capitalized. Approaches used during the control period are not. This differentiation is used throughout this document.)

It should be noted that the order of Table II teacher entries has been determined on the basis of degree of consistency of implementing the theoretical approach during the experimental period (highest degree first). The values for the various consistency index numbers ranging from 3 through 15 have already been reported in Chapter I (see page 24). Applying these values, it may be stated that the first five teachers in Table II implemented their theoretical approach in a consistent manner; the next six teachers tended to be eclectic in the implementation of the theoretical approach; one teacher (code number 59) tended toward an inconsistent implementation.

The teacher in sub-group II implemented an eclectic individualized approach during the control period and the Basic Approach (eclectic) during the experimental period.

The shifts within the Basic Approach in terms of consistency of implementation for sub-group I teachers are indicated in the last column of Table I.

Taken as a group, during the control period, these teachers were as consistent in implementation of the Basic Approach as they were during the experimental period. Instead, however, of six teachers indicating an eclectic Basic Approach (as was the

case during the experimental period) there were only five. Simi-
larly, there were two teachers indicating a tendency toward
inconsistency as opposed to one teacher in this category in the
experimental period. The pupil data indicating consequences must
be viewed, therefore, in terms of significance of difference be-
tween the theoretical Basic Approach (experimental period) as
opposed to the individual teacher approaches characterized as a
basic approach (control period).

In the case of teacher 39 of sub-group II, a comparison of
an individual teacher's approach characterized as an individualized
approach can be contrasted with the theoretical Basic Approach.

Another method of analyzing changes in approaches between
periods considers groups of teachers rather than individual
teachers. Table III summarizes this analysis in terms of dif-
ferences in accuracy scores of individual teachers in each group
or sub-group (experimental period accuracy scores minus control
period accuracy scores equal differences, or $E - C = D$), means
of D (MnD), significance ratios (S. R.), and level of significance
of the mean of the differences. This, in essence, is a test of
differences between means. The three approaches are symbolized
as follows: B = Basic; I = Individualized; LE = Language Experi-
ence.

Since a 1.0 per cent level of significance has been set,
it must be stated that teacher approaches employed by sub-group I
and the total Basic Approach group of teachers were not significantly

TABLE III

TEACHER APPROACH DIFFERENCES: EXPERIMENTAL PERIOD
VERSUS CONTROL PERIOD
BASIC GROUP

Group or Sub-Group	MnD			Significance Ratio			Level of Significance		
	B	I	LE	B	I	LE	B	I	LE
I	.33	.92	- 3.50	.43	.91	-2.41	no	no	5%
II*	18.00	-12.00	-10.00	...	...	...	yes	yes	yes
Basic	1.69	- .08	- 4.00	1.10	-.56	-2.80	no	no	2%

*One teacher only; significant difference determined by inspection.

Note: A minus (-) significance ratio indicates difference favors control period.

different during the two periods. However, it may be noted that a rather large MnD of -3.50 accuracy score points is reported for the Language Experience Approach elements for sub-group I. An even larger MnD (-4.00) is reported for the total Basic Group. Other MnD's are small, indicating little difference. It can, therefore, be stated that these teachers tended to consider the Language Experience elements as much less accurate in describing their approaches during the experimental period than during the control period. In other words, their implementation procedures shifted

away from elements of the Language Experience Approach as they implemented the theoretical Basic Approach during the experimental period, but they continued to implement, as before, the elements of the Basic and Individualized Approaches. By consulting both Tables II and III, it is possible to detect not only individual shifts in consistency but over-all differences in approach implementation.

The very large MnD's (the actual difference in the accuracy scores for both periods, in this case) for the single teacher in sub-group II indicates a significant shift away from the Individualized and Language Experience Approaches and a significant shift toward the Basic Approach for the experimental period. This, plus the evidence presented in Table II, means that a comparison of two distinctly different approaches is possible, namely, the Individualized and the Basic Approaches.

Consequences of Implementing the Basic Approach

Tests of significance of difference between means achieved during the two periods in terms of achievement in reading, attitude toward reading and social/personal adjustment constitute the major data for reporting consequences relating to pupil behavior.

Achievement in Reading

Appendix E summarizes the treatment of achievement score data by classroom groups, by sub-groups and by the total group of

teachers in the Basic Approach Group. The means for each test, which are reported in months in Appendix E, may be converted to grade placement scores by moving the decimal one place to the left and rounding to the nearest tenth. Thus, the grade placement scores for teacher number 9 may be read: $T_1 = 6.4$, $T_2 = 7.7$, $T_3 = 7.9$. Similarly, total gain (mean of $T_3 - T_1$) for this same teacher may be read 1.5 grade placement levels of gain for the 0.8 grade placement period. In other words, this group could have been expected to gain only eight months in achievement but, in fact, gained nearly fifteen (14.6).

Minus values of MnD indicate that any significance of this amount favors the control period.

It may be stated, then, that the pupils in four of the teachers' classrooms (code numbers 9, 10, 17, and 37) achieved significantly higher gains in reading achievement during the control period than during the experimental period.

On the other hand, it may be stated that the pupils in two of the teachers' classrooms (code numbers 18 and 38) achieved significantly higher gains in reading achievement during the experimental period than during the control period.

The null hypothesis that no difference exists may be accepted for the other six teachers in sub-group I, for the one teacher in sub-group II and for sub-group I teachers when data are grouped.

However, when all thirteen sets of data representing all of
the teachers in the Basic Approach Group are considered, the null
hypothesis can be rejected at the 1.0 per cent level of significance
in favor of the control period. This is misleading, to some degree,
because it is obvious that the significance is gained by adding the
data from teacher 39, a situation which indicated no significance
of difference but simply tended in a direction favoring the control
period. In addition, contrasting approaches were used by this
teacher making this case quite different from the cases in sub-
group I.

In light of the data, it may be concluded that, in general,
no difference in terms of gains in achievement exists when in-
dividual teacher approaches characterized as basic approaches are
compared with a theoretical Basic Approach implemented by these
same teachers. Some evidence indicates that these teachers' pupils
tended to be more successful when the teachers were implementing
their own individual version of the basic approach.

It may be concluded that the null hypothesis is acceptable
in the case of teacher 33 (sub-group II) that no difference exists
in terms of pupil achievement as a result of comparing this in-
dividual teacher's approach characterized as an individualized
approach and this teacher's implementation of the Basic Approach.

The impressive mean gain for the total time period of 12.5
months, during a period in which a mean gain of eight months was

the expectancy for groups with normal abilities, forces the con-
clusion that significant growth in reading achievement occurred
between the initial and final testing dates of the study. It should
be remembered that the mean intelligence quotient for this total
group of pupils was reported as 106, near the center of the normal
range of 90 to 110.

Attitude Toward Reading

Appendix F presents the results of the treatment of the data
derived from the administration of the pupil attitude inventory
instrument. In all but one case (teacher code 18), there were no
statistically significant differences. In this particular case
the null hypothesis may be rejected at the 1.0 per cent level.
It may be stated, therefore, that the difference in this case
favored the control period and the teacher's own approach char-
acterized as an eclectic basic approach as opposed to gains toward
a more favorable attitude toward reading achieved during the ex-
perimental period. The teacher implemented the theoretical Basic
Approach which tended toward consistency during the experimental
period.

With reference to groups (sub-group I and the total group)
the very small significance ratios, as well as the small total
gains for the eight-month period (Appendix F), indicate a stable
attitude toward reading throughout the study. This is further
illustrated by the small differences between the means for the
three tests.

It should be noted that in the case of teacher number 18, the only class group where difference in attitude was significant (in favor of the control period) a difference in achievement was also shown to be significant. However, this difference in achievement favored the experimental or Basic Approach. In addition, Table II indicates that this teacher was among the top five with regard to degree of consistency in implementing the Basic Approach.

Teacher 39's (sub-group II) class yielded no significance in terms of differences in attitude between an approach characterized as individualized and the Basic Approach.

Personal/Social Adjustment

Appendix G follows the same format as Appendices E and F. No statistically significant differences occur in eleven of the twelve classroom groups in sub-group I.

The exception is teacher number 10 [Control Consistency Index score: 533 11 B versus experimental Consistency Index score: 432 11 B(I)]. The difference is significant at the 0.1 per cent level in favor of the experimental period. Since very little change in consistency of approach is evident, this difference cannot be said to be due to difference in approach to teaching.

There is no significant difference reported for teacher 39. Since this teacher represents the only case where an entirely different approach during the control period may be contrasted with the theoretical Basic Approach, it is important to point

out that the null hypothesis is acceptable for all three measures reported upon.

When data are grouped, the null hypothesis that no difference exists must be rejected at the 1.0 per cent level in the case of sub-group I and at the 0.1 per cent level for the total Basic Group. In both cases the differences favor the theoretical Basic Approach.

Relationship of Measures

Achievement and attitude.--Measures were correlated for each testing period. The following correlation ratios are the results: first tests, .19; second tests, .21; third tests, .25. These correlation ratios are all statistically significant and show a positive relationship. The size of the ratios tends to be too small to provide bases for more extensive generalizations.

Achievement and personal/social adjustment.--The results follow: first tests, .65; second tests, .49; third tests, .64. These correlation ratios are all statistically significant and positive. The size of the ratios may provide a basis for further generalizations.

Attitude and personal/social adjustment.--The results follow: first tests, .28; second tests, .33; third tests, .31. These correlation ratios are all statistically significant and positive. The size of the ratios tends to be too small to merit further generalizations.

Other correlations.--Appendix H presents a correlation matrix of selected variables. Statistical significance reported above and elsewhere was determined by consulting a table in A First Course in Statistics by E. F. Lindquist and published by Houghton Mifflin Company in 1942. This table appears on page 195 of the book.

Summary

Summary statements are made in terms of the hypotheses of the study (see pages 12 and 13) as they relate to the Basic Approach.

A Basic Approach to the teaching of reading has been analyzed and described in the form of operational definitions which can be used by classroom teachers as a guide to implementation.

In-service education programs designed to assist teachers prepare for implementation of the Basic Approach to teaching were valuable to the teachers involved.

Individual teacher approaches to the teaching of reading were not significantly different from the theoretical Basic Approach for the twelve teachers in sub-group I. Some internal shifts in consistency were reported, as well as certain tendencies to shift away from certain elements of the Language Experience Approach.

The null hypothesis must be rejected for the teacher in sub-group II.

There were no significant differences in approaches when the total Basic Group is considered.

Teachers who implemented the theoretical Basic Approach rated the various elements positively in terms of workability, practicality, and significance.

There are significant differences in reading achievement for six of the twelve classroom groups in sub-group I. These differences do not consistently favor either of the two periods, even though four differences favor the control period. There is no significant difference for sub-group I or sub-group II.

There is no significant difference in pupil attitude gains for sub-group I or sub-group II. One classroom group showed a significant difference in favor of the control period (teacher's own version of the basic approach).

There is a significant difference in the amount of gains in personal/social adjustment scores for sub-group I which favors the experimental period (theoretical Basic Approach). One classroom group yielded a significant difference in favor of the experimental period.

There are statistically significant positive relationships between achievement and attitude, achievement and personal/social adjustment, and attitude and personal/social adjustment.

When the teacher's own approach characterized as an individualized approach (teacher 39) was compared with this teacher's

implementation of the theoretical Basic Approach, no significant differences in gains in achievement test scores, attitude scores or personal/social adjustment scores were found.

CHAPTER III

INDIVIDUALIZED READING APPROACH

Sources of Data

Three tables which are presented on following pages summarize a variety of information concerning teachers and pupils in the Individualized Group. This group originally consisted of thirty-six teachers and classroom groups. All thirty-six teachers responded to project and approach evaluation instruments. However, two of these teachers and groups were eliminated from inclusion in other tables and appendices since the student data were incomplete.

For clarity, all data are presented in tables and appendices in terms of three sub-groups. These sub-groups contain the teachers whose control period individual approaches are common as defined by their consistency index scores. In addition, the order in which teachers are listed in these tables and appendices follows the degree of consistency in implementing the theoretical Individualized Approach (highest consistency first). This determination is also based upon Consistency Index Scores.

The three sub-groups may be described as follows:

(1) Sub-group III: Nineteen teachers who implemented their individual approaches characterized as a basic approach during the

control period. These same teachers implemented the theoretical Individualized Approach during the experimental period.

(2) Sub-group IV: Ten teachers who implemented their individual approaches characterized as an individualized approach during the control period. These same teachers implemented the theoretical Individualized Approach during the experimental period.

(3) Sub-group V: Five teachers who implemented their individual approaches characterized as mixtures (inconsistent in terms of any of the three approaches) of approaches during the control period. These same teachers implemented the theoretical Individualized Approach during the experimental period.

The thirty-four teachers who completed the study represent nine of the twelve school districts. Sub-group III represents seven school districts, sub-group IV represents seven school districts, and sub-group V represents four school districts. School district code 3 is most heavily represented with over one third of the teachers coming from that district. Eight of the twelve teachers from that district are in sub-group III.

Table IV gives the data for sub-group III, which is made up of nineteen class groups with an average size of 21.95 pupils (after screening incomplete pupil data cards). There are 414 pupils in these nineteen classes. All grade levels are represented with the exception of grade six. Three combination grades are represented. Grades three and four account for nine of the nineteen classes.

TABLE IV

INDIVIDUALIZED APPROACH GROUP: SUB-GROUP III
DESCRIPTION OF TEACHERS AND CLASSES

Teacher Code Number	District Code Number	Total Years of Teaching	Years in Present Grade	Grade Taught	Number of Pupils	Mean Intelligence Quotient	Mean Chronological Age (Months)
19	3	...	...	3	15	95	103
22	3	21	...	4	26	113	112
24	3	17	10	1	15	...	75
51	6	20	9	5	15	110	124
25	3	6	6	4	29	121	111
23	3	7	1	2	16	107	91
3	1	15	9	2	19	132	88
21	3	28	3	5	18	129	126
30	3	22	4	2/3	29	107	93
1	1	3	3	3	25	111	102
35	4	4	1	3	24	107	101
36	4	8	8	1/2	22	126	82
53	10	...	...	2	21	107	90
65	12	18	6	5	28	105	126
28	3	4	3	3/4	25	113	105
62	12	3	3	3	23	110	102
64	12	13	7	3	23	107	101
63	12	8	8	2	26	102	88
40	6	12	7	1	15	...	76

The mean intelligence quotient and chronological age for sub-group III are 110 and 101 months respectively.

Median total years of teaching for this group is eight years with a range from three to twenty-eight years. Median years in present grade is six years with a range of one to ten years.

Table V presents data for sub-group IV which consists of ten teachers and 213 pupils. Mean intelligence quotient for this group is 107 and mean chronological age is 116 months. The average class size is 21.30 pupils.

TABLE V

INDIVIDUALIZED APPROACH GROUP: SUB-GROUP IV
DESCRIPTION OF TEACHERS AND CLASSES

Teacher Code Number	District Code Number	Total Years of Teaching	Years in Present Grade	Grade Taught	Number of Pupils	Mean Intelligence Quotient	Mean Chronological Age (Months)
20	3	15	12	3	20	107	101
50	8	5	5	3	19	109	102
13	2	16	1	3	23	116	100
45	7	15	9	5	21	105	125
41	6	13	5	4	29	104	112
2	1	9	4	6	17	114	136
29	3	8	5	5/6	13	95	131
44	6	3	3	6	28	106	137
42	6	7	4	4	31	107	111
54	10	...	...	2	12	105	93

Teachers in sub-group IV have had from three to sixteen years of teaching experience with a median of nine years of experience. They have had from one to ten years in the present grade taught with a median of five years. Grade one is the only grade level not represented in this sub-group.

Sub-group V is a small group consisting of five teachers from four different districts. Table VI indicates that grades two, four, and six are the grade levels represented. Three of the five teachers have had only two years total teaching experience. This accounts for the median years of experience of only two years. The range

TABLE VI

INDIVIDUALIZED APPROACH GROUP: SUB-GROUP V
DESCRIPTION OF TEACHERS AND CLASSES

Teacher Code Number	District Code Number	Total Years of Teaching	Years in Present Grade	Grade Taught	Number of Pupils	Mean Intelligence Quotient	Mean Chronological Age (Months)
46	7	2	1	6	24	109	137
11	1	14	14	2	21	100	90
27	3	2	2	2	15	109	88
43	6	2	1	4	21	104	106
26	3	19	19	2	21	115	87

is two to nineteen years. Similar figures for years in present
grade level (median of two years and range of one to nineteen years)
indicate that this group is the least experienced of the three
sub-groups.

Table VI presents data for sub-group V which consists of ten
teachers and 102 pupils. Mean intelligence quotient for this group
is 106 and mean chronological age is 104 months. The average class
size is 20.40 pupils.

Reviewing the data from all three tables (IV, V, and VI),
there are thirty-four teachers and class groups. Total years of
teaching for the thirty-four teachers ranges between two and
twenty-eight years with a median of nine years. Total years in
present grade range from one to nineteen years with a median of
five years. There is a total of 732 pupils with an average class
size of 21.53. Mean intelligence quotient is 109 (intelligence
quotients were reported for 637 pupils) and mean chronological age
is 105 months. All grade levels are represented. Sixteen of the
thirty-four classes are either third or fourth grade (eight of
each). Four combination grades are represented.

Description and Analysis of the
Individualized Approach

The following description and analysis represents the solution
to one of the major problems of this study with respect to the
Individualized Approach to the teaching of reading. As was

pointed out with respect to the Basic Approach in an earlier chapter, this description served many purposes.

General Definition

The individualized reading approach is based upon the child's own desire to discover, explore, and react to stimuli in his environment. Guided by his own motivation to learn, his reaction to these stimuli which he selects himself enables him to develop meanings which are essential to behavioral change. Basic to this approach is the principle of learning theory which recognizes that each individual learner is most genuinely motivated in terms of his own needs and that when provided with the appropriate environment, guidance, and materials, he will tend to choose materials most suitable to his maturity, ability, and interests.

The major objective of this approach is to provide opportunities for each pupil, progressing at his own rate of growth, to gain experience in a variety of reading situations.

The major functions of the teacher are these: to provide a balance of reading materials, to evaluate growth, to teach reading skills, and to develop interests and attitudes. These functions are fulfilled primarily by the teacher as she helps pupils in their selection of printed materials, offers guidance during individual conferences, keeps records of pupil progress, and offers individual and group encouragement during silent reading periods.

Operational Definition

Criterion one.--The teacher with the help of the children

selects a wide variety of reading materials (books, magazines, and

pamphlets) from all possible sources. These materials should repre-

sent varying degrees of reading difficulty, interest, content, style,

and format. These materials become the media for reading instruction.

Rationale one.--Children differ in native ability, interest,

and emotional needs. Children's purposes vary at any given time.

In order better to accommodate these differences there is no limit

to the amount and kind of material needed.

Criterion two.--The teacher encourages the children to become

familiar with the material available by providing opportunities

for them to browse, to discuss the materials, to hear passages or

stories, to use book lists, and through other similar devices.

Rationale two.--Familiarity with material promotes more in-

telligent use. Children, when they discover reading materials in

the areas of their particular interests, are motivated to read

widely. The child is lead to appreciate the rich variety of read-

ing material available to him. New interests are aroused.

Criterion three.--To prepare children for initial selection

of materials for reading, the teacher guides children in the de-

velopment of effective techniques for appraising printed materials

quickly. Examination of preface, introduction, table of contents, index, topic sentences, and pictures is encouraged. Skimming and other surveying techniques are developed through explanation, demonstration, and tryout.

Rationale three.--Because of the great amount of printed material available today, it becomes a primary task of the teacher to provide the pupil with the necessary techniques for selecting materials appropriate to his individual needs and purposes. Knowing these techniques, however, is not enough. Provision must be made for application of these techniques in meaningful situations; for instance, selecting materials for real purposes of the reader.

Criterion four.--During the initial stages of using the printed material in the classroom, the children are encouraged to "tryout" different materials in terms of their interests, purpose, and ability to read it. They are allowed complete freedom within the range of material available in arriving at their choices of material for more concentrated use during the time allowed them for this kind of activity.

Rationale four.--Whereas children can best determine their own reading ability, and, also, whereas interests and purposes are individually unique, the children themselves are more likely to choose materials which are appropriate for meeting their individual needs. Children are more highly motivated when they are

able to pursue tasks of their own choosing. A more valid assess-
ment of their true ability to read print is possible under such
conditions.

Criterion five.--Children are encouraged to proceed in their
selected material at their own rate. Time, vocabulary growth,
skill development, and interest are the major factors regulating
this growth.

Rationale five.--A child will advance more rapidly if he
is encouraged to proceed at his own rate of progress which is
unique to him. His rate of progress is not limited by the rate
of progress of a group.

Criterion six.--Guidance in reading skills, vocabulary growth,
interest, and attitude is provided by the teacher through scheduled
individual conferences with each student as the need arises. In-
dividual conferences are held with students to help develop an
understanding of the needed skills necessary to individual growth.
The teacher points out the areas of the child's success in reading
and helps him to plan additional reading experiences in areas where
he needs success.

Rationale six.--No two students have identical specific
reading characteristics at any one time; therefore, instruction
can best be achieved on an individual basis. The close working
relationship between teacher and pupil inherent in individual

conferences helps the child see that someone is concerned about his interest and progress and is willing to give him needed assistance. In pointing out the child's successes in reading, the teacher is encouraging the pupil to future success.

Criterion seven.—Group situations may be employed when

a. Two or more children have similar needs in skill development.

b. There is an expressed desire to share reading interests.

c. There is need to share ideas of different students gleaned from their individual or common reading.

Structure of groups changes as needs change.

Rationale seven.—Children will at times exhibit common specific needs which, as a matter of expediency, can best be taught in group situations. Children have need to identify with a group situation wherein they feel they have peers in reading skills, interests and/or attitudes, and where they can see that different people bring different meaning to a reading selection. They also need the opportunity to profit from meanings which differ from theirs.

Criterion eight.—An individual reading record for each student is kept by the teacher. Two basic areas of information are kept in this record. In diagnosing the child's progress, the teacher keeps frequent anecdotal notations of the child's growth based upon daily observation. In observation the teacher looks for

interests, attitudes, reading level and rate and difficulties in skills. The number of conferences and amount of time spent with each child is noted also. Over-all reading growth is recorded periodically to survey the following areas: tastes, physical disabilities, variety of reading experiences, and results of informal and formal testing.

Rationale eight.--An individual reading record facilitates the teacher's diagnosis of each child's reading strengths and weaknesses. This allows her to work in individual conferences with each child so that he gains an understanding of his progress.

Project Evaluation

A "Reading Study Project Evaluation Questionnaire" was administered to all teachers in the study at the culmination of the project. Appendix B consists of the six parts of the questionnaire and should be consulted as needed to clarify the discussion which follows.

Analysis of Project Evaluation

Selection and introduction to study.--An over-all composite mean of 4.14 indicates that teachers felt that this aspect of the project was above average. The small standard deviation of .29 indicates close agreement among teachers on this matter. Teachers rated freedom in selection of approach as excellent. All other items were rated above average.

The item (I, 4) dealing with written material is an evaluation in part of the description and analysis of the approaches. The mean rating of 3.95 places this item in the "good, decidedly above average" category.

In-service meetings.—Only one other aspect of the study (communications and mechanics) was rated higher on an over-all basis than this aspect. A mean rating of 4.51 (excellent, exceptional in all respects) was given item 2 which deals with freedom to participate actively in discussions. Above average ratings for items 6 and 8 are further evaluations of the description of the approach. The over-all mean rating of 4.18 is supported by consistently high (above average or better) ratings on each of the eight items in this section.

Implementation of the approach.—The ten items in this section of the questionnaire received a range of mean ratings from 3.27 (average, generally satisfactory) to 4.59 (excellent, exceptional in all respects). Most items (eight of the ten) received above average ratings. An over-all mean rating of 4.01 indicates that the implementation aspect of the project was above average.

The interest and support of the districts (nine districts) in helping teachers carry out the approach was rated as excellent. On the other hand, item 4 was rated only average. This item dealt with opportunities to share experiences with other teachers.

Items 1 and 9 should be compared for some indication of
teacher growth in insight into the Individualized Approach as a
result of implementing the theoretical approach. Some growth was
indicated even though teachers generally started with what they
considered above average insight into the approach at the beginning
of the implementation period.

Communications and mechanics.--This section received the
highest over-all mean rating (4.27) of any aspect of the study.
This is primarily due to high ratings given items concerning dis-
trict liaison persons.

Another evaluation, in part, of the descriptions is the 4.22
mean rating given item 2 which deals with adequacy of information
available for implementation of the approach.

Testing.--This section received an above average rating but
was the lowest rated section of the six sections. Mechanics of
scoring tests and usability of the Inventory of Reading Attitude
were rated as only average. The adequacy of the Student Test
Data Record Card received the highest mean rating in this section.

Teacher instruments.--An over-all mean rating of 3.83 places
this section in the above average category. The Adjective Check
List which received only an average rating was administered for
purposes of another related study.

Summary

All major sections received over-all mean ratings of above average. Of the thirty-eight items in these six sections, five were rated excellent; twenty-nine were rated above average; four received average ratings. The highest rating was 4.68 and the lowest was 3.00. No item received fair or poor mean ratings. The greatest variability of response was with regard to the items in the testing section.

All but the last two major sections received over-all mean ratings of 4.01 or better. Generally speaking, these teachers rated all aspects of the study above average.

Evaluation of Individualized
Approach

A second part of the project evaluation consisted of an instrument requiring teachers to rate (on a five-point scale) ten elements of the Individualized Approach. Appendix I presents these elements and the mean ratings given by these teachers.

All ten items received mean ratings placing them in the above average or excellent categories. The lowest comparative mean rating was 3.86 (item 3) whereas the highest rating was a near perfect 4.92 (item 1).

The two items rated as excellent by these teachers dealt with making available for pupils a wide range of varied reading materials and the concept of allowing pupils to proceed through reading

material at their own rate. These two items may be considered to represent the most important elements of the Individualized Approach.

Not counting the two items receiving excellent ratings, five other items were rated 4.00 or better. This indicates above average in the upper range of above average ratings. Instructing children in techniques of selection of reading material and encouraging children to share what they read rated very high among these five items.

Based on these responses, it appears that these teachers feel that the elements of the Individualized Approach are practical, workable, and significant to a decidedly above average to excellent degree. This could be accepted as a further validation of the usefulness of the operational definitions and the in-service program provided for these teachers.

Teacher Approaches

As has already been discussed, teacher approaches have been determined primarily through data obtained from an instrument dealing with teaching approach administered twice to each teacher.

Three tables (VII, VIII, and IX) have been prepared to indicate teacher approaches in terms of consistency index scores. Each table represents one of the sub-groups described earlier. Teacher entries with regard to order follow the same plan used for tables presenting information about teachers and pupils; for instance, highest consistency for experimental period was exhibited by teacher 19 who is therefore the first entry in Table VII.

TABLE VII

ANALYSIS OF APPROACHES EMPLOYED
BY TEACHERS IN SUB-GROUP III
INDIVIDUALIZED GROUP

Sub-Group	Teacher Number	Consistency Index Score: Control Period	Consistency Index Score: Experimental Period
III	19	522 13 B	522 13 I
III	22	522 13 B	522 13 I
III	24	432 11 B(LE)	522 13 I
III	51	521 14 B(LE)	522 13 I
III	25	422 12 B	531 13 I(B)
III	23	442 8 B(I)	532 12 I(LE)
III	3	433 10 B	422 12 I
III	21	433 11 B(I)	422 12 I
III	30	421 13 B(I)	422 12 I
III	1	432 11 B(I)	533 11 I
III	35	522 13 B	533 11 I
III	36	433 10 B	533 11 I
III	53	433 10 B	533 11 I
III	65	442 10 B(I)	533 11 I
III	28	433 10 B	432 11 I(LE)
III	62	432 11 B(I)	432 11 I(LE)
III	64	433 10 B	543 10 I(LE)
III	63	544 9 B	443 9 I(LE)
III	40	432 11 B(LE)	442 8 I(LE)

Nineteen teachers are represented in Table VII. The first nine implemented the Individualized Approach in a consistent manner during the experimental period, eight were eclectic, and the last two teachers tended to be inconsistent in their implementation. All of these teachers employed to some degree of consistency an approach characterized as a basic approach during the control period. It is, therefore, possible to compare the theoretical Individualized Approach with individual teacher versions of the basic approach.

The first two teachers (code numbers 19 and 22) exhibit identical consistency index scores for both periods providing an entirely comparable situation for contrasting the two approaches represented. Others on the list indicate fairly close comparability in consistency index scores.

Table VIII represents ten teachers who implemented the theoretical Individualized Approach during the experimental period; they implemented their own version of the individualized approach during the control period. Therefore, no comparisons of different approaches are possible.

This sub-group could be classified as representing the same sort of situation for testing the Indvidualized Approach as sub-group I is for testing the Basic Approach. The first four teachers listed in the table implemented the theoretical Individualized Approach in a manner that tended toward consistency whereas there was only one teacher who tended to be consistent

in the implementation of the individualized approach during the
control period. Five teachers implemented the theoretical In-
dividualized Approach in an eclectic manner whereas only one
tended to implement this approach in an inconsistent manner.

TABLE VIII

ANALYSIS OF APPROACHES EMPLOYED
BY TEACHERS IN SUB-GROUP IV
INDIVIDUALIZED GROUP

Sub-Group	Teacher Number	Consistency Index Score: Control Period	Consistency Index Score: Experimental Period
IV	20	532 12 I(B)	522 13 I
IV	50	322 11 I	522 13 I
IV	13	443 9 I(LE)	422 12 I
IV	45	443 9 I(B)	532 12 I(LE)
IV	41	433 10 I	533 11 I
IV	2	433 10 I	432 11 I(LE)
IV	29	432 11 I(B)	432 11 I(B)
IV	44	533 11 I	432 11 I(LE)
IV	42	442 8 I(B)	433 10 I
IV	54	543 10 I(LE)	443 9 I(B)

Six of the teachers tended to be eclectic and three tended
to be inconsistent in implementing their own version of the
approach during the control period. Considering these data, it
is apparent that a purer Individualized Approach was implemented
during the experimental period.

Sub-group V includes five teachers whose control period approaches are best characterized as mixtures of approaches. With one exception (teacher 26), their experimental approach was a consistent Individualized Approach.

Table IX indicates this mixture through showing consistency index scores with two letter symbol suffixes rather than one. This implies that exactly equal accuracy scores were gained in two of the three approaches.

TABLE IX

ANALYSIS OF APPROACHES EMPLOYED
BY TEACHERS IN SUB-GROUP V
INDIVIDUALIZED GROUP

Sub-Group	Teacher Number	Consistency Index Score: Control Period	Consistency Index Score: Experimental Period
V	46	222 8 I LE	521 14 I(LE)
V	11	443 9 B I	522 13 I
V	27	444 8 B LE	532 12 I(LE)
V	43	442 8 LE I	532 12 I(LE)
V	26	444 8 B I	542 9 I

Another method of analyzing changes in approaches between the two periods is presented in Table X. The same procedure as explained on pages 58 and 59 regarding Table III was utilized.

TABLE X

TEACHER APPROACH DIFFERENCES: EXPERIMENTAL PERIOD
VERSUS CONTROL PERIOD
INDIVIDUALIZED GROUP

Group or Sub-Group	MnD			Significance Ratio			Level of Significance		
	B	I	LE	B	I	LE	B	I	LE
III	-20.47	21.00	3.21	-11.13	8.64	1.98	0.1	0.1	...
IV	- 8.00	4.90	-1.90	- 4.31	1.66	- .67	1.0	...	...
V	-11.40	13.60	-6.80	- 2.36	3.55	-2.53	...	5.0	...
Ind.	-15.47	14.60	.24	- 9.49	7.04	.17	0.1	0.1	...

For sub-group III, the minus significance ratio and MnD with
regard to Basic Approach accuracy scores indicates that the dif-
ference favored the control period and was significant at the 0.1
per cent level. The opposite is true with regard to Individualized
Approach accuracy scores. It can, therefore, be stated that the
approach implemented by the group during the control period was
significantly different from the approach implemented during the
experimental period with respect to elements of both the basic
and individualized approaches. There was no significant difference
with regard to the language experience approach elements.

Sub-group IV, though appearing to implement the individualized approach during both periods did produce a MnD which proved significant at the 1.0 per cent level with regard to elements of the basic approach. These teachers implemented a more basic approach oriented version of the individualized approach during the control period and thus a purer form of theoretical Individualized Approach during the experimental period.

Since a 1.0 per cent level of significance was required, it must be stated that no significant difference in approach occurred between periods for sub-group V. However, a marked tendency to teach a purer version of the theoretical Individualized Approach during the experimental period is indicated by the MnD of 13.6 and the significance ratio which produced a 5.0 per cent level of significance.

When all sub-groups are placed in one group (the Individualized Group), differences are found to be significant at the 0.1 per cent level with regard to elements of the basic approach and elements of the individualized approach. Taken as a whole, these teachers taught a significantly different approach during the control period as contrasted with the experimental period. They taught what can best be described as a form of the basic approach during control period versus the theoretical Individualized Approach during the experimental period.

Consequences of Implementing
the Individualized Approach

Tests of significance of difference between means achieved during the two periods in terms of the various measures constitute the major data for reporting consequences relating to pupil behavior.

Achievement in Reading

Appendices J, K, and L summarize the treatment of achievement test score data by classroom groups, each appendix representing one of the three sub-groups already described. These appendices follow the same pattern established for Appendix E (see page 61). Note that the same order of listing of teacher entries is utilized as established for other tables in this chapter.

Appendix J summarizes the achievement data for sub-group III. These teachers taught contrasting approaches (control, basic; experimental, theoretical Individualized). For thirteen of the nineteen cases, there were no significant differences in gains for the two periods. In five cases, the differences were significant and favored the control period. In one case, the difference was significant and favored the experimental period. For the group as a whole, the difference was significant at the 0.1 per cent level and favored the control period.

Total gain in months of achievement for both periods combined for sub-group III was 13.7 months or nearly a year and four months mean gain. The mean gain for this sub-group during the control period was 9.5 months while the mean gain for the experimental period was 5.1 months. This is impressive since normal mean

expectancy for a four-month period has been established as 4.0 months of gain. The mean intelligence quotient of 110 might account, to some degree, for this group's higher-than-expected achievement results.

Of the five groups which achieved significantly different (higher) reading score gains which favored the teacher's version of the basic approach, there were two fourth-grade classes, a combination third- and fourth-, a combination second- and third-, and one second-grade class. The classroom group showing significant difference in favor of the theoretical Individualized Approach over the classroom teacher's own version of the basic approach was a first-grade group.

Appendix K summarizes the achievement data for sub-group IV. This sub-group consisted of ten teachers who taught an approach characterized as an individualized approach during the control period and the theoretical Individualized Approach during the experimental period.

Eight of the ten classroom groups show no significant difference. Two of the ten show a significant difference favoring the control period. Both of these groups show very large total mean gains when both periods are combined. These groups, in fact, showed more than double the expected gain in achievement (18.4 months and 17.3 months, respectively).

When these data are grouped, sub-group IV is shown to have a total gain of 12.0 months (one year and two months of grade

placement gain) during the eight-month period. There is a differ-
ence in gains during the two periods of 3.0 months. This differ-
ence is significant at the 0.1 per cent level and favors the con-
trol period.

Sub-group V data appear in Appendix L. Data from all three
sub-groups are also summarized in Appendix L in the last entry in
the table. Two of these five teachers taught groups which achieved
a difference in gain between the two periods that were significant.
The sub-group as a whole is shown to have achieved a significantly
different gain between the two periods. The differences in all of
these noted instances favor the control period.

When all sub-groups are considered as one group (all, In-
dividualized Group) an over-all total gain of 12.9 months (one
year and three months of grade placement months of gain) is re-
ported. A difference of 3.2 months of gain between the two periods
is significant at the 0.1 per cent level and favors the control
period.

Attitude Toward Reading

Appendices M, N, and O present data with regard to scores
made on the attitude inventory. Each appendix applies to one of
the three sub-groups and is constructed to parallel the appropriate
appendix dealing with achievement data.

A significant difference is reported for only one classroom
group of the nineteen presented in Appendix M (sub-group III).

Sub-group III, as a total group indicates no significant difference in gains between periods. The small total mean gain of eight points for the entire group of pupils as well as the mean difference of less than one point (-0.6) indicates a fairly stable pupil attitude toward reading.

Appendix N presents data from sub-group IV. None of the ten classroom groups achieved a difference which is significant. However, taken as a whole group, a difference of -3.5 points is significant at the 1.0 per cent level. The minus indicates that this difference favors the control period.

Appendix O presents data from sub-group V and for the total Individualized Group. Three classroom groups achieved differences which were significant, two favoring the control period and one, the experimental period. No significant difference is indicated for the total sub-group.

When all thirty-four classroom groups are considered as one group, a mean difference in gain of -2.1 points is significant at the 1.0 per cent level. This difference favors the control period.

Personal/Social Adjustment

Appendices P, Q, and R present data with regard to scores made on the personality test. Each appendix applies to one of the three sub-groups and is constructed to parallel the appropriate appendices dealing with achievement and attitude data.

Sub-group III data are presented in Appendix P. Two classroom groups achieved differences between periods that were significant. In both cases the differences favored the experimental period. A difference of +3.5 points was significant at the 1.0 per cent level and favored the experimental period when sub-group III is considered as a whole.

Appendix Q presents data from sub-group IV. No significant differences are reported for any classroom group. The difference for the sub-group as a whole is not significant.

Appendix R presents data from sub-group V. Differences are significant for two of the five teachers, for the sub-group as a whole and for the Individualized Group as a whole. These differences all favor the experimental period.

Relationships of Measures

Achievement and attitude.—Appendix S presents a correlation matrix of selected variables. Correlation ratios for achievement and attitude are shown for each testing period. Those ratios are as follows: test one, .23; test two, .25; test three, .31. These ratios are all statistically significant and positive.

Achievement and personal/social adjustment.—Correlation ratios for the three test periods are as follows: .65, .70, and .70. These ratios are all statistically significant and positive.

Other correlations.—Appendix S presents correlation ratios
for fourteen selected variables and three testing periods.

Summary

Summary statements are made in terms of the hypotheses of
the study (see pages 12 and 13) as they relate to the Individualized
Approach.

Operational Definition

An Individualized Approach to the teaching of reading has
been analyzed and described in the form of operational definitions
which can be used by classroom teachers as a guide to implementation.

In-Service Education

In-service education programs designed to assist teachers pre-
pare for implementation of the Individualized Approach were valuable
to the teachers involved.

Teacher Approaches

Individual teacher approaches to the teaching of reading are
significantly different from the theoretical Individualized Ap-
proach (in terms of one or more of the sets of elements from the
three approaches) for the total Individualized Group, for sub-group
III, and for sub-group IV. The null hypothesis that there is no
difference must be accepted for sub-group V. However, when con-
sistency index scores are consulted, this analysis would indicate
considerable difference. These data coupled with a 5.0 per cent

level of significance of difference for elements of the Individual-
ized Approach verify this difference.

Individualized Approach Evaluation

Teachers who implemented the theoretical Individualized Ap-
proach rated the various elements of the approach positively in
terms of workability, practicality, and significance.

Consequences: Achievement

A difference (MnD) in months gained of 3.2 months of reading
achievement for sub-group III is significant at the 0.1 per cent
level. This difference favors the control period (teachers' own
approaches best characterized as basic approaches). On the other
hand, thirteen classroom groups of the nineteen indicate no sig-
nificant differences with regard to achievement. Five of the six
groups showing a significant difference favor the control period.

A difference (MnD) in months gained of 3.0 months of reading
achievement for sub-group IV is significant at the 0.1 per cent
level. This difference favors the control period (teachers'
own approaches best characterized as individualized approaches).
On the other hand, only two of the ten classroom groups indicate
a similar significant difference, while the remaining eight
classroom groups show no significant differences.

A difference (MnD) in months gained of 3.6 months of read-
ing achievement for sub-group V is significant at the 1.0 per
cent level. This difference favors the control period (teachers'

own approaches best characterized as a mixture of approaches or
inconsistent approaches with regard to any of the three approaches).
Three of the five classroom groups in this sub-group indicate no
significant difference in achievement.

For the Individualized Group (thirty-four classroom groups)
as a whole, a difference of 3.2 months of reading achievement is
significant at the 0.1 per cent level. This difference favors the
control period (teachers' own approaches). However, when each
classroom group is considered as a unit, twenty-four classroom
groups indicate no significant differences in achievement; only
nine indicate a significant difference favoring the control
period; one indicates a significant difference favoring the
experimental period.

Consequences: Attitude

No significant difference in gains on the attitude inventory
is reported for sub-group III. One of the classroom groups re-
ported a difference (MnD) of 24.1 points of gain which favored
the experimental period and is significant at the 1.0 per cent
level.

A difference (MnD) of 3.5 points of gain is significant at
the 1.0 per cent level for sub-group IV and favors the control
period. However, none of the ten classroom groups report a dif-
ference which is significantly different.

As a whole, no difference is reported for sub-group V.
However, three of the five classroom groups indicate significant

differences at the 1.0 per cent level. Two of these differences favor the control period and one, the experimental period.

A 2.1 point difference (MnD) is significant at the 1.0 per cent level when all teachers are grouped into the Individualized Group. This small difference favors the control period. However, when considering classrooms as units, only four classroom groups indicated a significant difference, two favoring the control period, and two favoring the experimental period. The majority of classroom groups (thirty of the thirty-four) indicate no significant differences.

Consequences: Personal/Social Adjustment

Differences are significant for two of the nineteen teachers in sub-group III and for sub-group III as a whole. These differences all favor the experimental period.

The null hypothesis must be accepted for sub-group IV and each of the ten classroom groups in this sub-group.

Differences are significant for two classroom groups in sub-group V and for sub-group V as a whole. These differences favor the experimental period.

A difference of 3.0 points is significant at the 0.1 per cent level when all teachers are grouped into the Individualized Group. This small difference favors the experimental period. However, when considering classrooms as units, only four classroom groups indicate a significant difference. All four of these favor

the experimental period. The majority of classroom units show no significant differences (thirty of the thirty-four classroom groups).

Relationships

Statistically significant positive relationships exist between achievement and attitude, achievement and personal/social adjustment, and attitude and personal/social adjustment.

CHAPTER IV

LANGUAGE EXPERIENCE READING APPROACH

Sources of Data

A variety of information concerning teachers and pupils in the Language Experience Group is presented in Table XI. This group originally consisted of sixteen teachers and classroom groups; all sixteen teachers responded to project and approach evaluation instruments. However, four of these teachers and groups were eliminated from inclusion in other tables and appendices since the student data were incomplete.

The total Language Experience Group of twelve teachers and classroom groups have been regrouped into five sub-groups. Two of these sub-groups consist of only one teacher each whereas there are two, three, or five teachers in the other three sub-groups. These sub-groups contain a teacher or the teachers whose control period individual approaches are common as defined by their consistency index scores. In addition, the order in which teachers are listed in Table XI and other tables and Appendices for this group follow the degree of consistency in implementing the theoretical Language Experience Approach (highest consistency first). This determination is also based upon consistency index scores.

The five sub-groups may be described as follows:

(1) Sub-group VI: Three teachers who implemented their individual approaches characterized as an individualized approach during the control period. These same teachers implemented the theoretical Language Experience Approach during the experimental period.

(2) Sub-group VII: Two teachers who implemented their individual approaches characterized as a basic approach during the control period. These same teachers implemented the theoretical Language Experience Approach during the experimental period.

(3) Sub-group VIII: One teacher who implemented her individual approach characterized as a mixture (inconsistent in terms of any of the three approaches) of approaches during the control period. This teacher implemented the theoretical Language Experience Approach during the experimental period.

(4) Sub-group IX: One teacher who implemented her individual approach characterized as a basic approach during the control period. This teacher implemented a highly inconsistent form of the basic approach during the experimental period. It should be noted that this teacher is the only teacher in any approach group who failed to implement her chosen theoretical approach during the experimental period. She seemed to rank all elements of all approaches equally high in describing (through rating) her experimental approach.

(5) Sub-group X: Five teachers who implemented their individual approaches characterized as a language experience

approach during the control period. These same teachers implemented the theoretical Language Experience Approach during the experimental period.

The twelve teachers and classroom groups analyzed in Table XI represent five of the twelve school districts participating

TABLE XI

LANGUAGE EXPERIENCE APPROACH: DESCRIPTION OF
TEACHERS AND CLASSES

Sub-group	Teacher Code Number	District Code Number	Total Years of Teaching	Years in Present Grade	Grade Taught	Number of Pupils	Mean Intelligence Quotient	Mean Chronological Age (Months)
VI	15	2	...	...	2	23	117	90
VI	7	1	8	...	5	27	102	124
VI	4	1	13	7	4	25	117	112
VII	5	1	4	4	2	20	...	89
VII	52	9	8	6	1	12	...	76
VIII	47	7	...	...	3	22	95	102
IX	33	3	29	8	2	30	102	88
X	8	1	2	2	6	19	102	140
X	6	1	6	2	1	12	...	77
X	48	7	22	11	1	14	89	94
X	14	2	7	5	1	13	107	77
X	34	3	6	1	2	17	112	88

in the study. District number 1 contributed five of the teachers whereas the other four districts are represented by one or two teachers each.

Based on the data in Table XI, it may be noted that the median number of years of total teaching experience for the total group is eight years; for teaching experience in present grade, the median is six years.

All grade levels are represented with four each of first- and second-grade classroom groups. One classroom group each from grades three, four, five, and six completes the table.

The total number of pupils for the entire group is 235 with an average class size of 19.58 pupils per class. The mean intelligence quotient for the total group is 105; for sub-group VI, 112; for sub-group X, 103. Mean chronological age for the total Language Experience Group is 99 months; for sub-group VI, 110 months; for sub-group VII, 84 months; for sub-group X, 98 months.

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Description and Analysis of the
Language Experience Approach

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The following description and analysis represents the solution to one of the major problems of this study with respect to the Language Experience Approach to the teaching of reading.

<div align="center">

General Definition

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The language experience approach to teaching reading is recognition in daily practice that learning is based upon the

experience of the learner. The development of the Language Experience Approach is founded upon fundamental understandings which are cultivated in the thinking of each child as he lives and learns with other children and adults. The teacher recognizes that each child brings to school a unique language personality. She strives to preserve the individual's personality at the same time that certain common understandings and skills are being habituated.

The language experience approach to teaching reading requires that each child be given opportunities to work individually with the teacher, in small groups, and in the total class group. In each situation the child is expected to express and record his own thoughts, ideas, aspirations, and ideals through painting, writing, and speaking. These student-prepared materials are used as basic sources of reading. In each group he also learns to read and make use of thoughts which other people have recorded.

The use of other books is necessary for the child to achieve a balanced program of reading and to increase his skills of word recognition and interpretation of reading.

Operational Definition

Criterion one.--The teacher expects each child to produce something of his own thinking and interest using familiar media such as crayon, pencil, and paint.

Rationale one.--All learning must be based upon the previous
experience of the learner. The child, in expressing what he knows,
should use familiar media of expression. Those which are normally
used in the home and the kindergarten should be continued into
the first grade and beyond.

Criterion two.--The teacher gives each child an opportunity
to express his thinking through oral language. The child responds
as an individual, as a member of a small group or in the total
class group.

Rationale two.--Oral language is a base from which written
language emerges. Until the child is able to express his ideas
through speech, he cannot communicate as effectively with others
and has a limited basis upon which to build a writing-reading
vocabulary.

Criterion three.--In the beginning stages, the teacher ex-
tracts from the oral expression of the individual a sentence or
two which summarizes his story. She records the child's story
in summary form for the child and in his presence. The teacher
uses as much of the child's language (his particular mode of
expression) as possible.

Rationale three.--A fundamental concept which the child must
hold about "what reading is" is that it is speech written down.
As the child sees his own speech taking the form of writing, he

is developing readiness for both writing and reading. By using the individual child's expressed thoughts, meaningful content related to his background of experience is provided. He is thus able to identify more closely with the written material.

Criterion four.--When the teacher is using small groups, she records the story in the presence of the children, having them arranged so that they can observe the writing.

Rationale four.--The informal grouping around the teacher as she writes from the dictation of one child after another gives all children a feeling of participation in the total experience of the group.

Criterion five.--As the teacher writes, she takes opportunity to call attention to letter formation, relationship of beginning sounds to the symbols used, repetition of sound and symbol in many situations, capitalization and punctuation, and sentence sense.

Rationale five.--The natural way for a child to understand "what reading really is" is to observe the recording of his own speech with the letters of the alphabet. Teaching language skills with reference to an actual meaningful task is an effective procedure.

Criterion six.--The teacher and children carry on informal discussions which relate to the problem of helping them understand that what they say is being symbolized with the letters of the

alphabet. (What they have represented in painting and drawing and said orally can be symbolized in conventional written form and read.)

Rationale six.—When the teacher has insight into and understanding of the reasons and procedures underlying a system of notation (in this case, a conventional written language system), his ability to make use of the system is enhanced.

Criterion seven.—The teacher binds the productions of small groups into books that can be used in follow-up activities in the classroom. The teacher may have the same group involved in such activities as recalling what was recorded on a previous day, recognition of letters, recognition of words, matching of words that are alike, or suggesting a new story. One group of children might read books which other groups developed.

Rationale seven.—Interest in learning to write and read is stimulated by the use of materials produced within the classroom. Reading books authored by themselves and others motivates the child to try to achieve competence in reading beyond normal expectations. As the teacher and children work with reading material which has been produced in the classroom, there is increased interest in analyzing the skills involved in producing a book. The appreciation and skills derived from these activities help children to move with enthusiasm into the reading of books authored by other people.

Criterion eight.—As soon as the teacher is aware that a few children can copy simple words, she helps them to write what they call their own stories. These are usually such stories as might accompany a self-portrait where the teacher writes the word "see" on the chalkboard and to this the child adds his own name. To this kind of activity the teacher adds such expressions as "this is" or "look at my."

Rationale eight.—Children who are helped to move into writing on their own at an early age are developing a balance in communication skills which are desirable for better understanding of our language and its use in daily life. Simple beginnings in writing in the early part of the first grade are challenging and interesting to children. A basic objective of language instruction is to help the child to recognize and capitalize upon the natural interrelatedness of language. In this respect, one aim which the teacher has in mind is that one by which all of the children will begin writing on their own.

Criterion nine.—A variety of independent activities (using crayon, pencil, and paint) is open to the child during the time in which he is not directly involved in individual or small group sessions with the teacher. These pupil products may serve as the bases for total class experiences in language. The child's interpretation of his independent work is recorded by the teacher for the whole class to see. In this way, provision is made for an

additional experience from which the class is able to see how
thoughts are recorded in conventional symbols. Instruction in
skills appropriate and necessary to the task at hand, plus further
discussion of the purposes of the system of notation can be
carried on in this type of situation.

Rationale nine.--Most children seek activities such as paint-
ing, crayon sketching, and dramatizing because they have experi-
enced some success in using these media. Young children are able
to express their ideas more freely through such activities as
these than through writing since these activities place fewer
restrictions on ideas and vocabulary. The individual child sees
a clearer purpose for his independent work when his own product
is used for instructional purposes.

Criterion ten.--The teacher develops a simple routine for
guiding and utilizing children's independent activity productions.
This routine might include:

a. Procedures for selecting and distributing materials.

b. Procedures for displaying or storing products.

c. Procedures for presenting the material and/or sharing
experiences.

Rationale ten.--The establishment of a simple routine pro-
cedure allows the teacher and children to plan for an extended
period of time. In this manner children can better understand

the interrelatedness of language activities that are carried on

on different days; for instance, writing to reading and speaking

to writing. The routines necessary for this type of organization

give the children the security that comes from knowing what comes

next.

Criterion eleven.--All of the activities and procedures to

this point have been aimed at providing the background and motiva-

tion for the individual child to attempt his first independent

story. The teacher sets the atmosphere which will encourage in-

dividual children to make a self-commitment to write on their own.

She is constantly alert to the emergence of such a development in

each child.

Rationale eleven.--There is a period of maturation when the

child is physically, socially, and mentally ready to write. This

stage of development is unique to each child. One of the best

indices of readiness is that which takes place when the child

indicates a desire to write.

Criterion twelve.--When children make the self-commitment, the

role of the teacher changes somewhat from one of motivating chil-

dren to explore and experience to one of serving the individual

needs of children as they emerge. As children bring new experiences

to the class which they wish to express in some visual form, the

teacher encourages them to reproduce the experience.

Before releasing the production to the child, the teacher asks
him to visualize what he is going to write and tell her and the
class the words on which he needs help. Often the teacher might
write on the chalkboard the words the child needs and then use her
own judgment as to whether the words offer opportunities to extend
the learnings which have been developing in the classroom.

Rationale twelve.--One of the major goals of language instruc-
tion is to help all children to become more and more independent in
their ability to communicate by printed or written symbols. This
independence develops over a long period of time, therefore necessi-
tating varying degrees of teacher guidance.

Criterion thirteen.--The teacher may invite other children to
react to an individual's production (a painting, a model, or an
idea for a play) and to indicate what they would write about it.

Rationale thirteen.--Children learn from other children in
this way. A feeling of cooperation is established. Some experience
in making discriminative responses is provided. The elements of
creative thinking are utilized. In addition, the child begins to
sense the great variety of ideas possible as different children
interpret his production.

Criterion fourteen.--As the environment of the classroom is
enriched with children's writing and with resources which the
teacher brings to the classroom, children learn how to rely upon

all the available resources. The teacher is working toward a goal
of independence at the individual level as she thinks through what
is to be done, the difficulties to be anticipated, and the resources
which are available to help the child solve his problem. Among
the many resources available to the children are word lists which
contain basic vocabulary words for their level and lists of words
of general interest.

Rationale fourteen.--Children learn to evaluate and select
appropriate materials when a wide choice is available. Abundant
resources help motivate the child to pursue an interest further or
to develop a new interest.

Criterion fifteen.--As children continue to write independently,
the teacher meets with them in small groups and works with them
on vocabulary development over and beyond the words they select
for their own writing. Children are encouraged to use these ad-
ditional words in many ways. These words are thus habituated by
the children without direct teaching of the words.

Rationale fifteen.--As children have gained some confidence
in writing their own ideas and reading them, they need a systematic
check on their progress toward getting the words which are most
frequently used in their language into their basic vocabulary in
reading.

Criterion sixteen.--When the teacher observes that the child has a firm grasp of a reasonably large sight vocabulary which includes a good number of the basic words for his level, she makes it possible for him to read what someone else has written. This material should be suitable to his level of reading development (for instance, pre-primer if he is a first grader). If he is ready for the material, he should be able to read it quickly and successfully. The teacher provides opportunity for the child to read orally when she thinks it is appropriate for him to do so and when it will serve a useful instructional purpose. Words are not analyzed during these first oral sessions but are simply pronounced by the teacher so that the child can proceed with his reading.

The teacher records words which the child does not recognize at sight. She assumes responsibility for introducing these words which are not recognized at sight through a writing experience.

Rationale sixteen.--To insure continuity in learning and motivation to continue learning, the child needs an opportunity to use his skills and abilities in socially acceptable situations and in meaningful ways. Success in first endeavors tends to inspire the child to further effort and to sustain his interest in the task. Meaning of, facility in using, and recognition of printed words is enhanced when unfamiliar words are learned in a context that is meaningful to the child.

Criterion seventeen.--For children who have had successful
initial reading experiences, the teacher provides more and more
"book-reading" opportunities. The child's interest, needs, and
abilities are prime factors which are considered as the teacher
assists the child to move to higher levels of independence in
reading. The child is encouraged to read for a variety of purposes.

Rationale seventeen.--The child needs the sense of achievement
which comes as a result of increased independence in reading. He
can recognize the pattern of his progress and realistically adjust
his aspiration level at any given point. As the child branches
out into many types and kinds of reading experiences, he begins to
recognize his potential for greater independence in reading and
the communication arts in general.

Project Evaluation

A "Reading Study Project Evaluation Questionnaire" was ad-
ministered to all teachers in the study at the culmination of the
project. Appendix B consists of the six parts of the questionnaire
and should be consulted as needed to clarify the discussion which
follows.

Analysis of Project Evaluation

Selection and introduction to study.--An over-all composite
mean of 4.36 indicates that teachers felt that this aspect of

project was well above average. The small standard deviation of
.44 indicates close agreement on this matter among the teachers.
Teachers rated three items as excellent and three others as good.
All but one item received a 4.0 or better mean rating.

The item (I, 4) dealing with written material yields an
evaluation, in part, of the description and analysis of the
approaches. The mean rating of 4.56 places this item in the
"excellent, exceptional in all respects" category.

In-service meetings.--These eight items received mean ratings
ranging from average to excellent with an over-all mean rating
of 4.22 placing this aspect in the good to excellent range.

Teacher feeling of freedom to participate actively in dis-
cussions and leadership provided in the in-service meetings re-
ceived ratings of "excellent, exceptional in all respects."
Seven of the eight items received mean ratings of 4.12 or better.
Item 8 was the only item falling below the "good" category. This
item referred to the sufficiency of help given toward making the
teacher feel comfortable and secure in carrying out his approach
to the teaching of reading. This item and item 6, which received
a 4.50 mean rating, are further evaluations of the description of
the approach.

Implementation of the approach.--The over-all composite mean
rating for this aspect was 3.83 (above average). Seven of the ten

items also received above average mean ratings. The other three items received mean ratings which placed them in the average category.

Items 1 and 9 should be compared for some indication of teacher growth in insight into the Language Experience Approach as a result of implementation of this theoretical approach. Significant growth in insight did occur as measured by the difference between the ratings of 3.31 at the beginning of the implementation period and 4.37 at the end of the period.

Communications and mechanics.—This section received the second highest over-all mean rating (4.33) of any aspect of the study. None of the items received less than an above average rating and one item received a rating of excellent.

Testing.—This section received an above average rating but was the lowest rated of the six sections. All individual items received average or better ratings.

Teacher instruments.—A 3.87 over-all mean rating placed this section in the above average category. All of the items received above average ratings.

Summary

All major sections received over-all mean ratings of above average. Of the thirty-eight items in these six sections, six were rated excellent; twenty-six were rated above average; six

received average ratings. The highest rating was 4.87 (section I, item 6), and the lowest was 2.69 (section III, item 4). No item received either a fair or poor mean rating. Generally speaking, these teachers rated all aspects of the study above average.

Evaluation of the Language Experience Approach

A second part of the project evaluation consisted of an instrument requiring teachers to rate nine elements of the Language Experience Approach. Appendix T presents these elements and the mean ratings given by these teachers.

Seven of the nine items received excellent mean ratings. Three of the four sub-items in item 6 received an excellent rating. Item 5 and one sub-item in item 6 received above average ratings.

Almost perfect (5.0) mean ratings were given items 1 (4.94), 7 (4.94), and 8 (4.96). These three items deal with "the concept that as a basis of reading the child should gain the feeling that his own ideas are worthy of expression and his own language is a vehicle for communication," "activities, experiences and devices which provide for interaction . . .," and developing skills meaningfully from the child's own language.

These teachers feel that the elements of the Language Experience Approach are practical, workable, and significant to an excellent degree in most respects. This could be accepted as a further validation of the usefulness of the operational definitions and the in-service program provided for these teachers.

Teacher Approaches

As has already been discussed, teacher approaches have been
primarily determined through data obtained from an instrument
dealing with teaching approach administered twice to each teacher.

Table XII has been designed to indicate teacher approaches in
terms of consistency index scores. Each of the five sub-groups
appears in this table. Teacher entries follow the pattern already
established; for instance, highest consistency for the experi-
mental period was exhibited by the first teacher listed for each
sub-group.

It may be quickly noted that the three teachers in sub-group
VI taught an approach best characterized as an individualized
approach during the control period. These same teachers switched
to the theoretical Language Experience Approach during the experi-
mental period.

Sub-group VII consisting of two teachers employed their ver-
sion of the basic approach during the control period. They im-
plemented the theoretical Language Experience Approach during
the experimental period.

The single teacher in sub-group VIII switched from a mixture
of approaches during the control period to the theoretical
Language Experience Approach during the experimental period.

Sub-group IX consists of only one teacher. This case is
unusual since the teacher taught a version of the basic approach
during the control period. She, however, continued to teach a very

TABLE XII

ANALYSIS OF APPROACHES EMPLOYED
BY TEACHERS IN LANGUAGE
EXPERIENCE GROUP

Sub-Group	Teacher Number	Consistency Index Score: Control Period	Consistency Index Score: Experimental Period
VI	15	442 10 I(LE)	532 12 LE(I)
VI	7	542 11 I(LE)	552 11 LE(I)
VI	4	334 10 I(LE)	442 10 LE(I)
VII	5	432 11 B(I)	432 11 LE(I)
VII	52	433 10 B	543 10 LE(I)
VIII	47	554 8 ILE	533 11 LE
IX	33	433 10 B	444 8 B
X	8	331 11 LE(I)	531 13 LE(I)
X	6	532 12 LE(I)	532 12 LE(I)
X	48	543 10 LE(I)	533 11 LE
X	14	544 9 LE	543 10 LE(I)
X	34	443 9 LE(I)	543 10 LE(I)

inconsistent, though identifiable, basic approach during the ex-
perimental period. This case is unique among the fifty-nine
in the study since all of the other teachers did, in fact, employ
during the experimental period the theoretical approach which they
had chosen.

The five teachers in sub-group X employed their own version of the language experience approach during the control period. They implemented the theoretical Language Experience Approach during the experimental period.

Another method of analyzing changes in approaches between the two periods is presented in Table XIII. The same procedure as explained on page 59 regarding Table III was utilized.

TABLE XIII

TEACHER APPROACH DIFFERENCES: EXPERIMENTAL PERIOD
VERSUS CONTROL PERIOD, LANGUAGE EXPERIENCE GROUP

Group or Sub-Group	MnD			Significance Ratio			Level of Significance		
	B	I	LE	B	I	LE	B	I	LE
VI	- 2.00	- 2.67	7.33	- .528	- .481	2.571	...	...	...
VII	-21.50	1.50	23.00	-2.529	+ .176	+3.833	...	...	...
VIII	-17.00	-17.00	4.00	...	...	...	Yes	Yes	No
IX	2.00	15.00	17.00	...	...	...	No	Yes	Yes
X	- 3.00	- 3.00	5.20	-1.11	-1.42	1.26	...	...	...
L. E.	- 6.58	- 1.83	9.58	-2.26	- .654	3.41	5%	...	1%

The three sub-groups with more than one teacher in them (VI, VII, and X) do not yield a significant difference in approaches between the two periods. The two single teacher sub-groups indicate differences as noted by inspection only. The approach group as a whole (Language Experience Group) yields differences which may be considered significant. For the total group, it appears that a definite shift away from elements of the basic approach and a shift toward the language experience approach took place when teachers changed from their own approaches to the theoretical Language Experience Approach.

Consequences of Implementing the Language Experience Approach

Tests of significance of difference between means achieved during the two periods in terms of various measures constitute the major data for reporting consequences relating to pupil behavior.

Achievement in Reading

Appendix U summarizes the treatment of achievement score data by classroom groups, sub-groups, and the total group.

No level of significance is reported for sub-groups VI, VII, VIII, or X. A 0.1 per cent level of significance is reported for sub-group IX. This difference favors the control period when the teacher was implementing her own version of the basic approach.

However, since she continued to implement a version of the basic approach during the experimental period, this significant difference indicates little regarding the theoretical Language Experience Approach.

When all teachers are considered as one group, a difference in achievement of 2.5 months of achievement is significant at the 1.0 per cent level and favors the control period.

It should be noted that the mean gain in achievement for the eight-month period was 12.7 months or nearly one year and three months of achievement gain. Differences were significant in six of the twelve cases in the total group, with four favoring the control period and two favoring the experimental period.

Attitude Toward Reading

Appendix V summarizes these data. Not a single individual group, sub-group, nor the total group indicate a difference that is significant. A mean of only nine points of total gain for the entire period indicates that attitude remained rather stable, starting at a rather high mean level and moving still higher.

Personal/Social Adjustment

Appendix W summarizes these data. Sub-groups VI and X yielded differences that were significant and favored the experimental period. The other groups showed no significant difference. When taken as a whole group, a difference of 9.5 points is significant at the 0.1 per cent level and favors the experimental

period. Three of the twelve classroom groups yielded significant differences, one in sub-group VI and two in sub-group X. These differences also favored the experimental period.

Relationships of Measures

Achievement and attitude.--Appendix X presents a correlation matrix of selected variables. Correlation ratios for achievement and attitude are shown for each testing period. Those ratios are as follows: test one, .30; test two, .39; and test three, .28. These ratios are all positive and statistically significant.

Achievement and personal/social adjustment.--Correlation ratios for the three test periods are as follows: .77, .65, and .68. These ratios are all statistically significant and positive.

Attitude and personal/social adjustment.--Correlation ratios for the three test periods are as follows: .34, .39, and .42. These ratios are all statistically significant and positive.

Other correlations.--Appendix X presents correlation ratios for fourteen selected variables and three testing periods.

Summary

Summary statements are made in terms of the hypotheses of the study (see pages 12 and 13) as they relate to the Language Experience Approach.

Operational Definition

A Language Experience Approach to the teaching of reading has
been analyzed and described in the form of operational definitions
which can be used by classroom teachers as a guide to implementa-
tion.

In-Service Education

In-service education programs designed to assist teachers
prepare for implementation of the Language Experience Approach
were valuable to the teachers involved.

Teacher Approaches

Individual teacher approaches to the teaching of reading
are significantly different from the theoretical Language Experi-
ence Approach (in terms of one or more of the sets of elements
from the three approaches) for the total Language Experience Group
and for sub-groups VIII and IX. (These two sub-groups consisted
of only one teacher each, and significance is assigned on the basis
of inspection of data, not statistically.) The null hypothesis
that there is no difference must be accepted for sub-groups VI,
VII, and X.

However, when consistency index scores are consulted, this
analysis would indicate that there is a difference in the cases
of sub-groups VI and VII. Sub-group X shows no difference when
this method is applied. All things considered, it would appear

that most of these teachers did not change their approaches significantly, but did change enough to yield contrasting approach consistency index scores in the cases of sub-groups VI, VII, and VIII. The significance reported for the total group simply indicates that a more consistent implementation of the theoretical Language Experience Approach was employed during the experimental period.

Language Experience Approach
Evaluation

Teachers who implemented the theoretical Language Experience Approach rated the various elements of the approach positively in terms of workability, practicality, and significance.

Consequences: Achievement

No significant difference is reported for sub-groups VI, VII, VIII, or X.

A difference (MnD) in months gained of 10.1 months of reading achievement for sub-group IX (one teacher only in this group) is significant at the 0.1 per cent level. This difference favors the control period (teacher's own approach best characterized as a basic approach). This teacher was the only teacher who did not implement the theoretical Language Experience Approach as determined by consistency index scores during the experimental period. Thus, the difference indicates very little with regard to the theoretical Language Experience Approach.

All three classroom groups in sub-group VI yielded significant differences at the 1.0 per cent or better level of significance. However, two favored the control period (approaches characterized as individualized approaches) and one favored the experimental period (the theoretical Language Experience Approach).

One of the two classroom groups in sub-group VII yielded a significant difference. This difference favored the control period (approach best characterized as a basic approach). This difference was significant at the 0.1 per cent level.

One classroom group of the five in sub-group X yielded a significant difference (0.1 per cent level). This difference favored the experimental period (theoretical Language Experience Approach). The control period in this case was used to implement a version of the language experience approach.

Consequences: Attitude

No significant differences are indicated for any of the classroom groups, sub-groups, or the total group.

Consequences: Personal/Social Adjustment

Differences are significant for sub-groups VI and X and favor the experimental period (theoretical Language Experience Approach). The same is true for the total group.

No significance is reported for sub-groups VII, VIII, and IX, or nine of the twelve teacher classroom groups.

One teacher classroom group in sub-group VI yielded a difference significant at the 0.1 per cent level favoring the experimental period. Two classroom groups in sub-group X yielded differences significant at the 1.0 per cent level favoring the experimental period.

Relationships

Statistically significant positive relationships exist between achievement and attitude, achievement and personal/social adjustment and attitude and personal/social adjustment.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Findings have been summarized at the end of each of the
three chapters dealing with the three approaches. These findings
are stated with reference to the original hypotheses of the
study. In addition, many of the appendices summarize statistical
findings.

Conclusions

1. Three different approaches to the teaching of reading
have been identified, analyzed, and described in the form of
operational definitions which can be used by classroom teachers
as a guide to implementation. These approaches are the Basic,
the Individualized, and the Language Experience.

2. In-service education programs designed to assist teachers
prepare for implementation of any one of these approaches were
valuable to the teachers involved.

3. Teachers generally employed their own version of one
of the three described approaches, but some employed a mixture
of the elements of the three approaches, when given the oppor-
tunity to employ whatever teaching approach they wished during
the in-service phase.

4. As a result of a study of the description and operational definitions of a particular approach chosen from among the three approaches, teachers were generally able to implement to some acceptable degree of consistency any one of the three approaches.

5. After study and experimental implementation, teachers ranked the elements of the approach they chose as workable, practical, and significant. They, therefore, ranked the definitions and analysis of each of the three approaches as educationally sound and useful to the classroom teacher.

6. With regard to all three aspects of pupil behavior changes as measured by the three instruments, it must be concluded that in most instances the differences calculated for classroom groups did not constitute significant differences. (Appendix Y has been designed to show the per cent of cases with differences favoring the control period, the per cent of cases with differences favoring the experimental period, and the per cent of cases in which there was no significance of differences.) However, the following conclusions regarding certain tendencies are useful:

a. Individual teacher approaches implemented during the fall (control period) in which teachers used their own versions of all three theoretical approaches, as well as a mixture of approaches, tend to provide for greater pupil gain in achievement than was achieved by pupils when their teachers implemented any one of the three theoretical approaches.

b. Gains in pupil attitude tend to remain stable with no tendency to favor either the individual teacher versions (control period approaches) or the three theoretical approaches.

c. The three theoretical approaches implemented during the spring (experimental period) tend to provide for greater pupil gain in personal/social growth than was gained by pupils when their teachers implemented their own versions of one of the three theoretical approaches or a mixture of approaches.

7. When teachers take part in a project such as this one, pupils may be expected to exceed expectancies in achievement gains. Expected gains in achievement at the norm over the eight-month period of the study was eight to eight and one-half months. Pupils in the Basic Group achieved 12.5 months; in the Individualized Group, 12.9 months; and in the Language Experience Group, 12.9 months. These approaches and combinations of these approaches may produce better than average results in pupil achievement when implemented under conditions such as those employed in this project.

8. No clear-cut superiority of any one of the approaches (when compared with any one of the other two approaches) is indicated by the findings of this study. When individual teachers employed their version of the basic approach (sub-group III) versus the theoretical Individualized Approach, a difference in mean achievement gains favored the basic approach. A difference in personal/social growth, on the other hand, favored the theoretical Individualized. It should be noted, however, that the

pupils in this sub-group achieved the greatest over-all achievement of any sub-group in the study. This over-all mean gain was 13.7 months when only 8.0 to 8.5 months was the expected amount of gain.

A similar result for sub-group V (a mixture versus theoretical Individualized) occurred. The over-all mean gain in this case, however, was 11.7 months. The only sub-groups yielding differences that were significant for two of the three measures, and were also sub-groups that contained contrasting approaches, were sub-groups III and V. Appendix Y indicates other situations that occurred with regard to significance of difference of measures, as well as per cent of classroom groups achieving significant differences.

9. There are positive relationships between pupil achievement scores and pupil attitude inventory scores; pupil achievement scores and pupil personal/social adjustment scores; and pupil attitude inventory scores and pupil personal/social adjustment scores. The degree of relationship is greater between achievement and personal/social adjustment (from .50 to .77) than for the other two pairs of relationships (range for both about .20 to .40).

Recommendations

1. School districts should consider utilizing the descriptions of the approaches as bases for in-service education in the area of reading instruction.

2. Teachers should be encouraged to study the three approaches with a view of implementing one or more of them in their own classrooms.

3. Instruments should be developed which measure more accurately the reading achievement of pupils, pupils' attitudes toward reading, and pupil self-concepts.

4. Variations of the three approaches should be developed, defined and then implemented with a view of further improvement of teaching effectiveness.

5. The Language Experience Approach should be implemented at the kindergarten level since it seems most compatible with present kindergarten technique.

6. Each of the approaches should be implemented by teachers of various types of special or unusual groups; for instance, mentally retarded, emotionally disturbed, or "gifted."

APPENDIX A

An Inventory of Reading Attitude
Devised for the San Diego County
Department of Education
Reading Study Project

Name_____ Grade_____ Boy Girl
    Last   First   Middle

School_____ Teacher_____

Your Age_____   Date of Test_____
                              Mo.   Da.   Yr.

TO BOYS AND GIRLS:

This booklet has some questions about reading which can be answered
YES or NO.

Your answers will show what you usually think about reading. After
each question is read to you, circle your answer.

INSTRUCTIONS TO PUPILS

Draw a circle around the word YES or NO, whichever shows your answer.

    SAMPLE I - Do you like to read?   Yes No

If you like to read, you should have drawn a circle around the
word YES in sample I; if you do not like to read, you should have
drawn a circle around the word NO.

    SAMPLE II - Do you read as well as   Yes No
            you would like to?

If you read as well as you would like to, you should have drawn a
circle around the word YES in Sample II; if not, you should have
drawn a circle around the word NO.

1. Do you like the time in school when the children read from readers?   Yes   No

2. Do you like picture books?   Yes   No

3. Do you like to read before you go to bed?   Yes   No

4. Do you dislike reading directions for making things?   Yes   No

5. Do you like to read after you have finished your other work?   Yes   No

6. Do you like to read to other people at home?   Yes   No

7. Do you like to read stories that other children are reading?   Yes   No

8. Are signs and advertisements that you see beside the highway fun to read?   Yes   No

9. Is reading helpful to you in your subjects at school? Yes   No

10. Do you like to read magazines?   Yes   No

11. Would you like to read most of the books that we have in our school?   Yes   No

12. Do you like to make up stories?   Yes   No

13. Do you like to talk about stories that you have read? Yes   No

14. Do you enjoy receiving books as presents?   Yes   No

15. Does the reading period at school seem too long?   Yes   No

16. Is reading helpful to you in answering questions about things that you are interested in?   Yes   No

17. Is learning new words fun?   Yes   No

18. Do you like to help other children with their reading? Yes   No

19. Do you find that reading about real people is dull?   Yes   No

20. Is reading to your parents fun for you?   Yes   No

21. Do some stories that you read at school make you happy or sad or angry or excited?   Yes   No

22. Do you like to read the story of a real person's life? Yes   No

23. Do you think that you are a poor reader?   Yes   No

24. Do you have a library card?   Yes   No

25. Is looking up things in books at school too hard?   Yes   No

26. Is reading poetry a waste of time for you?   Yes   No

27. Are you interested in what other people read?   Yes   No

28. Do you think that you have too many books to read   Yes   No
    at school?

29. Are adventure stories interesting to you?   Yes   No

30. Do you feel good when you finish a reading job   Yes   No
    that your teacher asks you to do?

31. Do you wish that you could spend less time on   Yes   No
    reading in school?

32. Are there many school books that you like to read?   Yes   No

33. Do you like to trade books with your friends?   Yes   No

34. Would you like to own a lot of books?   Yes   No

35. Do you like to read when your mother and dad are   Yes   No
    reading?

36. Do you think that finding new words is a waste of   Yes   No
    time?

37. Is reading your favorite subject at school?   Yes   No

38. Would you like to read at the library?   Yes   No

39. If you could do anything you wanted to do would   Yes   No
    reading be one of the things you would choose to do?

40. Do you like to play word games?   Yes   No

41. Do you think that you are a good reader for your age? Yes   No

42. Do you like to read catalogues?   Yes   No

43. Do you think that people who read a whole lot   Yes   No
    are wasting their time?

44. Do you like to read when you don't have anything   Yes   No
    to do?

45. Do your parents think that you are a poor reader?   Yes   No

46. Do you think that most things are more fun than reading?   Yes   No

47. Do you like to read aloud for other children at school?   Yes   No

48. Are books with a lot of facts in them interesting to you?   Yes   No

49. Are you interested in reading stories written by other children in your room?   Yes   No

50. Do you hate the reading period at school?   Yes   No

51. Do you hate everything about reading at home or at school?   Yes   No

52. Do you like to bring books to school to read?   Yes   No

53. At school do you read only when you are made to read?   Yes   No

54. Do you like to read Bible stories?   Yes   No

55. Do you think reading the TV schedule is a good way to select programs?   Yes   No

56. Do you keep books to read by your bed?   Yes   No

57. Are most books that you read at school not interesting to you?   Yes   No

58. Do you like to read school books?   Yes   No

59. Do you enjoy telling your parents about what you have read?   Yes   No

60. When you get the chance, do you like to read books brought to school by other children?   Yes   No

61. Is it fun to work out new words for yourself?   Yes   No

62. Are most of the things that you read at school uninteresting?   Yes   No

63. Does reading help you to make friends with other children?   Yes   No

64. Do you like to read the comics in the newspaper?   Yes   No

65. Is it fun to read all kinds of books and stories?   Yes   No

66. Do you think reading recipes is fun?   Yes   No

67. Do you find that reading make-believe stories is dull?Yes   No

68. Do you look forward to the time when new books are   Yes   No
    brought to your room at school?

69. Do you think it is a waste of time to read plays?   Yes   No

70. Do you usually understand what you read?   Yes   No

71. Would you rather play than have someone read you   Yes   No
    a good story?

72. Do you like to tell stories?   Yes   No

73. Do you learn about other people through reading   Yes   No
    about them?

74. Do you think it is not too interesting to read   Yes   No
    stories other children have written?

75. Do you like to read the newspaper?   Yes   No

76. Are there lots of good things to read in our school   Yes   No
    room that are not in books?

77. Are books the only thing that you read at school?   Yes   No

78. Do you like to read all kinds of books at school?   Yes   No

79. Is it fun to know what words mean?   Yes   No

80. Do you like to answer questions about things you   Yes   No
    have read?

81. Are you usually glad when a story ends?   Yes   No

82. Do you think it is a waste of time to make rhymes   Yes   No
    with words?

83. Do you think that reading is very helpful in your   Yes   No
    school work?

84. Do you like to talk about books you have read?   Yes   No

85. Does reading make you feel good?   Yes   No

86. Does your teacher think that you are a good reader?   Yes   No

87. Do you think that you are a poor reader?   Yes   No

88. Are you careless with your books at home?   Yes   No

89. Do you think it is all right to throw a book away when you have finished reading it?   Yes   No

90. Do you find that it is dull to read a book the second time?   Yes   No

91. Do you feel that reading time is the best part of the school day?   Yes   No

92. Do you hate to see a movie that you have read about in a book?   Yes   No

93. Do you find it hard to write about what you have read?   Yes   No

94. Would you like to have more books to read?   Yes   No

95. Do you like to read hard books?   Yes   No

96. Do you like to read all the sections of the newspaper?   Yes   No

97. Do you find thick books uninteresting?   Yes   No

98. Do you think that there are many beautiful words in poems?   Yes   No

99. Do you like to read to get information for reports?   Yes   No

100. Would you rather ask someone something than to read about it?   Yes   No

101. Would it bother you to read about other children just like you?   Yes   No

102. Is it fun to read highway signs when you go on a trip?   Yes   No

103. Do you hate to have to use the dictionary to look up new words?   Yes   No

104. Do you like to act out stories you have read in books?   Yes   No

105. Do you like to use encyclopedias?   Yes   No

106. Do you like to read what famous people have said?   Yes   No

107. Does reading certain stories make you act differently?   Yes   No

108. Do you think that it is a waste of time to read just for fun?   Yes   No

109. Do you like to read maps when you take a trip?   Yes   No

110. Do you like to take a favorite book along when you go on a trip?   Yes   No

111. Do you like to read different books by the same author?   Yes   No

112. Do you use book marks to mark your place in a book you are reading?   Yes   No

113. Do you think that book jackets are a waste of paper?   Yes   No

114. Do you like to take reading tests?   Yes   No

APPENDIX B

EVALUATION OF THE READING STUDY PROJECT
BY PARTICIPATING TEACHERS

A "Reading Study Project Evaluation Questionnaire" was ad-
ministered to all teachers in the study at the culmination of the
project. The purpose of this questionnaire was to ascertain the
teachers' judgments concerning the conduct of the study. The data
derived from their responses are presented below in the form of mean
scores and standard deviations for each of the three reading approaches.
A five-point rating scale was used.

Rating Scale

5.00 to 4.51 Excellent, exceptional in all respects

4.50 to 3.51 Good, decidedly above average

3.50 to 2.51 Average, generally satisfactory

2.50 to 1.51 Fair, generally satisfactory but weak

1.50 to 1.00 Poor, of little value

The data below were derived from thirteen teachers in the Basic
Group, thirty-seven teachers in the Individualized Group and sixteen
teachers in the Language Experience Group. Roman numerals designate
major sections of the questionnaire. Arabic numerals designate items
included in the major sections. Means and standard deviations are
reported for major sections as well as the items in each major section.

PROJECT EVALUATION QUESTIONNAIRE

Questionnaire Sections and Items	Basic Teachers		Individual Teachers		Lang. Exper. Teachers	
	Mean	σ	Mean	σ	Mean	σ
I. Your selection and introduction to the study	3.54	.38	4.14	.29	4.36	.44
1. The manner in which your district administration identified you to take part in this study	3.14	1.29	3.81	1.99	3.75	.86
2. The manner in which your district administration informed you of the study	3.43	1.50	4.14	.60	4.00	1.03
3. The first meeting at the County Office Service Center to explain the study	3.79	1.49	4.05	1.00	4.25	.68
4. The written material given to you to help you decide on participation	3.86	1.03	3.95	.88	4.56	.51
5. Your freedom to accept or reject participation in the study	3.07	1.21	4.27	.96	4.75	.58
6. Your freedom in selection of the approach which you desired	3.93	1.77	4.65	.85	4.87	1.13

Questionnaire Sections and Items	Basic Teachers		Individual Teachers		Lang. Exper. Teachers	
	Mean	σ	Mean	σ	Mean	σ
II. In-service meetings	3.78	.24	4.18	.19	4.22	.62
1. Number of in-service meetings in terms of sufficient time for developing your understanding of the approach which you selected	3.57	.94	4.11	.97	4.12	.96
2. Your feeling of freedom to participate actively in discussions	4.29	.95	4.51	.61	4.81	.40
3. Leadership provided in the in-service meetings	3.79	1.19	4.30	.70	4.62	.50
4. The provisions for acquainting you with the materials to be used in your approach	3.57	.51	4.11	.91	4.44	.51
5. Use of consultants	3.64	1.30	3.97	.87	4.12	.62
6. The amount and quality of assistance in helping you understand the criteria and rationale of your selected approach to the teaching of reading	3.71	.61	4.03	.90	4.50	.63
7. The assistance you were given in clarifying your responsibilities in the study	3.86	.95	4.03	.87	4.37	.72

Questionnaire Sections and Items	Basic Teachers		Individual Teachers		Lang. Exper. Teachers	
	Mean	σ	Mean	σ	Mean	σ
8. The sufficiency of the help given toward making you feel comfortable and secure in carrying out your approach to the teaching of reading	3.79	.89	4.38	.86	2.81	.60
III. Implementation of the approach	3.66	.61	4.01	.42	3.83	.66
1. My insight into the approach at the beginning of the implementation period	3.86	.54	3.73	.87	3.31	1.14
2. The interest and support of your district in helping you carry on the approach	4.07	1.07	4.59	.72	4.44	.73
3. Opportunities to share your experiences with other teachers in your building	2.64	.93	3.81	.97	2.81	1.28
4. Opportunities to share your experiences with other teachers in your district	2.57	1.01	3.27	1.24	2.69	.41
5. The parents' attitude about their children being in the study	4.14	.66	4.14	.95	3.87	.96

Questionnaire Sections and Items	Basic Teachers		Individual Teachers		Lang. Exper. Teachers	
	Mean	σ	Mean	σ	Mean	σ
6. The children's feeling about their room being a part of a reading study	4.00	.88	4.46	.69	4.19	.66
7. Availability of materials to carry out your chosen approach	4.29	.83	4.49	.80	4.44	.73
8. Your ability to carry out the spirit of the criteria and rationale of your selected approach	3.64	.74	3.60	.59	3.94	.85
9. Your insight into the approach at the end of the implementation period	3.93	.62	4.03	.60	4.37	.72
10. Your feeling of accomplishment at the end of the study	3.43	.94	3.95	.71	4.25	.85
IV. Communication and mechanics	3.67	.46	4.27	.42	4.33	.74
1. The mechanics of administration of tests and tabulation of results	3.07	1.07	3.62	1.11	3.69	.88
2. The adequacy of information available to you for implementation of your approach	3.71	.61	4.22	.63	4.19	.66

Questionnaire Sections and Items	Basic Teachers		Individual Teachers		Lang. Exper. Teachers	
	Mean	σ	Mean	σ	Mean	σ
3. The adequacy of the liaison person of your district in providing all of the necessary information and materials needed by you to carry out your approach	4.14	.92	4.59	.50	4.25	1.06
4. Your freedom to express ideas and questions of the Reading Study Project Committee	4.07	.73	4.35	.63	4.44	.63
5. Your freedom to express ideas and ask questions of the liaison person	3.36	.74	4.68	.53	4.60	.73
V. Testing	3.19	.54	3.58	.43	3.59	.35
1. Adequacy of testing	3.36	1.22	3.64	.94	3.75	.93
2. Time needed for testing	3.14	1.02	3.73	1.12	3.19	1.28
3. Mechanics of scoring tests	2.86	1.41	3.32	1.25	3.75	1.06
4. Usability of the Inventory of Reading Attitude	2.57	1.16	3.00	1.13	3.25	1.35
5. Adequacy of Student Test Data Record Card	4.00	.88	4.14	.75	4.00	.73

Questionnaire Sections and Items	Basic Teachers		Individual Teachers		Lang. Exper. Teachers	
	Mean	σ	Mean	σ	Mean	σ
VI. Teacher Instruments	3.27	.12	3.63	.39	3.87	.26
1. Teacher Inventory of Approaches to the Teaching of Reading	3.43	1.01	3.84	.73	4.25	.68
2. California Psychological Inventory	3.29	.83	3.84	1.06	3.81	.91
3. Adjective Check List	3.21	.70	3.05	1.00	3.75	.96
4. Observers	3.14	.95	3.78	.92	3.69	.79

APPENDIX C

BASIC APPROACH EVALUATION

Each item for which a mean is reported below was developed
from a significant element of the Basic Approach as described in
the criteria statements. Items were rated in terms of their ap-
propriateness, workability, and significance. The rating scale is:

5.00 to 4.51 Excellent, exceptional in all respects

4.50 to 3.51 Good, decidedly above average

3.50 to 2.51 Average, generally satisfactory

2.50 to 1.51 Fair, generally satisfactory but weak

1.50 to 1.00 Poor, of little value

Elements of the Basic Approach	Mean
(1) The plan for flexible ability grouping for reading instruction	3.62
(2) The use of the teachers' manual as the primary guide for reading instruction	4.08
(3) The plan for placing children in various type groups other than ability groups for reading purposes	2.92
(4) The concept of sequential skill development	4.23
(5) The suggestion to limit the number of ability groups to about three	3.54
(6) The planned steps for reading instruction	4.38

Elements of the Basic Approach	Mean
(7) The step of setting purpose	3.92
(8) The step of introducing vocabulary and skill teaching	4.31
(9) The step of oral reading	3.77
(10) The step of follow-up discussion	4.08
(11) The step of independent activities	4.00
(12) The idea of encouraging and planning for a variety of activities to take place at the same time	3.85

APPENDIX D

TEACHER INVENTORY OF APPROACHES
TO THE TEACHING OF READING

Prepared by Reading
Study Project Committee
Department of Education
San Diego County

Name _____ Approach _____

Grade _____ School District _____

Instructions: Here are 33 statements regarding the teaching of reading as different teachers would approach it. These statements should be read carefully and then judged in terms of their accuracy for describing your approach to the teaching of reading during the period between January 25, 1960, and May 20, 1960 (the implementation phase of the reading study). Your judgment will be indicated by using the following key:

Place a "5" beside the item if it is entirely accurate.
Place a "4" beside the item if it tends to be accurate.
Place a "3" beside the item if it is neither accurate nor inaccurate.
Place a "2" beside the item if it tends to be inaccurate.
Place a "1" beside the item if it is entirely inaccurate.

Please read all 33 statements at least once before you attempt to make final judgments.

____ 1. I provide a systematic program of instruction in reading for my class primarily through the use of a single main source of printed materials.

____ 2. In my class, attention is given equally to reading skills, interests, and attitudes.

____ 3. The basic purpose of reading instruction in my class is to extend use of all the language arts by using each child's thoughts, ideas, and experiences in language activities.

___ 4. My classroom is organized so far as reading instruction is concerned for the production, sharing and reading of graphic and written materials based upon the child's own thoughts, concerns, and ideas.

___ 5. I do most of my direct teaching of reading as pupils discuss with me and their group the story or selection to be read, and as they participate in reading group activities.

___ 6. In my class, the individual pupil receives most of my direct instruction in reading during individual conferences. This direct instruction is based upon the reading selections he has read or is reading on his own.

___ 7. In my class, reading skill development follows naturally from each child's oral and written expression and is therefore dependent upon each child's unique language development rather than upon a pre-determined sequence.

___ 8. In my class, I utilize materials which are in the pupil's language based upon his thoughts and experiences. This material serves as a major source of reading material for himself and other pupils. This serves as a primary means for providing for individual differences in my class.

___ 9. In my class, I feel that the best motivation for reading is stimulated through provision of a wide variety of reading materials which meet the interests and maturational needs of the pupils.

___ 10. I introduce words (new reading vocabulary) to the children as they find a need to use them in their writing and reading of material. Dictionaries, word lists, and other sources of new words are available and the children are encouraged to use them as needs arise.

___ 11. The reading activities of the pupils in my class are based primarily upon many other language experiences, especially oral and written language of the individual pupils.

___ 12. In my class, children are motivated to read by being helped to see the relation of the story or selection to be read to their experiences, and by being helped to acquire the vocabulary and skills necessary for success in each new reading task.

___ 13. I try to provide for individual differences in my class by providing and encouraging the use of a wide range and variety of printed materials. I provide for individual conferences with each pupil in which we discuss his reading problems and his progress. (I am also able to do individual instruction in these conferences.) Group conferences are used for the same purposes when this is appropriate.

___ 14. In my class, provision for individual differences is made mainly through the use of flexible ability groups. This allows me to give attention to the common problems of each of the groups. I can also give attention to individual student's problems as a part of the group instruction.

___ 15. In my class, free reading of library table materials is allowed while other pupils are being instructed in reading groups, or on special days designated for free reading, or when pupils have finished assigned work, or any combination of these possibilities. Free reading time is included to assist children in strengthening their reading skills and for personal enjoyment.

___ 16. I try to provide for and encourage many language activities based upon the self-selected reading material read by individual pupils or by several pupils. Handwriting, spelling, written expression and usage are given attention when they apply to the reading selections which have been chosen by individual pupils.

___ 17. In my class, most reading by children is "free" reading in that the children generally select their own material to read and are encouraged to read this material for purposes apparent to them, one of which is to become a better reader.

___ 18. I believe that motivation for reading in my class is stimulated through the child's realization that his oral language expression based upon his own experiences and thoughts as well as the ideas and thoughts of others can be written and thus read.

___ 19. I have a regular reading period set up to take care of direct teaching of reading and other reading activities. Handwriting, spelling, written expression and usage are taught at another time and are given attention during the reading time when they directly apply to the reading lesson situation.

___ 20. I evaluate pupil progress in my reading program in relation to material he is able to read and his achievement of the skills necessary to read successfully a given level of material.

___ 21. I base my plan for reading instruction upon the oral and written expression and identified needs of the children.

___ 22. I encourage children to use free reading time to read materials prepared by other pupils, books of special interest to them, and materials which will help them develop ideas for their own written productions.

___ 23. Skill development is the primary objective of my reading program.

___ 24. My plan for reading instruction is determined by and follows the reading needs of individual children as they meet reading problems which require my guidance and help.

___ 25. My classroom is organized to facilitate many and varied activities relating to reading. I set up time for individual pupil-conferences, small group reading situations, and provide for silent reading of self-selected materials for individual students.

___ 26. I evaluate children's growth in reading in terms of the quality and quantity of materials read, skills acquired, as well as interests and attitudes developed.

___ 27. I group the pupils in my room in terms of reading ability (generally three groups). I try to gear my instruction in reading to the needs of each of the groups.

___ 28. Reading instruction in my class is designed for the most part to develop the skills and mechanics of the reading process.

___ 29. I evaluate the reading growth of the pupil in terms of his ability to express himself in oral and written form, in terms of his skill in reading, comprehending and interpreting written material of all types.

___ 30. I provide for pupil growth in vocabulary through individual pupil-teacher conferences, encouraging pupils to seek assistance from other pupils in the class, silent reading of a variety of printed materials, group conferences, and through encouraging the use of resource materials (dictionaries, word lists, etc.).

____ 31. I introduce new vocabulary to each reading group prior to their silent reading of a new selection.

____ 32. I base my direct instruction in reading primarily upon material produced by the children themselves. This direct teaching, depending upon the situation, is done through group activities, total class activities, or through sessions with individual pupils.

____ 33. The main purpose of reading instruction in my class is to develop wholesome reading interests and attitudes as well as the development of adequate skills through the child's desire to discover, select, and explore a wide variety of reading materials.

READING ACHIEVEMENT TEST DATA: BASIC GROUP

Teacher Number and Sub-group	Mean T_1 (Months)	Mean T_2 (Months)	Mean T_3 (Months)	Mean of $T_3 - T_1$ (Total Gain: Months)	Mean of Differences (E - C = D): MnD	Standard Error of the Mean: σ M	Significance Ratio: S. R.	Level of Significance (%)
9	63.9	76.9	78.5	14.6	-11.4	2.647	-4.317	0.1
10	56.8	73.9	79.0	22.2	-12.0	2.161	-5.568	0.1
16	35.2	45.4	52.0	16.8	- 2.7	1.840	-1.484	...
17	21.5	30.5	36.0	14.5	- 3.5	.983	-3.543	1.0
18	33.2	28.6	30.3	- 3.1	+ 6.4	1.396	+4.567	0.1
37	21.6	35.5	39.9	18.3	- 9.4	1.670	-5.640	0.1
38	15.0	13.7	24.0	9.0	+11.5	1.690	+6.820	0.1
55	13.6	16.8	20.2	6.6	+ .2	1.720	+ .106	...
57	18.0	25.6	31.1	12.9	- 2.1	1.913	-1.076	...
58	28.9	34.7	40.1	11.2	- .3	1.110	- .274	...
59	57.2	63.1	69.3	12.1	+ .3	2.037	+ .142	...
60	47.4	57.5	66.6	19.2	- 1.0	1.834	- .545	...
39 (II)	76.2	81.2	85.0	8.8	- 1.1	1.860	- .651	...
I	35.3	42.6	48.2	12.9	- 1.7	.848	-2.566	...
All	38.7	45.8	51.2	12.5	- 1.6	.613	-2.641	1.0

PUPIL ATTITUDE DATA: BASIC GROUP

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences (E - C = D): MmD	Standard Error of the Mean: σ M	Significance Ratio: S. R.	Level of Significance (%)
9	93	85	94	1	+15.4	12.484	+1.236	...
10	89	92	100	11	+ 6.1	3.902	+1.571	...
16	92	96	101	9	+ 1.7	5.071	+ .334	...
17	90	89	85	- 5	- 3.5	4.718	- .752	...
18	84	89	81	- 3	-12.7	4.557	-2.777	1.0
37	81	83	83	2	- .4	4.730	- .091	...
38	76	80	80	4	- 4.9	4.930	- .990	...
55	90	92	99	9	+ 5.3	4.969	+1.061	...
57	80	76	83	3	+10.8	5.892	+1.827	...
58	80	81	87	7	- .3	1.111	- .274	...
59	90	93	93	3	- 2.1	2.977	- .715	...
60	85	96	103	18	- 2.7	3.293	- .820	...
39 (II)	89	88	91	2	+2.8	4.250	+ .659	...
I	86	88	90	4	+ .1	1.482	+ .076	...
All	86	88	90	4	+ .3	1.399	+ .237	...

PERSONAL/SOCIAL ADJUSTMENT DATA: BASIC GROUP

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences (E - C = D): MnD	Standard Error of the mean: σ_M	Significance Ratio: S.R.	Level of Significance (%)
9	114	109	114	0	+ 9.6	7.519	+1.282	...
10	115	114	130	15	+17.2	4.168	+4.133	0.1
16	73	75	78	5	+ 1.0	3.023	+ .343	...
17	76	73	75	- 1	+ 4.9	3.954	+1.248	...
18	101	101	102	1	+ 1.0	4.181	+ .224	...
37	66	66	69	3	+ 4.1	4.510	+ .898	...
38	69	69	67	- 2	+ 1.8	4.660	+ .378	...
55	79	75	76	- 3	+ 5.1	8.161	+ .624	...
57	70	63	61	- 9	+ 5.4	6.027	+ .898	...
58	64	68	67	3	- 5.8	4.880	-1.180	...
59	101	103	107	6	+ 2.7	1.994	+1.359	...
60	103	109	120	17	+ 3.7	5.934	+ .615	...
39 (II)	112	114	124	12	+ 7.1	8.570	+ .826	...
I	87	87	90	3	+ 4.2	1.334	+3.136	1.0
All	87	89	93	6	+ 4.4	1.319	+3.351	0.1

CORRELATION MATRIX: BASIC GROUP*

Variable	(1) Intelligence Quotient	(2) Vocabulary T_1	(3) Comprehension T_1	(4) Total Achievement T_1	(5) Attitude T_1	(6) Personal T_1	(7) Social T_1	(8) Total Personality T_1	(9) Total Achievement T_2	(10) Attitude T_2	(11) Total Personality T_2	(12) Total Achievement T_3	(13) Attitude T_3	(14) Total Personality T_3
(2)	37	.	.	.	.	.	.	.	.	.	.	.	.	.
(3)	38	93	.	.	.	.	.	.	.	.	.	.	.	.
(4)	40	97	98	.	.	.	.	.	.	.	.	.	.	.
(5)	11	17	16	19	.	.	.	.	.	.	.	.	.	.
(6)	27	55	55	58	22	.	.	.	.	.	.	.	.	.
(7)	23	59	59	62	33	83	.	.	.	.	.	.	.	.
(8)	24	61	62	65	28	92	95	.	.	.	.	.	.	.
(9)	42	91	91	94	21	57	59	61	.	.	.	.	.	.
(10)	11	24	23	25	59	25	35	32	21	.	.	.	.	.
(11)	19	46	48	51	27	72	73	76	49	33	.	.	.	.
(12)	40	88	89	92	20	55	57	59	97	22	48	.	.	.
(13)	19	20	20	21	55	28	35	33	24	56	33	25	.	.
(14)	22	62	63	66	26	74	75	78	64	31	76	64	31	.

*Diagonal elements and decimals are omitted.

APPENDIX I

INDIVIDUALIZED APPROACH EVALUATION

Each item for which a mean is reported below was developed from a significant element of the Individualized Approach as described in the criteria statements. Items were rated in terms of their appropriateness, workability, and significance. The rating scale is:

5.00 to 4.51 Excellent, exceptional in all respects

4.50 to 3.51 Good, decidedly above average

3.50 to 2.51 Average, generally satisfactory

2.50 to 1.51 Fair, generally satisfactory but weak

1.50 to 1.00 Poor, of little value

Elements of the Individualized Approach	Mean
(1) The suggestion to make available for pupils a wide range of varied reading materials	4.92
(2) The plan for introducing and instructing children in the techniques necessary for the appropriate selection of reading matter	4.27
(3) The plan for placing children in various type short-term groups other than ability groups for reading purposes	3.86
(4) The idea of encouraging and planning for a variety of activities to take place at the same time	4.05

Elements of the Individualized Approach	Mean
(5) The concept of complete freedom of children to select their own reading material	3.92
(6) The concept of allowing pupils to proceed through reading material at their own rate	4.78
(7) The idea of the individual conference as the primary means of direct reading instruction	4.08
(8) The plan for record keeping with the pupils	4.11
(9) The suggestions for creative independent activities	3.95
(10) The idea of encouraging sharing by all pupils the things they have read	4.14

READING ACHIEVEMENT TEST DATA: INDIVIDUALIZED GROUP
SUB-GROUP III

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences (E - C = D): MnD	Standard Error of the Mean: σ_M	Significance Ratio: S. R.	Level of Significance (%)
19	27.8	34.3	41.8	14.0	+1.1	2.440	+ .463	...
22	50.8	64.5	70.3	19.5	-7.9	2.090	-3.790	0.1
24	13.8	13.6	22.3	8.5	+8.9	1.951	+4.577	0.1
51	57.9	67.9	74.3	16.4	-3.5	2.360	-1.500	...
25	53.5	65.4	70.1	16.6	-7.1	2.403	-2.970	1.0
23	22.5	33.9	37.2	14.7	-8.1	2.330	-3.489	1.0
3	33.9	38.3	42.6	8.7	- .1	1.195	- .042	...
21	54.9	63.1	68.4	13.5	-2.9	2.640	-1.091	...
30	26.8	39.6	43.4	16.6	-8.9	.968	-9.191	0.1
1	38.3	46.5	51.7	13.4	-3.0	1.850	-1.600	...
35	36.7	44.8	49.7	13.0	-3.3	1.790	-1.816	...
36	24.0	30.0	32.7	8.7	-3.2	1.484	-2.144	...
53	26.6	33.6	37.6	11.0	-3.0	1.446	-2.041	...
65	59.2	67.0	70.3	11.1	-4.4	2.450	-1.793	...
28	44.9	56.7	60.4	15.5	-8.1	1.777	-4.565	0.1
62	47.6	54.3	61.6	14.0	+ .7	2.171	+ .300	...
64	43.4	49.7	56.0	12.6	+ .04	1.716	+ .025	...
63	31.2	39.8	49.0	17.8	+ .6	1.790	+ .344	...
40	14.5	19.3	24.4	9.9	+ .3	2.693	+ .099	...
III	38.6	47.1	52.3	13.7	-3.2	.496	-6.450	0.1

APPENDIX K

READING ACHIEVEMENT TEST DATA: INDIVIDUALIZED GROUP
SUB-GROUP IV

Teachers Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences (E - C = D): MnD	Standard Error of the Mean: σ_M	Significance Ratio: S. R.	Level of Significance (%)
20	38.5	52.3	56.9	18.4	-9.3	1.570	-5.920	0.1
50	36.6	43.2	48.6	12.0	-1.1	1.270	- .827	...
13	49.1	54.6	57.3	8.2	-2.7	2.160	-1.270	...
45	61.3	66.4	71.6	10.3	- .1	1.038	- .046	...
41	49.0	57.6	62.2	13.2	-3.9	1.903	-2.029	...
2	80.7	85.3	87.1	6.4	-2.8	1.832	-1.541	...
29	41.7	43.4	49.5	7.8	+4.5	3.005	+1.485	...
44	68.2	71.5	78.1	9.9	+3.3	1.538	+2.113	...
42	47.8	61.4	65.1	17.3	-9.9	2.448	-4.058	0.1
54	25.6	32.9	36.5	10.9	-3.8	2.160	-1.736	...
IV	51.2	58.7	63.2	12.0	-3.0	.697	-4.271	0.1

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APPENDIX L

READING ACHIEVEMENT TEST DATA: INDIVIDUALIZED GROUP
SUB-GROUP V

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences (E - C = D): MnD	Standard Error of the Mean: σ_M	Significance Ratio: S. R.	Level of Significance (%)
46	71.4	76.0	80.0	8.6	−1.0	1.930	− .539	...
11	21.7	31.8	35.7	14.0	−6.3	1.530	−4.110	0.1
27	27.5	28.5	31.4	3.9	+2.0	1.807	+1.107	...
43	48.3	57.6	61.9	13.6	−5.1	2.535	−2.010	...
26	26.1	37.6	43.1	17.0	−6.1	1.777	−3.430	1.0
V	40.6	48.2	52.3	11.7	−3.6	.919	−3.862	1.0
All Ind.	42.6	50.6	55.5	12.9	−3.2	.370	−8.602	0.1

APPENDIX M

PUPIL ATTITUDE DATA: INDIVIDUALIZED GROUP
SUB-GROUP III

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences $(E - C = D)$: MnD	Standard Error of the Mean: σ_M	Significance Ratio: S. R.	Level of Significance (%)
19	95	78	85	-10	+24.1	6.450	+3.740	1.0
22	91	96	104	13	+ 1.7	4.530	+ .364	...
24	69	78	79	10	- 8.1	6.681	-1.217	...
51	97	96	98	1	+ 2.7	3.300	+ .809	...
25	91	98	98	7	- 6.6	4.757	-1.377	...
29	87	97	99	12	- 8.2	3.390	-2.413	...
3	98	100	109	11	+ 6.6	4.516	+1.468	...
21	97	99	103	6	+ 2.9	4.320	+ .671	...
30	81	87	85	4	- 8.4	3.564	-2.351	...
1	90	94	95	5	- 3.5	3.770	- .923	...
35	91	95	95	4	- 3.8	4.349	- .872	...
36	77	84	91	14	- .5	4.158	- .109	...
53	82	88	81	- 1	-13.7	5.449	-2.517	...
65	101	101	103	2	+ 2.9	1.984	+1.458	...
28	85	87	94	9	+ 5.1	3.891	+1.306	...
62	99	102	104	5	- 2.0	1.966	-1.039	...
64	86	92	102	16	+ 3.8	4.543	+ .842	...
63	86	95	99	13	- 4.8	6.407	- .750	...
40	63	86	99	16	+ 8.9	5.497	+1.613	...
III	89	93	97	8	- .6	1.073	- .585	...

PUPIL ATTITUDE DATA: INDIVIDUALIZED GROUP
SUB-GROUP IV

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences (E – C = D): MnD	Standard Error of the Mean: σ_M	Significance Ratio S. R.	Level of Significance (%)
20	106	111	111	5	−3.5	1.400	−2.460	...
50	79	88	93	14	−3.7	8.790	− .425	...
13	95	95	99	4	+5.6	2.640	+2.110	...
45	95	102	102	7	−5.4	3.046	−1.782	...
41	93	97	101	8	− .9	3.213	− .290	...
2	92	97	101	9	−2.3	1.994	−1.150	...
29	75	70	68	− 7	+2.5	5.288	+ .466	...
44	82	95	98	16	−9.5	4.296	−2.211	...
42	91	100	100	9	−8.8	3.506	−2.503	...
54	95	99	99	4	−4.4	3.371	−1.310	...
IV	91	96	99	8	−3.5	1.329	−2.653	1.0

PUPIL ATTITUDE DATA: INDIVIDUALIZED GROUP
SUB-GROUP V

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences (E - C = D): MnD	Standard Error of the Mean: σ_M	Significance Ratio: S. R.	Level of Significance (%)
46	86	79	84	- 2	+12.2	3.860	+3.160	1.0
11	77	92	86	9	-20.1	5.970	-3.370	1.0
27	84	90	94	10	- 2.6	7.121	- .365	...
43	84	94	97	13	- 7.5	4.269	-1.751	...
26	87	98	102	15	- 8.4	2.550	-3.305	1.0
V	84	90	92	8	- 4.9	2.344	-2.104	...
All Ind.	89	94	97	8	- 2.1	.795	-2.605	1.0

PERSONAL/SOCIAL ADJUSTMENT DATA:
INDIVIDUALIZED GROUP
SUB-GROUP III

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences (E - C = D): MnD	Standard Error of the Mean: σ_M	Significance Ratio: S. R.	Level of Significance (%)
19	63	66	66	3	- 3.6	4.100	- .885	...
22	107	113	117	10	- 2.9	5.360	- .545	...
24	59	59	69	10	+11.0	5.924	+1.857	...
51	117	121	123	6	- 1.0	2.840	- .327	...
25	113	111	111	- 2	+ 1.9	5.558	+ .335	...
23	71	75	81	10	+ 1.6	2.430	+ .642	...
3	74	72	83	9	+14.2	2.750	+5.149	0.1
21	108	113	123	15	+ 4.2	5.150	+ .816	...
30	69	69	69	0	- .6	3.467	- .179	...
1	73	75	80	7	+ 2.8	3.990	+ .702	...
35	73	77	79	6	- 3.0	3.368	- .891	...
36	67	71	79	12	+ 4.5	5.014	+ .906	...
53	72	64	71	1	+14.6	6.129	+2.885	...
65	108	113	121	13	+ 4.2	5.391	+ .775	...
28	90	93	101	11	+ 4.2	4.673	+ .899	...
62	78	76	79	1	+ 5.6	3.284	+1.708	...
64	69	74	88	19	+ 8.7	4.314	+2.026	...
63	70	75	78	8	- 4.9	3.691	-1.313	...
40	73	69	78	5	+13.2	3.888	+3.395	1.0
III	83	85	90	7	+ 3.5	1.067	+3.281	1.0

PERSONAL/SOCIAL ADJUSTMENT DATA:
INDIVIDUALIZED GROUP
SUB-GROUP IV

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences (E - C + D): MnD	Standard Error of the Mean: σ_M	Significance Ratio: S. R.	Level of Significance (%)
20	83	88	94	11	+ 1.1	2.350	+ .447	...
50	75	76	78	3	+ 1.2	3.610	+ .335	...
13	76	78	82	6	+ 1.7	3.370	+ .504	...
45	112	115	119	7	+ .6	4.717	+ .131	...
41	110	114	120	10	+ .7	3.906	+ .177	...
2	114	122	122	8	- 8.1	5.186	-1.554	...
29	...	...	...	...	...	...	...	...
44	108	120	127	19	- 5.3	5.142	-1.021	...
42	100	114	117	17	-10.6	4.715	-2.237	...
54	70	74	78	8	- .3	4.718	- .071	...
IV	96	103	107	11	- 2.5	1.497	-1.667	...

PERSONAL/SOCIAL ADJUSTMENT DATA:
INDIVIDUALIZED GROUP
SUB-GROUP V

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences (E − C = D): MnD	Standard Error of the Mean: σ_M	Significance Ratio: S. R.	Level of Significance (%)
46	111	105	114	3	+15.0	3.860	+3.680	0.1
11	66	69	73	7	+ 1.1	3.720	+ .296	...
27	72	70	73	1	+ 4.2	3.531	+1.189	...
43	109	102	114	5	+20.0	7.883	+2.531	...
26	74	71	83	9	+16.1	3.177	+5.051	0.1
V	88	85	93	5	+11.8	2.253	+5.226	0.1
All Ind.	87	90	95	8	+ 3.0	.829	+3.626	0.1

CORRELATION MATRIX: INDIVIDUALIZED GROUP[a]

Variable	Intelligence Quotient (1)	Vocabulary T_1 (2)	Comprehension T_1 (3)	Total Achievement T_1 (4)	Attitude T_1 (5)	Personal T_1 (6)	Social T_1 (7)	Total Personality T_1 (8)	Total Achievement T_2 (9)	Attitude T_2 (10)	Total Personality T_2 (11)	Total Achievement T_3 (12)	Attitude T_3 (13)	Total Personality T_3 (14)
(2)	33	.	91	96	24	60	61	63	90	20	64	90	24	65
(3)	34	.	.	97	22	61	63	65	90	17	66	89	24	67
(4)	34	.	.	.	23	61	63	65	92	19	66	92	23	68
(5)	18	.	.	.	.	27	35	32	26	63	30	27	50	24
(6)	20	.	.	.	.	.	83	96	63	26	91	63	24	79
(7)	16	.	.	.	.	.	.	96	65	30	79	64	31	79
(8)	19	.	.	.	.	.	.	.	67	29	83	67	29	82
(9)	37	.	.	.	.	.	.	.	.	25	70	93	28	69
(10)	22	.	.	.	.	.	.	.	.	.	37	26	64	29
(11)	22	.	.	.	.	.	.	.	.	.	.	70	35	87
(12)	37	.	.	.	.	.	.	.	.	.	.	.	31	70
(13)	23	.	.	.	.	.	.	.	.	.	.	.	.	36
(14)	21	.	.	.	.	.	.	.	.	.	.	.	.	.

[a]Diagonal elements and decimals are omitted.

APPENDIX T

LANGUAGE EXPERIENCE APPROACH
EVALUATION

Each item for which a mean is reported below was developed from a significant element of the Language Experience Approach as described in the criteria statements. Items were rated in terms of their appropriateness, workability, and significance. The rating scale is:

5.00 to 4.51   Excellent, exceptional in all respects

4.50 to 3.51   Good, decidedly above average

3.50 to 2.51   Average, generally satisfactory

2.50 to 1.51   Fair, generally satisfactory but weak

1.50 to 1.00   Poor, of little value

Elements of the Language Experience Approach	Mean
(1) The concept that as a basis of reading the child should gain the feeling that his own ideas are worthy of expression and his own language is a vehicle for communication	4.95
(2) The concept that the basis of children's oral and written expression is their sensitivity to their environment both within the classroom and in the world at large	4.69

Elements of the Language Experience Approach	Mean

(3) The concept that freedom in self-expression, oral and written, leads to self-confidence in all language usage, which would include reading skills — 4.69

(4) The concept that children's oral expression may be stimulated and strengthened through paintings, drawings, and other graphic and/or art symbols — 4.75

(5) The concept that the child's own thoughts may be used as the main basis for development of instructional reading materials — 4.38

(6) The concept that there is a natural flow of language development in children. This flow proceeds in the following steps:

  a. The child's oral expression is stimulated and strengthened through art expression — 4.69

  b. Children's written expression flows easily from their oral expression — 4.69

  c. Motivation for reading follows easily from the child's seeing his own language in written form — 4.69

  d. After reading his own language in written form, the child moves naturally into reading the written language of other children and adults — 4.31

(7) Numerous activities, experiences, and devices which provide for interaction of children, such as bookmaking, reading to children, story telling, sharing, dictating and so forth, help children build self-confidence in expanding ideas and refining language skills — 4.94

(8) Skills such as letter formation, word recognition, spelling and phonics, and style and form can be developed most meaningfully from the child's own language. From this foundation the child moves easily into utilizing these skills in reading ideas of other authors — 4.96

Elements of the Language Experience Approach	Mean
(9) The concept that utilization of the child's own language as a basis of reading instruction results in a high degree of independence in writing and reading	4.56

READING ACHIEVEMENT TEST DATA:
LANGUAGE EXPERIENCE GROUP

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of T_3-T_1 Total Gains	Mean of Differences (E - C = D): M_aD	Standard Error of the Mean: σ_M	Significance Ratio: S. R.	Level of Significance (%)
15	37.0	42.9	43.5	6.5	- 5.3	.953	-5.560	0.1
7	49.7	53.8	65.0	15.3	+ 7.1	2.505	+2.839	1.0
4	55.9	72.2	73.8	17.9	-14.8	2.827	-5.235	0.1
VI	47.9	56.6	61.3	13.4	- 4.0	1.695	-2.360	...
5	23.1	35.8	41.7	18.6	- 6.8	1.380	-4.890	0.1
52	8.3	9.3	13.6	5.3	+ 3.4	3.264	+1.047	...
VII	17.6	25.8	31.1	13.5	- 2.9	1.711	-1.717	...
47 VIII	30.5	35.7	41.5	11.0	+ .6	1.738	+ .386	...
33 IX	25.1	36.9	38.6	13.5	-10.1	1.539	-6.563	0.1
8	6.37	68.9	77.0	13.3	+ 2.8	1.910	+1.487	...
6	15.3	13.4	22.2	6.9	+10.7	2.180	+4.890	0.1
48	18.7	28.3	32.6	13.8	- 5.3	2.182	-2.423	...
14	16.8	22.7	30.6	13.8	+ 1.9	3.534	+ .546	...
34	22.2	30.4	35.8	13.6	- 2.8	1.651	-1.675	...
X	29.9	35.5	42.4	12.5	+ 1.2	1.166	+ .993	...
All	33.4	41.1	46.3	12.9	- 2.5	.777	-3.264	1.0

PUPIL ATTITUDE DATA:
LANGUAGE EXPERIENCE
GROUP

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences (E - C = D): MnD	Standard Error of the Mean: σ_M	Significance Ratio: S. R.	Level of Significance (%)
15	98	100	107	9	+ 5.4	2.740	+1.970	...
7	84	81	91	7	+12.7	4.665	+2.715	...
4	98	104	105	7	- 4.1	4.702	- .876	...
VI	93	94	101	8	+ 4.8	2.547	+1.900	...
5	94	94	101	7	+ 6.4	4.010	+1.596	...
52	67	75	75	8	- 7.2	8.019	- .894	...
VII	84	87	91	7	+ 1.3	4.012	+ .327	...
47 VIII	92	87	96	4	+14.4	8.895	+1.620	...
33 IX	87	92	93	6	- 4.6	3.905	-1.178	...
8	82	92	100	18	- 2.1	6.280	- .326	...
6	80	77	88	8	+15.3	13.040	+1.170	...
48	89	97	100	11	- 4.4	4.844	- .899	...
14	80	84	89	9	+ 2.4	5.738	+ .423	...
34	79	83	96	17	+ 8.6	6.660	+1.289	...
X	82	87	95	13	+ 3.5	3.294	+1.060	...
All	87	90	96	9	+ 3.6	1.751	+2.058	...

PERSONAL/SOCIAL DATA:
LANGUAGE EXPERIENCE
GROUP

Teacher Number and Sub-group	Mean T_1	Mean T_2	Mean T_3	Mean of $T_3 - T_1$ Total Gains	Mean of Differences $(E = D)$: MnD	Standard Error of the Mean: σ_M	Significance Ratio: S. R.	Level of Significance (%)
15	78	78	80	2	+ 1.7	2.780	+ .626	...
7	104	97	113	9	+22.6	5.823	+3.873	0.1
4	124	123	129	5	+ 7.4	4.383	+1.679	...
VI	102	100	108	6	+11.1	2.969	+3.741	0.1
5	75	75	80	5	+ 4.4	3.950	+1.380	...
52	57	59	66	9	+ 5.0	8.039	+ .622	...
VII	67	69	75	8	+ 5.3	3.820	+1.382	...
47 VIII	69	71	73	4	+ .5	4.568	+ .099	...
33 IX	73	71	75	2	+ 5.1	3.674	+1.379	...
8	114	116	123	9	+ 6.2	4.210	+1.475	...
6	74	77	76	2	- 2.4	7.030	- .344	...
48	65	52	70	5	+30.6	9.247	+3.314	1.0
14	65	53	66	1	+25.8	6.195	+4.162	1.0
34	68	66	74	6	+11.1	5.271	+2.098	...
X	79	75	85	6	+14.0	3.051	+4.601	0.1
All	83	81	88	5	+ 9.5	1.589	+5.974	0.1

APPENDIX X

CORRELATION MATRIX: LANGUAGE EXPERIENCE GROUP*

Variable	Intelligence Quotient	Vocabulary T_1	Comprehension T_1	Total Achievement T_1	Attitude T_1	Personal T_1	Social T_1	Total Personality T_1	Total Achievement T_2	Attitude T_2	Total Personality T_2	Total Achievement T_3	Attitude T_3	Total Personality T_3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(2)	32	.	49	97	20	75	73	74	92	19	70	91	28	77
(3)	17	.	.	55	10	48	44	46	48	13	47	48	15	48
(4)	28	.	.	.	30	77	76	77	89	32	70	83	33	78
(5)	11	.	.	.	.	34	44	40	33	51	30	21	59	26
(6)	14	.	.	.	.	.	87	97	72	37	79	69	34	85
(7)	20	.	.	.	.	.	.	96	72	41	76	67	44	81
(8)	21	.	.	.	.	.	.	.	73	39	80	69	38	85
(9)	31	.	.	.	.	.	.	.	.	39	65	93	35	70
(10)	9	.	.	.	.	.	.	.	.	.	39	32	62	37
(11)	17	.	.	.	.	.	.	.	.	.	.	62	39	82
(12)	17	.	.	.	.	.	.	.	.	.	.	.	28	68
(13)	7	.	.	.	.	.	.	.	.	.	.	.	.	42
(14)	11	.	.	.	.	.	.	.	.	.	.	.	.	.

*Diagonal elements and decimals are omitted.

PERIOD FAVORED (CONTROL OR EXPERIMENTAL) AND SIGNIFICANCE OF DIFFERENCE: AN ANALYSIS BY CLASSROOM GROUPS ALL APPROACHES

Group or Sub-group	Number of Classrooms	Achievement			Attitude			Personal/Social		
		Control: Per Cent of Classroom Groups	Experimental: Per Cent of Classroom Groups	No Significance: Per Cent of Classroom Groups	Control: Per Cent of Classroom Groups	Experimental: Per Cent of Classroom Groups	No Significance: Per Cent of Classroom Groups	Control: Per Cent of Classroom Groups	Experimental: Per Cent of Classroom Groups	No Significance: Per Cent of Classroom Groups
I	12	33	17	50	8	...	92	...	8*	92
II	1	...	...	100	...	...	100	...	...	100
III	19	26*	5	68	...	5	95	...	11*	89
IV	10	20*	...	80	...*	...	100	...	...	100
V	5	40*	...	60	40	20	40	...	40*	60
VI	3	67	33	...	...	...	100	...	33*	67
VII	2	50	...	50	...	...	100	...	...	100
VIII	1	...	...	100	...	...	100	...	...	100
IX	1	100*	...	...	...	...	100	...	...	100
X	5	...	20	80	...	...	100	...	40*	60
B	13	31*	15	54	8	...	92	...	8*	92
I	34	26*	3	71	6*	6	88	...	12*	88
LE	12	33*	17	50	...	...	100	...	25*	75
All	59	29*	8	63	5	3	92	...	14*	86

*Statistical significance level of 1.0 per cent or better established (see other appendices for particular cases).

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