PREDICTION OF SUCCESS IN READING
AND DETERMINATION OF DIFFERENCES
IN READING ACHIEVEMENT BETWEEN
EARLY READERS AND OTHERS

A thesis submitted in partial satisfaction of the requirements for the degree of Master of Arts in Education
Elementary Education, Reading Improvement

by
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The Thesis of Kathleen A. Gau is approved:

California State University, Northridge
DEDICATION

This thesis is dedicated to the writer's loving and patient husband.

K.A.G.
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ABSTRACT

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Kathleen A. Gau

Master of Arts in Education
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The purpose of this study was to review literature and research studies (1) related to prediction of success in reading achievement, and (2) related to differences in reading achievement between children who learned to read before they were six years of age and children who did not learn to read until they were six years of age or older.

The findings of the present study indicated that success in beginning reading can be determined equally by readiness tests, intelligence tests, and teacher evaluations. Other factors which appear to affect the success in reading include: the instruction the child receives, his attitude toward his teacher and toward reading, his reaction to varying degrees of success and failure, and his home stability.
The findings also indicated that there were no significant differences in reading achievement between early readers and children who learned to read at age six or later when such achievement is measured several years later. Although some children may learn to read before entering the first grade, this does not guarantee that they will maintain their reading superiority; that is, formalized instruction at an early age does not seem to provide a lasting advantage for early readers over those who learn to read at age six or later.
CHAPTER 1

INTRODUCTION

Statement of the Problem

The problem of this study was to determine, through a review of literature and research: (1) related to prediction of success in reading achievement, and (2) related to differences in reading achievement between children who learned to read prior to six years of age and others who learned to read at age six or later, whether the early readers had a lasting superiority in reading achievement over those who learned to read at a later time.

Importance of the Study

Reading instruction in American schools has attracted the attention of a broad cross-section of citizens. There are many differences of opinion as to what should be done, but there is general agreement that reading ability is important for mastery of all subject matter.

Tinker (1971) stated that reading is talk written down. Learning to read involves learning that printed sym-
bols stand for speech. A child reads not only when he says the right printed words, but also when he understands their meaning because of his prior experience in comprehending the words spoken in meaningful sequence. The child discovers early that finding meanings is the core of the reading process.

Reading is a complex process. As the child progresses in reading, his word-recognition methods operate with greater ease and speed. The material read becomes more complicated as to vocabulary, ideas, length and structure of sentences, and complexity of language. The role of thinking while reading increases in its importance. To become a good reader, a child must learn to interpret, evaluate, and reflect upon the meanings encountered. Because of this, mere recognition of words is not enough. The thinking aspect of reading is an important development.

Children begin school on the basis of chronological age. This, however, has little relationship to learning the complicated process of reading. Authorities do not agree as to the minimum mental age which should be attained before beginning formal reading instruction.

According to Heilman (1967), learning to read is an extension of language skills which the child has already developed. At the same time, reading calls for several skills which are very much different from those learned previously. Examples include: visual discrimination of
letters and word forms, auditory discrimination of speech sounds within words, association of printed letters with the sounds they represent, and the blending of a number of letter sounds to arrive at the pronunciation of words in one's oral usage vocabulary. Failure to make adequate progress in these skills will inevitably slow the entire developmental process of reading.

The length of the readiness period should vary for different children, since no pre-determined school schedule should be expected to fit all children's development. Preparing for reading implies activity on the part of the child and a deliberate structuring of experiences on the part of the school.

Concern for a child's readiness to read is to be considered. The main purpose of the readiness period is to assure that children get off to a good start in learning to read.

The chief concern in teaching reading should focus on what happens to children as they participate in the program. The chief criterion of excellent reading instruction is evidence that a very large percentage of all children receiving instruction learn to read at a level commensurate with their ability. This implies that every child sees reading as a meaning-making process; and that while learning this process, he comes to enjoy reading. When this occurs, the reader develops a respect for reading as the
most highly prized skill he can develop for both school learning and personal development.

Procedure of the Study

This study was written after a review of the literature was conducted which focused on writings and research studies which have been published since 1930 on the prediction of reading success and on the determination of differences in reading achievement between children who read at an early age (under six years) and children who first learn to read at the age of six years or older.

Definition of Terms

The following definitions were adopted for the purpose of the present study.

Early Readers. For the purpose of this study, "early readers" refers to those children who were able to read before they reached six years of age. Reading refers to the process of getting meaning from printed word symbols. Other children who learned to read at the age of six years or older are identified as such.

Physiological Readiness. For the purpose of this study, the term "physiological readiness" refers to the development of physical, personal, and social maturity as an important factor in preparation for school adjustment and learning to read.

Reading Achievement. In this study, the term "reading
achievement" refers to the accumulation of specific abilities and skills such as sight vocabularies, word attack skills, sentence reading, paragraph reading, oral reading, and chapter reading. These abilities and skills are then integrated into functional acts of living and adjusting.

Reading Readiness. For the purpose of this study, the term "reading readiness" refers to that capacity for learning to read which results from a product of both maturation and environmental factors.

Organization of the Study

This study begins with a review of the literature and research on predicting success in reading. The areas included are: the effect of prereading programs, the use of reading tests, and reading habits and abilities.

Determining differences in reading achievement is also studied and reviewed. This is concerned with: kindergarten training and reading readiness, methods of teaching reading, family background and social-influencing factors, and reading achievement.

Reading through related experiences is then reviewed; it is concerned with: experiences at home, experiences outside the home, and experiences at school.

A final summary of the findings, conclusions, and recommendations complete this study.
CHAPTER 2
PREDICTION OF SUCCESS IN READING

The Effect of Prereading Programs

The ability to read well is important in our lives today. Success in initial reading experiences is critical to future growth in reading. A prime factor in determining success in beginning reading is reading readiness. Preparation for reading begins prior to the school years.

As the child progresses through kindergarten and the first grade, the teacher's role is to provide an environment and activities that lead to the acquisition of reading skills. Paradis and Peterson (1975) stated that a limited number of teachers actually diagnose each child's readiness skills. In other cases, all pupils progress as a group through the readiness program regardless of the background brought to school. (p. 445) As stated by Tinker (1976), knowledge of individual differences leads one to expect that a few pupils in a readiness class already have the skills needed for beginning reading. Research findings show that many pupils have good visual discrimination skills but most lack adequate auditory discrimination. Teachers should assess each pupil's skills and lack of skills in readiness. Tinker also stated that discrimination training with such non-verbal material as pictures and geometric figures has little effect upon reading achievement.
All teachers should realize that readiness instruction does not stop when a child begins reading. It must be continued through the first grade and beyond. In the first grade, then, the teacher should assess the abilities of each pupil and begin reading instruction as the child is ready to succeed.

In beginning reading, reading aloud to children is a valuable part of the instructional program. As stated by Cramer (1975), research and teaching experience have shown that reading to children helps them to learn to read. In a number of ways it also helps them to learn to write. Reading to pupils sparks their imagination, enriches their language, develops their concepts, and arouses their enthusiasm.

Teacher training also has a role in providing good reading instruction. Durkin (1974) stated that programs that are effective are evolutionary products of teachers who have a very broad knowledge of reading. Typically, these are teachers who have not allowed themselves to get into a professional rut.

Church (1974) carried out an experiment using kindergarten children to determine whether visual perception training helped beginning readers. One group used workbooks designed especially for that purpose. Another group used informal gamelike materials also designed especially for that purpose. In the first grade following the kinder-
garten period, reading performance of the children was evaluated. In actual reading experience in first grade, the performances of the two groups were not significantly different. But motivation during the kindergarten experience was not the same in both groups. The informal method produced better motivation, as it was more enjoyable for both pupils and teacher. If the teachers are to choose the method for giving perceptual training, they should select the methods very carefully.

Many activities commonly used in the classroom may help young children to develop the abilities they need in order to read well. Reading is limited by experience; experience is limited by conceptual development; and concepts are dependent upon strategies involving thinking skills.

Starting from the position of adult knowledge, Piaget (1954) showed that young children conceptualize at levels that differ from adult modes of thinking. Reasoning does not reach a stage of logical abilities until about age seven or eight. Supportive evidence is available from Rowher (1970), Almy, Chittenden, and Miller (1966), and Furth (1970) which indicates that the general age span from seven to eleven is the time when a child becomes able to reason abstractly, as required in reading.

As stated by Nevius (1977), such abstract thinking skills as predictions, guesses, confirmations, and correc-
tions are all important contributors to good reading. A basis for better reading may very well rest upon a pre-reading program which includes teaching for logical thought. The following activities are proposed by Nevius (1977) to assist the children in developing reading skills:

1. Patterning - helps the children to become aware of repetition. Activities that require auditory, visual, and tactile discrimination should be used.

2. Comparison - builds upon skills of observation as children create distinctions between objects, materials, and ideas, or note their similarities. Comparison tasks are not only pre-reading, but prenumber as well. They transfer to categorizations and patterning.

3. Classification - may be promoted through tasks which require children to make decisions by creating two or more groups of items or ideas. Through classification children may create inferences which lead to prediction or back to comparison; the teacher should guide this transfer.

4. Predictions - are made on the basis of prior learning and experience. Prediction teaches children how to pose questions before assigning answers.

5. Hypotheses - are formed by making statements and drawing conclusions through investigating many materials and forms of similar objects. Ultimately the child determines logical consequences from predetermined clues. (p. 643)

The important thing is to build on these activities for transfer of information and problem-solving skill.
Logical thinking does not develop in a precise vertical line, but is developed when any activities of a broad general nature are presented to the child.

As stated by Montgomery (1977), in the teaching of reading there has always been the gap between the transfer from representational figures, such as pictures and line drawings of objects, to the letter symbols of words. For years teachers have hoped that those schemes which introduced pictures, drawings, and games involving recognition of the whole or various parts of stimulus materials would enhance reading subskills. Although the children's interest and attention were captured, there was no evidence that the skills being practiced had transfer value.

The analysis of the letters of the alphabet in terms of a visual code which can be taught at the prereading level is a fruitful one and substantiated by the theoretical formulations of McLaughlin (1963), Bryant (1971), and Sutherland (1969).

Orientation becomes critical for letter recognition as confirmed by Bryant (1971). Since children often hypothesize a word from its initial letter (or last letter, as their eyes scan from right to left) and key structures such as overall length and shape, rules for this dimension are critical. The problem for teachers is how best this can be taught. The problems of some children are increased if their ability to test hypotheses about perceptual input are
limited, or if their memory for forms is poor.

In Montgomery's research (1977), a Visual Pattern Recognition Test for Prereading skills and a series of training materials to teach the coding rules were constructed and tested on the basis of memory span, preoperational performance, concrete operations, and formal operations. Three equivalent forms of the VPR test consisted of:

Subtest IA: Eight-page booklet of colored dot patterns (5 minutes)

Subtest IB: Five-page booklet of dot and stick patterns (5 minutes)

Subtest IC: Nonsense word discrimination test (2 minutes)

Subtest ID: Selected words discrimination test (3 minutes)

The training materials consisted of:

1. Two five-page booklets of colored dot patterns

2. Two five-page booklets of black dots and sticks patterns

3. Four sets of nonsense word jigsaws and templates cut according to coding rules and based on Allan's findings (1965)

The children manipulated sticks and dots in response to the printed patterns.

The subsequent researches showed a significant improvement in the reading performance (word recognition) of the group of five-year-old children trained with the pattern of recognition materials, and a similar improvement was found
in a replication study.

Since transfer of training can be shown to occur from the pattern recognition training materials to the reading performance measured by the teacher when the rules are taught in abstract fashion using controlled materials, then reading performance will be accelerated when relevant training materials are presented.

The final form and presentation of the Visual Pattern Recognition test were established in a series of pilot studies prior to the main research and, in all, 146 children between the ages 4 years 6 months and 5 years 6 months were tested (mean ages 5 years 0 months). From the test scores Perceptual Readiness Quotients were derived, along with a thirty-point diagnostic schedule for analyzing particular children's learning difficulties.

The children's reading performance (word recognition - WR) was assessed in the third week of school by their class teacher using flash cards to find how many of the words in the first reading books they could recognize.

The training time for each subject was half an hour a week. The subjects were tested by the teacher on WR and by the researcher on VPR before and after the four weeks training. There were one experimental and two control groups. Results are shown on the graph on the following page.
The children's performance on the pattern recognition test (PR) was scored and the two scores (WR and PR) tested to find the degree of correlation. A validity estimate is .53 (or 27 percent predictive capacity) for the Harrison-Stroud Reading Readiness Profiles.

The findings for VPR/WR indicated a predictive capacity of well over 50 percent. The correlations rose to over 72 percent when age was held constant and reached over 80 percent when the teacher was experienced in the teaching of reading. Social class and intelligence did not cause the scores to vary significantly.
The Pattern Recognition Test battery with its three equivalent forms is a useful diagnostic tool to find the child's readiness quotient in comparison with others in the same class and allows a full diagnosis of thirty types of errors that the child may be making. Once this diagnosis has been made, a program of training may be instituted using the materials according to the special diagnostic and training schedules.

The Pattern Recognition Tests may also be used as a prediction of reading readiness and reading performance in its early stages. The early gains of the experimental groups were found to persist even after a six-month interval and so the tentative conclusion is that a useful set of basic tools for the teaching of reading has been constructed. These tools are concrete in nature and most suitable for children in the intellectual preoperational stage.

For success in beginning reading, a strong foundation is important. Therefore, prereading programs often include activities to help develop readiness skills that will provide a foundation for learning to read.

As stated by Hale (1976), prereading activities can and should be conducted in a reading-type situation with the instruction directed toward the tasks to be performed in reading. Preparation for reading should include activities with printed language to develop visual discrimination,
left-to-right progression, and concepts of language.

Cohen (1969) distinguished between learning readiness and reading readiness. While those learning readiness activities which help children adjust to the school environment are important, emphasis on the specifics of reading readiness is needed to help children deal effectively with beginning reading. This does not mean that the multidimensional nature of readiness is ignored. The point is that general readiness experiences are not enough.

Samuels (1973) examined factors involved in success and failure in beginning reading. A major implication of his study is that prereading instruction should be focused carefully on learning activities which help children remember printed symbols.

Research by Barrett (1965) in visual discrimination substantiates that training with letter and word forms is more effective than training with nonword forms in developing discrimination ability. In addition, training with word and letter forms correlates more highly with achievement in beginning reading than does nonword form training.

Paradis (1974) reported that most preschool and kindergarten children are able to discriminate pictures and letters, but they experience some difficulty in word discrimination tasks. Paradis and Peterson (1975) stated that visual discrimination training should be related to the teacher's diagnosis of the students' needs.
Hall (1976) stated that we can give children training in both simultaneous and successive visual discrimination to help them to learn distinctive features and to develop classification systems for remembering printed forms. In simultaneous discrimination, children match a printed symbol to its duplicate while both are visible. Successive discrimination can include locating a particular letter or word in a sentence from an experience story.

Samuels (1973) stated that attaching a verbal label to a printed stimulus helps children to remember it. Letters and words should be named even though the major emphasis in prereading may be on the visual discrimination task instead of on the acquisition of reading vocabulary.

Exposure to written language in the prereading program is important because it may lead to interest in learning to write, which may in turn serve as a key to motivating interest in reading. Durkin (1966) reported that children who were early readers frequently asked questions about writing and learned to write before they learned to read.

As stated by Hale (1976), the presentation of print should not be delayed until children are ready. Meaningful encounters with reading activities can help prepare children for reading. Written language exposure is needed to develop readiness for reading.

Use of Reading Tests

Most authorities today agree that reading readiness is
an important aspect of the beginning reading program. They have stated that a child’s success in learning to read depends largely upon whether the child was ready when he began formal reading activities. Since reading readiness is an important part of the reading program, determining the readiness of each child is necessary at the beginning of the reading program. Reading readiness tests are often used to determine each child’s readiness to read. As stated by Dykstra (1967), the typical reading readiness test has two purposes: the identification of pupils who are ready to read and the diagnosis of an individual child’s deficiencies in skills considered prerequisite to success in reading.

In Dykstra’s research (1967), many interesting facts related to the subject of reading readiness were found. They are as follows:

1. The readiness test as a whole is a reliable instrument. However, there is a question as to whether or not subtests of readiness batteries are sufficiently reliable to permit the teacher to make a differential diagnosis of the child’s prereading capabilities.

2. Performance on readiness test batteries as well as on subtests within these batteries is significantly related to subsequent reading achievement. Correlation coefficients for readiness batteries as well as for individual subtests generally range from .40 to .70, with relatively few of them reaching the upper limits of this range. As a general rule,
prediction of reading success can be made almost as accurately by using a single subtest (such as letter recognition) as by employing an entire readiness test battery. Nevertheless, prediction of an individual's achievement at the end of the first grade is very difficult.

3. A number of evaluation techniques predict first grade reading achievement just about as well as do reading readiness tests. The predictive validity of primary group intelligence tests, for example, is not substantially different from the predictive validity of readiness tests. Furthermore, ability to deal with numbers is related to success in first grade reading to almost the same extent. There is little evidence to indicate that the readiness test makes a unique contribution to a prognosis of the child's capability to profit from reading instruction.

4. Research evidence does not substantiate the claim that immature pupils profit more from readiness instruction than from formal reading instruction. However, most studies which have investigated this area of primary reading instruction have been concerned only with the progress at the end of first grade and therefore the statement made is generalizable only to this phase of the total school program. Perhaps an extended readiness program for immature pupils would pay off in the long run, but evidence of this is lacking.

5. Research is in general agreement that skills measured by readiness tests are developmental in nature. As children progress through the first grade they improve their language facility, visual discrimination, and auditory discrimination. However, it is indicated that some of these abil-
Ities develop as rapidly as a result of formal reading instruction as they do in a diagnostic readiness program. Likewise, there is no clear-cut evidence that the use of readiness workbooks and readiness materials improves a child's readiness for reading beyond what could be expected from an informal kindergarten program. (p. 46)

Hick and Santman (1971) carried out a study to capture more variability in letter naming by kindergarten children and thus improve the predictability of reading from letter-naming skills. They had to first establish a scale for the qualitative scoring of the children's responses to lower-case letters and obtain scores. The scale was developed with several levels. Each level of the correctly elaborated responses was considered to represent higher development than unelaborated responses. The following criteria were established:

5 points - names letter and gives example of use
4 points - names letter and gives no elaboration
3 points - describes form or gives an example of use
2 points - wrong name with correct description or example
1 point - wrong response or refusal

The subjects were 41 kindergarten children, and the testing was conducted by a reading specialist. The children were asked to name the lower-case Charles E. Merrill let-
ters as they were drawn from a box in random order. One year later they were given the Gates-McGinitie Reading Test to measure vocabulary and comprehension. The findings showed that the strategy did not increase the correlation between letter naming and reading in the first grade.

Recent research conducted by Terry, Samuels, and LeBerge (1976) at the Center for Research in Human Learning on word-recognition strategies found that beginning readers processed each letter of a word prior to recognizing the word. Skilled readers on the other hand recognized the word as a single unit, a process which is faster and leads to better comprehension.

The "hypothesis/test" theory (Dahl and Samuels, 1977) provides the framework for teaching the strategy of using context in word recognition. This theory is similar to theories used in explaining how a listener is able to understand spoken words. The four steps in word recognition procedures are: (1) using information from the passage, (2) making a prediction, (3) comparing the printed word to the predicted word, and (4) accepting or rejecting the prediction. (p. 603) Each of the four stages in the hypothesis/test strategy represents a skill which can be learned. The procedure which is recommended is to begin training at the oral language level, and train to mastery at this level, then to introduce the same skill visually. The seven component skills derived from the model are:
1. Training on the ability to say a word when given an initial sound.

2. Training on the ability to determine the beginning letter of a spoken word.

3. Training on the ability to recognize visually the initial letter of a word presented orally.

4. Training on the ability to use auditory context to predict words that could logically follow.

5. Training on the ability to use auditory context to predict word(s) that could logically follow in a sentence hearing just the initial sound of the word.

6. Training on the ability to use visual context to predict word(s) that would logically follow in a sentence without seeing the initial letter of the word.

7. Training on the ability to use visual context to predict word(s) that could logically follow in a sentence when given the initial letter of the target word. (pp. 604-605)

An experimental study by Dahl and Samuels (in press 1977) which taught these skills to normal second-grade students showed significant improvement in word recognition and comprehension. Another study by Samuels, Dahl, and Archamety (1974), showed that teaching these skills led to significant improvement in mentally retarded students and normal second-grade students.

According to Klare (1976), prediction research and development typically involves these general steps:
1. Identify a number of objective language variables

2. Correlate these variables with criterion readability values - usually comprehension or retention scores - on a large set of passages of varied content and known difficulty

3. Select the best variables as indices of readability

4. Combine the indices - usually using multiple regression techniques - into a readability formula

5. Cross validate on a new set of passages (p. 130)

The search is for index variables which have the following general qualities when combined in the formula:

1. High correlation with the criterion values but low correlation with each other;

2. High reliability of application; and

3a. Appropriateness for computer application, if the formula is to be applied primarily by hand; or

3b. Appropriateness for computer application, if the formula is to be applied primarily by computer (p. 130)

In general, the variables need to have only an index relationship to some criterion of readable writing; they may, but need not, have a causal relationship.

A diagrammatic model showing the major factors that emerged from a review of validity studies is shown in Figure 1. There are two points to be emphasized: the test situation turned out to be quite important to the results
Figure 1.
Some Major Factors Interacting with Readability Measures in Validity Studies

Reader Competence --- Interacting with Content of Material

Reader Competence --- Interacting with Content of Material

Reader Competence --- Interacting with Content of Material

obtained in the studies; and the interacting nature of the factors also turned out to be important. The reader performance measures used by research workers varied considerably. All studies, however, contained at least one variable that would fit under the general heading of comprehension and/or retention.

Within the experimental situation itself, certain factors shown in Figure 1 seemed to be of varying significance. For the positive studies, there was a mean value of about $2\frac{1}{2}$ occurrences (2.6) out of the 9 possible points, based upon 17 cases. For the negative studies, there was a mean value of about $5\frac{1}{2}$ occurrences (5.5) out of the 9 possible points, based upon 9 cases. If the mixed studies are combined with the negative, the mean value drops slightly to about 5 occurrences (5.2) out of 9, based upon 15 cases. (The small numbers of cases involved should be noted). One interpretation of this finding is that subjects appeared to compensate for the less readable presentation if they were highly enough motivated to do so and if the test situation permitted them to do so. Another interpretation is that the presence of the so-called effectiveness factors do emphasize the memory component in comprehension. Memory may play a more appropriately small role in what we call comprehension. Still another possible interpretation is that the comprehension tests used might simply not have been sensitive enough to pick up differences in comprehension.
that were actually present.

As Klare stated, whatever the interpretation, the results lead to some implications for users of readability formulas.

1. Motivation can sometimes over-ride the effect of readability upon comprehension, at least where the motivation has a chance to operate. This suggests that raising motivation and keeping it high is of great practical importance.

2. The experimental situation may sometime be artificial (or artifactual) in respect to the level of motivation produced. The user of a readability formula might not have so high a level in a real-life situation, and ideally he or she would want a typical level of motivation.

3. Even when the comprehension test score is not increased by an improvement in readability, other measures such as judgments or preferences may be positively affected.

4. Finally, the difficulty of a test must be considered in relation to the difficulty of the text it covers. (p. 140)

Reader competence characteristics can and do set limits as well as provide increased capability. There are a few additional implications for the user of readability formulas: (1) where a reader's knowledge of a particular subject matter is high, a readability formula may overestimate difficulty; (2) where a reader's level of reading skill
is high, a readability formula may overestimate difficulty; and (3) intellectual and maturity levels must be taken into account when interpreting readability formula scores.

Reading Habits and Abilities

As stated by Lamme (1976), researchers who have studied children's reading habits and interests have found that ages ten through thirteen are the "reading craze" years (Terman and Lima, 1926; Witly and Kopel, 1938; Ashley, 1970; Kimbrough, 1972). These years of peak involvement with reading were selected for a study of reading habits in the fall of 1971.

Cross-sectional studies have indicated that there is a relationship between the amount of recreational reading children do and their reading ability as measured by standard tests (Sauls, 1971). It has also been suggested that the amount of reading done is related to intelligence (Lowery and Grafft, 1968) and creativity (Roderick, 1967).

The investigation by Lamme (1976) was made into the long-term reading habits of intermediate-grade children and into the relationships between these habits and achievement on standardized reading tests in hopes that they would indicate more strongly whether educators can assume that reading habits and reading ability are highly related.

The subjects were 65 upper-elementary students in a mixed rural/suburban school. A comparison was made of
their reading records over a three-year period (during the fourth, fifth, and sixth grades) with their scores on a test of reading comprehension and on one of critical reading. A reading record was filled out by each student for every book he or she read. These records were collected every other week by the investigator. The reading record was a questionnaire asking where the book had been obtained, who had recommended it, if it were a paperback edition, if the student had ever read it before, and if the student had ever read another book by the same author.

The second method of assessing habits was an informal interview by the investigator with each subject during each year of study. Interviews provided descriptive insights and possible explanations for the findings from reading records.

The standardized test instruments used in this study were the reading comprehension section of the Iowa Tests of Basic Skills, which was administered by the school district, and a Look at Literature, administered by the investigator. Both are published multiple-choice instruments.

The results on the table entitled "Mean and standard deviation for each variable given for each year for 65 students in attendance throughout the study" show that the mean scores on the Iowa reading comprehension test increased roughly one grade level each year. There was wide variation among scores each year, as shown by large standard
Mean and standard deviation for each variable given for each year for 65 students in attendance throughout the study

<table>
<thead>
<tr>
<th>Variable</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td><strong>S.D.</strong></td>
<td><strong>Mean</strong></td>
<td><strong>S.D.</strong></td>
</tr>
<tr>
<td>Literature score †</td>
<td>26.0</td>
<td>7.5</td>
<td>27.5</td>
</tr>
<tr>
<td>Reading score ‡</td>
<td>4.5</td>
<td>1.3</td>
<td>5.5</td>
</tr>
<tr>
<td>No. books reported read</td>
<td>23.5</td>
<td>16.7</td>
<td>19.5</td>
</tr>
<tr>
<td>Percent medal books</td>
<td>0.8</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Percent books on standard list</td>
<td>10.0</td>
<td>11.2</td>
<td>10.5</td>
</tr>
<tr>
<td>Percent books from:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Library</td>
<td>68.3</td>
<td>24.4</td>
<td>78.7</td>
</tr>
<tr>
<td>Class library</td>
<td>18.1</td>
<td>20.1</td>
<td>3.2</td>
</tr>
<tr>
<td>Public library</td>
<td>2.3</td>
<td>7.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Home/relative</td>
<td>5.7</td>
<td>12.1</td>
<td>9.2</td>
</tr>
<tr>
<td>Friends</td>
<td>2.7</td>
<td>7.5</td>
<td>3.1</td>
</tr>
<tr>
<td>Bookstore</td>
<td>2.2</td>
<td>6.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Percent recommended by:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friend</td>
<td>5.0</td>
<td>8.7</td>
<td>9.9</td>
</tr>
<tr>
<td>Teacher</td>
<td>4.9</td>
<td>8.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Librarian</td>
<td>8.2</td>
<td>12.9</td>
<td>5.5</td>
</tr>
<tr>
<td>No One</td>
<td>75.5</td>
<td>22.5</td>
<td>72.2</td>
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<tr>
<td>Parent</td>
<td>3.0</td>
<td>6.8</td>
<td>3.6</td>
</tr>
<tr>
<td>Sibling</td>
<td>2.0</td>
<td>6.9</td>
<td>1.8</td>
</tr>
<tr>
<td>Percent paperbacks read</td>
<td>9.1</td>
<td>11.9</td>
<td>15.8</td>
</tr>
<tr>
<td>Percent books reread</td>
<td>15.9</td>
<td>14.3</td>
<td>12.1</td>
</tr>
<tr>
<td>Percent known authors</td>
<td>27.7</td>
<td>21.1</td>
<td>24.3</td>
</tr>
</tbody>
</table>

† Score on A Look at Literature
‡ Score on reading comprehension section of Iowa Tests of Basic Skills
deviations. Mean scores on a Look at Literature, which asks for reactions to interpretations of literary passages, rose 1.5 points between fourth and fifth grades and 3.7 points between the fifth and sixth grades, indicating growth in the children's ability to read critically in the upper grades.

The reading habit of seeking out books by known authors was most closely related to reading ability. For other reading habits, all types of readers either displayed or did not display the habit in equal proportion. These reading habits are therefore not found to be highly related to reading ability. Since it was found in this study that reading test scores appeared to have little relationship to reading habits, teachers who want to help children to become avid readers need to gather data on the actual reading done by children. If test scores alone are relied upon to assess children's reading development, then the ability to read only in test situations is measured. By having children keep reading records, teachers can find out what individual children's reading habits are and perhaps devise educational procedures which might better benefit each individual child. The total reading development of children includes their acquisition of both reading ability and reading habits.

Also relating to the total reading development of the child is the fact that children entering first grade have
cognitive, linguistic, auditory, and visual processing skills. There are, however, individual differences among children in these skills. These skills relate to the reading process and affect the children's ability to learn to read.

As quoted by Muehl and DiNello (1976), Macginitie (1969) cited two goals for reading readiness research: (1) understanding the nature of the reading process, and (2) making useful predictions. Muehl and DiNello directed their study to the first of these goals, based on the conviction that a better understanding of process will in the long run provide a better rationale for useful prediction. The purpose was to examine both short- and long-term reading prediction from a set of first-grade skill tests in order to assess the contributions of various skill components to the reading process as it develops over the years.

The subjects in this study were 125 first-grade boys selected at random in a midwestern community in September, 1964. Boys who had repeated first grade, who lacked test scores from the Harrison-Stroud Reading Readiness Profiles (H-S) administered by the teachers at the beginning of the year, or who showed evidence of mental or physical handicaps or emotional problems were not included in the sample. The Wechsler Intelligence Scale for Children (WISC) was administered to all 125 subjects by trained examiners between late October and early December. The WISC combined with
the H-S results provided a pool of 19 different skill tests obtained from test instruments known from previous research to be predictors of reading achievement. In May of the same school year, reading test scores were obtained from the Metropolitan Achievement Test, Primary I Battery, Form A (MAT), for 120 subjects. For the follow-up study, 56 subjects were located for whom reading test scores were available from school testing for all grades one through seven. In grades one through three, MAT reading scores were available from end-of-year school testing. In grades four through seven, the Iowa Test of Basic Skills (ITBS) reading comprehension scores were available from midyear school testing at each grade level.

The 56 first-grade boys in the follow-up study in September ranged in age from 74 to 86 months, with a mean age of 81 months. The subjects' average scores on the H-S subtests were comparable to the test norms except on the letter-naming subtest. On the letter-naming subtest, the test norm average was 18 letter-names given correctly. The present subjects averaged 25 correct out of a maximum of 42 upper- and lower-case letters. The subjects' performance on the WISC subtest tended to be slightly higher than the sealed-score mean of 12 for the WISC norm group. The Full Scale WISC mean was 113 with a range from 85 to 135. Seven of the 56 subjects had Full Scale scores lower than 100. The Verbal and Performance means were 109 (12) and 113 (11),
respectively.

A summary of the reading score performances in grades one through seven is presented in Table 1. The follow-up subjects had performed above average compared to the national norms on the end-of-year tests. In Table 2 the simple correlations between all the H-S and WISC first-grade subtest scores and reading scores in grades one through seven are presented. In the case of the WISC, the Verbal IQ score was generally a better predictor of reading performance than the performance IQ, and it was a better predictor in grades six and seven than in the earlier grades. The minimal set of test skills selected to predict reading in grades one and two is given in Table 3. It indicated that the H-S subtests of Using Symbols and Letter Naming contributed significantly and independently to predicting reading achievement at both the first and the second grade. The set of first-grade skills selected to predict reading in grades three through seven is shown in Table 4. Although Using Symbols provided significant and independent prediction in the first two grades, it appeared as a significant predictor only at fifth-grade level in these analyses: (1) Letter naming continued as a significant independent predictor at all grade levels, (2) WISC Information was significant in grades four through seven, and (3) WISC arithmetic made an independent and significant prediction in grades three and five.
<table>
<thead>
<tr>
<th>Grade</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>55^1</td>
<td>7.5</td>
<td>36 to 67</td>
</tr>
<tr>
<td>2</td>
<td>57</td>
<td>7.8</td>
<td>40 to 70</td>
</tr>
<tr>
<td>3</td>
<td>56</td>
<td>8.3</td>
<td>38 to 75</td>
</tr>
<tr>
<td>4</td>
<td>49^2</td>
<td>13.4</td>
<td>20 to 94</td>
</tr>
<tr>
<td>5</td>
<td>60</td>
<td>13.1</td>
<td>26 to 95</td>
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<tr>
<td>6</td>
<td>66</td>
<td>14.1</td>
<td>38 to 100</td>
</tr>
<tr>
<td>7</td>
<td>74</td>
<td>16.0</td>
<td>35 to 115</td>
</tr>
</tbody>
</table>

^1 Means for grades 1-3 based on MAT standard scores with mean 50, SD 10.

^2 Means for grades 4-7 based on ITBS grade-equivalent scores, e.g., 49 = fourth grade, ninth month.

Table 2
Simple Correlations between First-grade Sub-test Scores
and Reading Scores in Grades One through Seven (N=56)

<table>
<thead>
<tr>
<th>Sub-test scores</th>
<th>Grades</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<td>1</td>
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<td></td>
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<tr>
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<td>.15</td>
<td>.22</td>
<td>.27*</td>
<td>.16</td>
<td>.22</td>
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<td>Making visual</td>
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<td>.57*</td>
<td>.20</td>
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<td>.29*</td>
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<td></td>
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<td>Attention</td>
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<td>.19</td>
<td>.25</td>
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<tr>
<td>discrimination</td>
<td>.29*</td>
<td>.42*</td>
<td>.28*</td>
<td>.17</td>
<td>.33*</td>
<td>.28*</td>
<td>.36*</td>
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<tr>
<td>Using context</td>
<td></td>
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</tr>
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<td>and auditory</td>
<td>.36*</td>
<td>.35*</td>
<td>.26</td>
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<td>.40*</td>
<td>.28*</td>
<td>.38*</td>
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<td>.44*</td>
<td>.39*</td>
<td>.40*</td>
<td>.43*</td>
<td>.47*</td>
<td>.47*</td>
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<tr>
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<td></td>
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<td>.39*</td>
<td>.49*</td>
<td>.40*</td>
<td>.41*</td>
<td>.46*</td>
<td>.57*</td>
<td>.52*</td>
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<td>Comprehension</td>
<td>.15</td>
<td>.13</td>
<td>.16</td>
<td>.11</td>
<td>.10</td>
<td>.11</td>
<td>.18</td>
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<td>Arithmetic</td>
<td>.40*</td>
<td>.37*</td>
<td>.44*</td>
<td>.35*</td>
<td>.48*</td>
<td>.42*</td>
<td>.44*</td>
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<td>.21</td>
<td>.09</td>
<td>.24</td>
<td>.28*</td>
<td>.33*</td>
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<td>Vocabulary</td>
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<td>.04</td>
<td>.12</td>
<td>.19</td>
<td>.17</td>
<td>.30*</td>
<td>.29*</td>
</tr>
<tr>
<td>Digit span</td>
<td>.24</td>
<td>.31*</td>
<td>.27*</td>
<td>.15</td>
<td>.25</td>
<td>.40*</td>
<td>.33*</td>
</tr>
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<td>Sub-test scores</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
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<td>WISC Performance</td>
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<td>-.01</td>
<td>-.04</td>
<td>-.04</td>
<td>-.11</td>
<td>.04</td>
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<td>.33*</td>
<td>.16</td>
<td>.29*</td>
<td>.23</td>
<td>.30*</td>
</tr>
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<td>Object assembly</td>
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<td>.34*</td>
<td>.19</td>
<td>.33*</td>
<td>.30*</td>
<td>.39*</td>
</tr>
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<td>Coding</td>
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<td>.27*</td>
<td>.05</td>
<td>.17</td>
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<td>.24</td>
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<td>.24</td>
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<td>.11</td>
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<td>.37*</td>
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<td>.41*</td>
<td>.50*</td>
<td>.51*</td>
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<td>.33*</td>
<td>.17</td>
<td>.30*</td>
<td>.25</td>
<td>.38*</td>
</tr>
</tbody>
</table>

* Significant at p < .05 (r > .27)

Table 3

Beta and Multiple Correlation Coefficients For Select Variable Analysis: Grade One and Two (N=56)

<table>
<thead>
<tr>
<th>First-grade skill tests</th>
<th>Grades 1</th>
<th>Grades 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using symbols (HS)</td>
<td>betas</td>
<td>betas</td>
</tr>
<tr>
<td>(beta^2)</td>
<td>(.10)</td>
<td>(.05)</td>
</tr>
<tr>
<td>Making visual discriminations (HS)</td>
<td>betas</td>
<td>betas</td>
</tr>
<tr>
<td>Attention controlled</td>
<td>(.00)</td>
<td>(.13)</td>
</tr>
<tr>
<td>(beta^2)</td>
<td>(.08)</td>
<td>(.05)</td>
</tr>
<tr>
<td>Attention uncontrolled</td>
<td>betas</td>
<td>betas</td>
</tr>
<tr>
<td>(beta^2)</td>
<td>(.09)</td>
<td>(.06)</td>
</tr>
<tr>
<td>Giving names of letters (HS)</td>
<td>betas</td>
<td>betas</td>
</tr>
<tr>
<td>(beta^2)</td>
<td>(.05)</td>
<td>(.08)</td>
</tr>
<tr>
<td>Information (WISC)</td>
<td>betas</td>
<td>betas</td>
</tr>
<tr>
<td>(beta^2)</td>
<td>(.05)</td>
<td>(.08)</td>
</tr>
<tr>
<td>R^2</td>
<td>.66</td>
<td>.74</td>
</tr>
<tr>
<td>R^2</td>
<td>.44*</td>
<td>.54*</td>
</tr>
</tbody>
</table>

* Significant at p < .05

* Reprinted from Muehl, DiNello, Journal of Reading Behavior, "Early First-Grade Skills Related to Subsequent Reading Performance: A Seven Year Followup Study," Vol. 8, No. 1, Spring 1976, p. 73.
Table 4

Beta and Multiple Correlation Coefficients for Select Variable Analysis: Grades Three through Seven (N=56)

<table>
<thead>
<tr>
<th>First-grade skill tests</th>
<th>Grades</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>Using symbols (HS) beta</td>
<td></td>
<td>.11</td>
<td>.20</td>
<td>.23*</td>
<td>.13</td>
<td>.18</td>
</tr>
<tr>
<td>(beta²)</td>
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<td>(.01)</td>
<td>(.04)</td>
<td>(.05)</td>
<td>(.02)</td>
<td>(.03)</td>
</tr>
<tr>
<td>Giving names of letters</td>
<td></td>
<td>.28*</td>
<td>.31*</td>
<td>.31*</td>
<td>.33*</td>
<td>.35*</td>
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<tr>
<td>(HS) beta</td>
<td></td>
<td>(.08)</td>
<td>(.10)</td>
<td>(.10)</td>
<td>(.11)</td>
<td>(.12)</td>
</tr>
<tr>
<td>(beta²)</td>
<td></td>
<td>(.04)</td>
<td>(.06)</td>
<td>(.06)</td>
<td>(.17)</td>
<td>(.11)</td>
</tr>
<tr>
<td>Information (WISC) beta</td>
<td></td>
<td>.20</td>
<td>.25*</td>
<td>.24*</td>
<td>.41*</td>
<td>.33*</td>
</tr>
<tr>
<td>(beta²)</td>
<td></td>
<td>(.04)</td>
<td>(.06)</td>
<td>(.06)</td>
<td>(.17)</td>
<td>(.11)</td>
</tr>
<tr>
<td>Arithmetic (WISC) beta</td>
<td></td>
<td>.28*</td>
<td>.15</td>
<td>.28*</td>
<td>.16</td>
<td>.20</td>
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<tr>
<td>(beta²)</td>
<td></td>
<td>(.08)</td>
<td>(.02)</td>
<td>(.08)</td>
<td>(.02)</td>
<td>(.04)</td>
</tr>
<tr>
<td>R²</td>
<td>.58</td>
<td>.57</td>
<td>.67</td>
<td>.69</td>
<td>.69</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.33*</td>
<td>.32*</td>
<td>.44*</td>
<td>.47*</td>
<td>.47*</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at p ≤ .05

The purpose of Huehl and DiNello's study was to identify a set of first-grade skill tests that would make significant and independent contributions to predicting reading performance in subsequent years. The findings of the study are summarized in Table 5. Five tests of the original 19 predictor variables emerged as significant and independent predictors. These five tests included: Using Symbols, Making Visual Discriminations, Giving Names of Letters, WISC Information, and WISC Arithmetic.

Two major conclusions can be drawn from this study and from the related research. First, to the extent that reading reflects a wide spectrum of intellectual skills, any attempt to overcome individual differences through instruction will be difficult. Huehl and DiNello refer to Thorndike (1974) who spoke of a "barrier" which "... we see now as not primarily a deficit in one or more specific and readily teachable skills but as a reflection of generally meager intellectual processes." (p. 79) Second, to the extent that success in learning to read reflects an underlying maturational process, we face another "barrier" that will not be easily manipulated through teaching. (p. 79) This particular barrier is one that many in our schools and American society find difficult to acknowledge. We tend to be reluctant to accept the idea that maturation imposes limits on what can be taught and learned at a given stage of development.
Table 5
Summary of first-grade skill predictors

<table>
<thead>
<tr>
<th>Grades</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harrison-Stroud</td>
<td></td>
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<tr>
<td>Using symbols</td>
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<td>Attention uncontrolled</td>
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<td>Giving names of letters</td>
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</table>

*Solid lines indicate significant and independent reading predictor in multiple correlation.
**Dotted lines indicate significant reading predictor in simple correlations only

CHAPTER 3

DETERMINATION OF DIFFERENCES IN READING ACHIEVEMENT

Some children achieve reading competency at an early age (before six years) while other children do not achieve reading competency until they are older. The issue in question is whether or not early success in reading is related to long-term reading competency. Are the differences in initial reading success due to the age and maturational differences that disappear with time? Are the "late readers" just immature pupils who eventually achieve normally, or do they continue to have problems in achieving reading competency?

To determine whether a child is ready for formal reading instruction, it is necessary to evaluate his progress in reading readiness activities. Botel (1964) stated that a child is ready for formal reading instruction when he or she can recognize words in another context after those words have been presented in a deliberate fashion, such as on a chalkboard, on experience charts, or on labeling spots in the room.

Kindergarten Training and Reading Readiness

According to Durkin (1967), a child's readiness to learn to read -- or, more generally, his capacity for learning -- is the product both of maturation and of en-
vironmental factors. Within this framework, then, reading readiness can be defined as that capacity for learning to read which results from nature and nurture interacting with each other.

According to Gans (1963), who quoted Millie Almy (Child Development, Hold, 1955), readiness is an educational concept concerned with the timeliness of what we wish to teach the child in the light of his ability to make use of it. It would seem, therefore, that one should put emphasis on developing an understanding of the child's total development. One asks not only "Can the child learn this?" but also, "What effect will this learning have upon him?" Unfortunately, however, the concept of readiness, particularly in relation to reading, has often been taken in a much narrower sense . . . The answer too frequently is a program in which the child is to be given opportunities to practice the various elements involved in the reading process, without sufficient regard for the many other important experiences which he might be having, which in the long run would also contribute to his abilities for reading.

Reading readiness instruction is common in kindergarten, and studies show that children who have attended kindergarten are more likely to experience success in first-grade reading than those who have not.

Blanton (1972) found that: (1) the children who have attended kindergarten score higher on reading readiness
and reading achievement tests; (2) they catch on to reading instruction more quickly; and (3) they exhibit greater initial reading ability. He stated that kindergarten has a positive effect on reading readiness and on later reading achievement. However, he also stated that because a child learns to read before first grade does not guarantee he will maintain his reading gains. The gains tend to diminish by third grade, which is an effect produced by schools which fail to build on the child's early start in reading.

Silverbert (1972) tried to determine whether formal kindergarten training in reading readiness, in particular recognition of letters and numbers, does indeed result in higher reading levels by the end of the first grade and have lasting effects. His study consisted of four kindergarten classes in two schools. He had an experimental and a control class in each school, with each class having a different teacher. There were 110 children in all from middle-class homes. The experimental group was given 15 minutes of daily formal instruction on letter and number names. In addition, they discussed shapes of the letters and numerals, used flash cards, and played games. The control group adhered to the regular informal kindergarten program; indeed, the teachers were not aware of the experiment. All subjects were given the Gates Reading Readiness Test on three separate occasions -- before the experiment, after the experiment, and before the beginning of the first
grade. Each child was also given the Draw-A-Man Test. At the end of the first grade, the children were given the Metropolitan Achievement Test and the Wide Range Achievement Test (Word Recognition section). The results of this study showed that: (1) reading readiness (before the experiment) was found to be significantly related to a child's achievement by the end of the first grade; and (2) girls achieved better than boys. Silverberg concluded that accelerated training in readiness does not affect subsequent ability to read, but only affects scores achieved on readiness tests given after the training period. Children learn according to physiological readiness, regardless of attempts at accelerated achievement through readiness training. Artificially introducing formalized instruction at an early age does not seem to have any permanent effect. Children achieve the same reading level they would have had there been no special training. Therefore, maturational rates of children must be considered.

Kelly and Chen (1963) investigated the effects of formal reading instruction on kindergarten children with respect to reading achievement, attitude toward reading, and attitude toward school. The subjects used in a controlled experiment were 221 kindergarteners registered in two Livermore School District schools. They were classified on intelligence and reading readiness variables and randomly assigned to formal reading and readiness programs for
four months. Data were obtained from tests, profiles, and teacher-rating scales. Treatment of the data included an analysis of variance. The results showed that the students in the formal reading program achieved at a higher level in reading skills than did the students in the readiness instruction program. It was also found that reading habits and attitudes toward reading were related to the children's intelligence quotients and reading achievement levels but not with the type of instruction the children had received.

As stated by Monroe (1951), studies of reading achievement of kindergarten versus non-kindergarten children (children who have not had a kindergarten experience) at the end of the first grade show that kindergarteners as a group usually do better than non-kindergarteners. Children who will probably learn to read quickly are those who show the following characteristics. In social-emotional adjustments: they are cooperative and eager to learn; they are adjusted to group-learning situations; they seem eager to talk; and they are interested in hearing stories and in looking at books. In oral language: they have the oral vocabulary needed to express their ideas; they can formulate complete sentences; and they can organize ideas into language units and tell a picture story in a sequential manner. In interpretive skills: they are able to recognize the main idea in a picture story; they are able to make inferences and anticipate outcomes; and they are able
to form associations and remember ideas. In visual, auditory, and motor skills: they are able to recognize likenesses and differences in initial sounds; they have good eye and hand coordination; and they have good motor control in large-muscle activities.

As stated by Tinker (1971), many attempts have been made to teach reading at the kindergarten level. Tinker listed one of the more thorough studies reported by Paul McKee, Joseph E. Brzeinski, and M. Lucile Harrison in The Effectiveness of Teaching Reading in Kindergarten (The Denver Public Schools, 1966, Cooperative Research Project No. 5-0371). The main purpose of the study was to discover the effectiveness of reading instruction during kindergarten and the degree to which such reading instruction affected reading achievement in grades one to five. An attempt was made to discover whether such instruction was harmful or beneficial. First, it was noted that several studies had found that the age at which reading could be taught depended upon the method and materials used. The level of maturity (mental age) was not a determining factor for the time at which children began to read, except for children who were mentally retarded. The preliminary part of the program was to teach the kindergarten pupils the basic skills for beginning reading. These skills are: (1) Using only spoken context as a clue to the desired word, as, "Johnny drank his ______." The pupils supplied any word
that made sense. (2) Listening for beginning consonant sounds. (3) Distinguishing letter forms from one another. (4) Using oral context and the beginning consonant sound given by the teacher to choose the right word. (5) Associating letter sounds and forms so that when the pupil sees the letter form, he thinks at once of the sound. (6) Using spoken context and the seen beginning letter to determine the proper word. (7) Using the context spoken by the teacher and the undetermined printed word seen by the pupil who, recognizing the initial consonant, may speak the word correctly. After these teaching procedures were completed, additional instruction was given. Several other consonant letter-sound associations were taught and used to identify words when the spoken context was given. Fourteen service words that make up one-fourth of the printed English language were taught. Then, near the end of the year, pupils read preprimers and parts of the basal readers used in their school. In addition to the kindergarten groups assigned to the experimental program, a control group was taught with materials and methods ordinarily used in the Denver schools. The main focus in the control group was on developing reading readiness. Then, in the intermediate grades, emphasis was placed upon improving speed and comprehension, use of reference books, the mastery of specialized reading skills, and word analysis. In grades one through five, appropriate basal readers plus supplementary
reading materials were used. This program was similar to programs followed in many schools throughout the country. In contrast, the experimental program provided for early, sequential development in the kindergarten of skills basic to reading, to be followed by an adjusted and accelerated program in the later grades. It was found that, in the later grades, progress in reading was faster in the experimental group than in the control group.

There were four groups involved in the experimental program: (1) Control Group I had the regular reading program in grades one through five. (2) Group II had the regular kindergarten program but later had an experimentally adjusted program through the first five grades. (3) Group III had the experimental program in kindergarten but had the regular reading program in grades one through five. (4) Group IV had the experimental program in kindergarten and the adjusted experimental procedures in grades one through five.

Evaluation of progress in reading in each of these groups was made periodically throughout the period of the experiment, that is, from kindergarten through the first five grades. Standardized and informal tests were used. Elaborate statistical analyses were made to compare the progress of the four groups in an attempt to determine the long-range effectiveness of teaching reading in kindergarten, as measured at the end of grades one, three, and
The investigators in this study found that reading instruction in the kindergarten resulted in higher levels of reading achievement, through grade five, for all groups with the exception of Group III. But the maximum gains were achieved only when the program in the later grades was adjusted to capitalize on the achievement in the kindergarten. Otherwise, the gains disappeared by the end of the second grade. Although some of the kindergarten children learned to read, others did not progress that far. And when, after regular kindergarten, pupils beginning first grade were given the same program as used with the group in the experimental kindergarten followed by the adjusted accelerated instruction through grade five, they were next to the experimental group in reading achievement.

Methods of Teaching Reading

Lowell (1971) conducted a study to determine the effectiveness of the factors of visual discrimination, audio discrimination, visual memory, knowledge of alphabet letter names, concepts, word learning ability, and mental ability as predictors of: (1) success in acquiring initial reading vocabulary, and (2) reading achievement at the end of the first grade. Subjects for this study consisted of 200 beginning first-grade pupils from self-contained classrooms in a public school system. Instructional groups were
formed within the classrooms using kindergarten recommendations, teacher judgment, and reading readiness scores. Readiness tests were given (Murphy-Durrell; Lee-Clark; Tests of General Ability, Form A, Grades K-1; and visual subtest of Murphy-Durrell Diagnostic Test). When the children finished the preprimer, they were given a word-recognition test of 78 words found in the preprimer they were taught to read. Harper and Row's Basal Reading Series was used in all groups, regardless of readiness. At the end of first grade, individual reading achievement tests were given to determine predictive ability of the above various readiness factors. Results showed that knowledge of alphabet letter names emerged as the best single predictor of reading readiness and that word-learning ability had borderline value as a predictor.

Methods of teaching reading were studied to determine the effectiveness of or the extent to which reading instruction was responsible for reading failure or reading success. The three methods studied were the: (1) basal reading program, (2) linguistic method, and (3) modified linguistic approach. The subjects, 324 boys and girls from sixteen schools in the Syracuse area were used in this study. Franga, Stinson, Sheldon, and Peebles (1969) administered the Stanford Achievement Test, Primary II Battery. The results of the Word Meaning subtest were compared with those given at the end of grade two. Comparisons were made in
two ways. All children were compared on Word Meaning. Comparisons were made according to the treatment group to which the children had been assigned in grades one and two. A test for groups of unequal size was used to ascertain if there was a significant statistical difference. The results revealed that the difference between the variances for each treatment group was not marked for the Basal Reader or the Linguistic Reader groups. The Modified Linguistic group did not show a significant difference but it was favored over the other two methods in this series. There was not enough evidence to show that it was an influential factor of reading achievement.

**Family Background and Social Influencing Factors**

Durkin (1963) examined the future value of an early start in reading and also showed what type of family backgrounds promoted early readers. The subjects were 4,465 first-grade students enrolled in New York City public schools, and they represented a fairly equal distribution among the different socioeconomic classes. From the group of 157 children identified as early readers, a group of 30 was randomly selected as a special experimental group. From the remaining non-reader first-grade group, 30 comparable students were selected at random in terms of scores from a group intelligence test, of the same sex, and with the same first-grade teacher. Home interviews
with the families of the 30 early readers (experimental) and 30 non-early readers (control) were held. The results showed that more parents of early readers than of non-early readers were foreign born. The educational level of the mothers of early readers was higher than that of the mothers of non-early readers. Early readers tended to come from smaller families. Early readers walked and talked at earlier ages according to parental reports. Parents of early readers said their children spent less time before the television set, but they reported there was an influence of television commercials on their children's preschool interest in words. Early readers (before first grade) were described as being content with quiet activities -- such as puzzles, coloring, painting, and drawing.

Jones (1972) examined variables of the home environment in relation to differences in children's cognitive development. The subjects of the sample were fifth-grade boys (in the 10-12 year age range). During the first stage of sample selection, all the boys of six fifth-grade classrooms and five elementary schools were administered Raven's Progressive Matrices Test. Boys having an I.Q. within the 90-130 range were given a measure of verbal ability. From these 139 boys, 29 pairs were selected. Each pair was matched for general intelligence (to within one I.Q. point) but was discrepant with respect to verbal ability. Home environment measures were obtained by means of a 70-minute
interview with the mothers of 50 fifth-grade boys. Results revealed that high-verbal boys compared with low-verbal boys were found to be from homes where parents: have higher academic and vocational aspirations; have provided more opportunities for use and development of language; and have higher occupational status.

Hunter and Johnson (1971) tried to discover how the non-reader differed from the child who reads at age-grade level or better with respect to historical, familial and developmental factors and psychological test performance. Their subjects were 20 boys with a mean age of 9-9 and a reading retardation mean of 2.4 years. These boys made up the reading disability group. There were also 20 control subjects with a mean age of 9-11, and they were selected to match the reading disability group in terms of age, sex, grade, race, intellectual level, and socio-economic status. The control group was composed of readers who were accelerated by a mean of 1.9 years. Each child was given the Wechsler Intelligence Scale for Children, the Wide Range Reading Test, Bender-Gestalt, Draw-A-Man, Wepman Auditory Discrimination, and a test of handedness. A questionnaire was completed by the parents on prenatal, perinatal, and postnatal behaviors plus 28 other specific behaviors. The results showed that the groups differed significantly on familial incidence of dyslexia, tested laterality, self-confidence, attentional factors, birth order, age of crawl-
ing, and age at school entry. Significant correlations were found between tested attention and reading proficiency. Significant correlations were found between percent of right hand dominance and reading proficiency.

Zwier (1973) identified psychosocial characteristics of superior and average readers. Her subjects involved 300 children enrolled in conventional public schools selected on the basis of teacher ratings of overall reading performance. The subjects were interviewed in small groups by a trained examiner in an attempt to obtain their perceptions about themselves. Factors that positively related to superior reading were: the father's education, the number of cultural activities in which the student had participated during the past week, the number of volunteer memberships in clubs or extramural classes, and the number of nights spent away from home since entering school. Factors negatively related to superior reading were: the number of persons living in the home under the age of 18, and the ratio of persons per room. Superior readers were found to be from homes with parents having considerable education and in which the children were encouraged to participate in school and community activities.

**Reading Achievement**

Adequate measurement of success in learning to read presents many problems. Reading is much more than the mere
recognition of words. Some measurement of the child's ability to handle larger units is essential. Even though a child may be tested on word recognition, problems arise when appraising the child's understanding of what he has read.

According to Barrett (1967), evaluation describes progress, and it also assumes that knowledge is available regarding where each student began. Therefore, it is necessary to give pre- and post-testing in the area (in this case reading) to be evaluated.

Evaluation is a continuous process, and it requires adequate samples of a student's work. An evaluation technique must offer some promise that the student will be able to engage in the behavior called for by the objective toward which the student is to be making progress. Evaluation is a learning situation. It must allow the student to see himself in a new light, to learn something new about what progress he has made, and in what new directions he might move. Evaluation is open-ended. It opens new doors and points ahead rather than backward.

A pupil is guided in his steps of reading development partly in terms of the growth he has made. Evaluation should also consider the direction or the goals toward which each pupil is being guided. According to Gans (1958), an evaluation of reading progress not only needs to be a continuous part of the program, but must also be focused on: (1) the growth of each pupil in terms of his past
progress and the larger goals of the curriculum, and (2) the adequacy of the curriculum for pupil growth, content, and direction.

Howes and Darrow (1968) examined the values of an early start in reading. They compared, at the end of the third grade, the reading achievement of 49 early readers with the reading achievement of children who had started school with them, who had the same teachers as they did, and who had comparable mental ability, but were not able to read when they started first grade. There was no apparent relationship between the child's I.Q. (Kuhlmann-Anderson Intelligence test) and his or her achievement score in reading, so the control group was changed to include only those children who had been given the Revised Stanford-Binet Scale by a school psychometrist. The experimental group consisted of 25 of the 49 early readers with I.Q.'s ranging from 91-161, and the median I.Q. was 114.8. Reading scores based on tests administered by the school toward the end of the third grade showed grade levels ranging from 4.4 to 6.0 with a median of 5.0. The control group consisted of 201 children who entered first grade with the 25 preschool readers, but who could not read when they started school. Their I.Q.'s ranged from 70 to 191 with a median of 110.2. Reading achievement scores ranged from 2.0 to 6.0 with a median of 4.3. From this a twofold comparison was made between the children with I.Q.'s of 120 or
less and those with I.Q.'s higher than 120. The group of children with I.Q.'s of 120 or less included 129 non-early readers. It was found that the children who were early readers had higher scores in reading than was predicted on the basis of I.Q. The greatest single difference in terms of years of reading achievement was 1.3 years. The smallest difference was 0.2 years. This showed that the children appeared to have profited from an early start, and that the lower the child's I.Q., the greater the advantage of starting early.

For the second group of children who had I.Q.'s higher than 120, the school administered reading tests which were not difficult enough to establish upper limits of achievement for the brighter child in either the control group or the experimental group.

Hopkins and Brachet (1971) examined the stability of reading vocabulary and comprehension. In their study, they used three large samples of students over the period of time covering grade one to grade eleven. Substantial long-term stability was reflected in both types of tests; grade one scores correlated above .50 with all subsequent measures. By the end of the primary grades, students' scores correlated above .70 with all subsequent measures. When the coefficients were correlated for attenuation to allow an estimate of the relationships after errors of measurement on the test were removed, the values were higher by
about .10. From this study, Hopkins and Brachet concluded that early performance in reading does not represent temporary maturational status for most pupils, but has substantial relationship with terminal achievement levels in both reading vocabulary and comprehension.

Durkin (1966) reviewed several reports which indicated that some children can be taught to read before the age of six in both school and out-of-school situations; that preschool experiences having in them some elements of reading can have a positive effect on first-grade achievement in reading; and that among groups of gifted adults who are superior readers, some report having learned to read before the first grade.

In 1958, 61 schools in Oakland participated in a study by Durkin in which 5,103 first-grade children were tested. The initial test of 37 words was administered individually and orally to each subject. All the testing was done within the first seven days of the school year, before classroom instruction in reading began. Test results indicated that 49 children in 27 schools qualified as possible subjects. Of these 49 children, comprising slightly less than one per cent (.0096) of the population tested, 20 were boys and 29 were girls. The group consisted of 26 Caucasians, 12 Negroes, and 11 Orientals.

These 49 children were administered the Gates Reading Tests - Primary Word Recognition and Primary Paragraph
Reading. All 49 children were able to score on both of these tests. The results were individual median scores ranging from 1.5 to 4.5 on a grade-level norm scale. The median grade score for the total group was 1.9.

In Table 1, the reading achievement data is summarized for the early readers over a six-year period. It also shows the correlation between achievement and intelligence. A comprehensive look at this Table shows that children who first learned to read at home did not seem to encounter problems with reading, once school instruction began. Over a period of six school years, seven years of growth were made in reading -- at least according to the group data described by the median grade-level scores.

In Table 6, data are given of the reading progress of the 49 early readers over a five-year period, as related to various factors in the preschool learning of the children. When the families of the early readers were interviewed, it was revealed that none of the subjects learned to read early by himself. There was productivity from the child's questions, answers given, and achievement from informal help at home. In Table 6, the category "Age Started" indicates the age of the subject when help with reading was initiated at home. "Frequency" refers to both the frequency and the regularity of help as described by the parents. "Intent" shows whether or not the help given at home was described as a deliberate attempt to teach a pre-
Table 1.

Reading progress of the early readers over a six-year period and the relationship between this progress and their intelligence

<table>
<thead>
<tr>
<th>Date of Testing</th>
<th>Reading Grade-Level</th>
<th>Correlation between Reading Achievement and Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median</td>
<td>Range</td>
</tr>
<tr>
<td>Sept. 1958 (N=49) (Grade 1.0)</td>
<td>1.9</td>
<td>1.5 - 4.5</td>
</tr>
<tr>
<td>May 1959 (N=49)</td>
<td>3.7</td>
<td>2.3 - 5.6</td>
</tr>
<tr>
<td>Sept. 1959 (N=49)</td>
<td>4.0</td>
<td>2.3 - 6.5</td>
</tr>
<tr>
<td>May 1960 (N=49)</td>
<td>4.9</td>
<td>3.3 - 8.9</td>
</tr>
<tr>
<td>May 1961 (N=40)</td>
<td>5.3</td>
<td>4.4 -10.6</td>
</tr>
<tr>
<td>May 1962 (N=49)</td>
<td>6.7</td>
<td>4.8 -11.2</td>
</tr>
<tr>
<td>May 1963 (N=49)</td>
<td>7.6</td>
<td>5.0 -11.7</td>
</tr>
<tr>
<td>May 1964 (N=34) a</td>
<td>9.0</td>
<td>5.1 -12.3</td>
</tr>
</tbody>
</table>

a. Because 15 of the original subjects had been double-promoted, only 34 were still in elementary school in the last year of the study.

Table 6.
Reading progress of the 49 early readers, over a five-year period as related to various factors in the preschool learning

<table>
<thead>
<tr>
<th>Preschool Help</th>
<th>Intelligence Quotient</th>
<th>Reading Grade-Level: Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age started</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 years</td>
<td>13</td>
<td>91-160</td>
</tr>
<tr>
<td>4 years</td>
<td>22</td>
<td>99-161</td>
</tr>
<tr>
<td>5 years</td>
<td>14</td>
<td>93-151</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often and regular</td>
<td>21</td>
<td>91-159</td>
</tr>
<tr>
<td>Less often and regular</td>
<td>21</td>
<td>93-151</td>
</tr>
<tr>
<td>Intermittent</td>
<td>7</td>
<td>99-161</td>
</tr>
<tr>
<td>Intent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deliberate</td>
<td>11</td>
<td>91-151</td>
</tr>
<tr>
<td>Not deliberate</td>
<td>38</td>
<td>93-161</td>
</tr>
<tr>
<td>Source</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent only</td>
<td>21</td>
<td>91-160</td>
</tr>
<tr>
<td>Sibling only</td>
<td>4</td>
<td>93-159</td>
</tr>
<tr>
<td>Combination of people</td>
<td>24</td>
<td>96-161</td>
</tr>
</tbody>
</table>

school child to read. "Source" has to do with the people in a young child's life who gave him some help with reading.

In reviewing the data on Table 6 and on Table 7, there is an apparent relationship toward the end of the study between reading achievement and intelligence. The close relationship means that intelligence accounted for a large percentage of the variance in reading achievement at the end of the research.

In Table 8 a pronounced relationship is shown between a subject's reading achievement and his intelligence, at the conclusion of five years of school. The children who started to read at an earlier age entered first grade with superior achievement in reading; and they also maintained their lead over a five-year period.

A second study was made in 1961 by Durkin to investigate the preschool years of both early readers and non-early readers. This study took place in New York City, and the subjects were chosen by means of the same two-step testing procedure that was used in the Oakland study. The early readers numbered 156 children who were enrolled in 33 schools. Results of the standardized reading tests, which were used in identifying the 156 subjects, showed median scores ranging from 1.4 to 5.2, according to grade-level norms. The median grade score for the group was 2.0. Results of the Stanford-Binet Intelligence Scale (Form L-M,
Table 7

Reading achievement of non-double-promoted subjects in the sixth year of the research, as related to various factors in the preschool learning.

<table>
<thead>
<tr>
<th>Preschool Help</th>
<th>Number of Subjects</th>
<th>Intelligence Quotient</th>
<th>Reading Grade-Level: May, 1964</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Range</td>
<td>Median</td>
</tr>
<tr>
<td>Age started</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 years</td>
<td>6</td>
<td>91-141</td>
<td>128</td>
</tr>
<tr>
<td>4 years</td>
<td>17</td>
<td>99-161</td>
<td>109</td>
</tr>
<tr>
<td>5 years</td>
<td>11</td>
<td>93-161</td>
<td>119</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often and regular</td>
<td>14</td>
<td>91-149</td>
<td>114</td>
</tr>
<tr>
<td>Less often and regular</td>
<td>16</td>
<td>93-133</td>
<td>109</td>
</tr>
<tr>
<td>Intermittent</td>
<td>4</td>
<td>99-161</td>
<td>128</td>
</tr>
<tr>
<td>Intent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deliberate</td>
<td>10</td>
<td>91-149</td>
<td>114</td>
</tr>
<tr>
<td>Not deliberate</td>
<td>24</td>
<td>93-161</td>
<td>110.5</td>
</tr>
<tr>
<td>Source</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent only</td>
<td>13</td>
<td>91-149</td>
<td>108</td>
</tr>
<tr>
<td>Sibling only</td>
<td>2</td>
<td>93-112</td>
<td>102.5</td>
</tr>
<tr>
<td>Combination of people</td>
<td>19</td>
<td>96-161</td>
<td>121</td>
</tr>
</tbody>
</table>

Table 8

Reading progress of the 49 early readers over five school years, as related to chronological age, mental age, and intelligence quotient when home help with reading began

<table>
<thead>
<tr>
<th>Chronological Age in Years</th>
<th>Mental Age in Years</th>
<th>Intelligence Quotient</th>
<th>Reading Grade-Level: Median</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median</td>
<td>Range</td>
<td>Median</td>
</tr>
<tr>
<td>3.5 (N=13)</td>
<td>4.5</td>
<td>3.2-5.6</td>
<td>128.0</td>
</tr>
<tr>
<td>4.5 (N=22)</td>
<td>5.0</td>
<td>4.5-7.2</td>
<td>111.5</td>
</tr>
<tr>
<td>5.5 (N=14)</td>
<td>7.0</td>
<td>5.1-8.3</td>
<td>127.0</td>
</tr>
</tbody>
</table>

1960 Edition) showed intelligence quotients that varied from 82 to 170. The median intelligence quotient was 133.

From the group of 156 children, 30 children were randomly selected as the special experimental group. It was comprised of 19 boys and 11 girls who were attending 18 schools; 28 of the children were Caucasians and 2 were Negroes. The grade-level reading scores of this special experimental group ranged from 1.5 to 5.2, at the beginning of first grade. The median grade-level score was 2.1.

The control group consisted of 30 non-early-readers selected on the basis of I.Q. scores, derived from the Pintner-Cunningham Intelligence Test (Primary Test, Form A, 1938 Edition).

In Table 16 the reading achievement of the 156 early readers in the New York study is summarized over a three-year period; also shown is the relationship between achievement and intelligence, (intelligence as measured by the Stanford-Binet scale).

During a three-year period, reading tests were administered to the 30 early readers and to the 30 non-early-readers paired with them on the basis of Stanford-Binet I.Q.'s.

Two conclusions about these comparably bright groups of early readers and non-early-readers may be stated. First, the average reading achievement of the early readers was significantly higher than that of the non-early readers.
**Table 16**

Reading progress of 156 early readers over a three-year period, and the relationship between progress and intelligence

<table>
<thead>
<tr>
<th>Date of Testing</th>
<th>Reading Grade-Level</th>
<th>Correlation between Reading Achievement and Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept. 1961</td>
<td>2.0</td>
<td>.24</td>
</tr>
<tr>
<td>May 1962</td>
<td>3.7</td>
<td>.44</td>
</tr>
<tr>
<td>May 1963</td>
<td>5.1</td>
<td>.52</td>
</tr>
<tr>
<td>May 1964</td>
<td>6.1</td>
<td>.44</td>
</tr>
</tbody>
</table>

over a three year period; and, secondly, the advantage in achievement seems especially pronounced for the early readers who were accelerated.
CHAPTER 4

READING THROUGH RELATED EXPERIENCES

The reaction of the home and the school to a child's reading skills has a very pronounced effect on the beginning reader. Children are influenced by the importance which is attached to learning to read. Getting the right start in learning to read is of greatest importance. It is during this period that the child develops attitudes toward self and reading.

As stated by Heilman (1967), self confidence is very important for the beginning reader. The type of home the child comes from and the relations he has with his parents and other adults will affect his confidence before he gets to school. Children entering school have patterns of behavior which will reflect experiences of rejection, over-protection, success and personal inadequacy.

In studying the maturing process of children as evidenced by their behavior, M. Lucille Harrison stated (1949) that readiness to do things appears at rather definite periods or within certain age limits and that to force a child to do a particular type of activity before he is ready usually causes strain, may result in negativistic attitudes toward it, and accomplishes little so far as the desired activity is concerned.
According to Fowler (1962), play is essentially the chief mode of activity of the child. Play involves, on the part of the child, constant and active experimentation in real and fantasied situations. The child moves at his own pace and in his own terms. The key features to be stressed are: (1) participation on a fantasy level; (2) an active, manipulative manner of participation; (3) the "function pleasure" involved in sensory-motor experience; (4) the simple achievement and problem-solving satisfactions; and (5) the extensive use of object and social role modeling. These are all desirable if the young child is to be really motivated and to learn the material presented.

Experiences at Home

As stated by Gans (1958), reading readiness and the period of beginning reading are difficult to separate into two distinct stages. A child may have experiences starting at the age of less than one year from which he may have been gaining a vocabulary. These experiences and his vocabulary are prerequisite to reading. He may observe reading done by his father, mother, and an older brother or sister. He may have had stories read to him. He may have been able to select the book from which the story was read, or he may have been allowed to turn the pages. He may look at the pictures, preferring certain ones to others. This use of pictures adds to the many meanings he is acquiring and
increases his interest in printed material in which pictures appear. The child may see his family choosing letters from the mail by reading the addresses. He may also become acquainted with various household articles by recognizing labels, and he may recognize his own name. All this compromises the reading readiness and reading background of a child before he comes to kindergarten or first grade.

Tinker stated (1971) that the very young child enjoys helping his mother and, whenever possible, his help should be welcomed and directed so as to insure him pleasure and satisfaction from his efforts. The child may wish to set the table for dinner and, in so doing, he is beginning to develop the idea of counting as he places the silverware for each member of his family. At the age of two or three, children are especially interested in the preparation of food, and they enjoy watching their mothers cooking. They can take a small part in whatever she is doing, such as handing her a spoon or frosting a cookie or two. Later, the child will be proud to pass the cookies to others in the family or to guests. These and other shared activities help in the development of motor skills and also help to provide natural opportunities for encouraging conversation and adding to his vocabulary.

Other jobs around the house that could be of interest and of value to the very young child are putting papers in the wastebasket, wiping up a wet spot on the floor, bringing
in the paper, shutting the door, and even helping to clean the bathroom and make the beds. Even when what a child does has to be done over, his efforts should be rewarded with recognition and approval. Experiencing success in these first ventures is of great importance. Even the very young child will learn to follow directions, develop motor skills, and increase his vocabulary. At the same time, he will be enjoying the companionship of someone he loves, finding pleasure in helping, in learning to do new things, and in the approval received for his efforts and accomplishments.

The three and four year old can begin to take on tasks which he does regularly. One of these tasks may be undressing as he can delight in doing this. With a little encouragement and frequent reminders, he will be learning to hang up his clothes. Dressing is more difficult, but with guidance, he will finally master pulling up the zipper, putting a button in its hole, and even tying his shoes. This will give him a great feeling of pride and accomplishment. He can also regularly help in making his bed and in picking up his toys. Putting things in order will not in itself have much meaning for him, but he may be interested in seeing if he can get his toys back on the shelf and his picture books back in the bookshelf.

Tinker (1971) also stated that all children should have crayons and paper, at first just for scribbling, and later
for drawing and coloring. Soon the child will be making designs that are meaningful to him, and he may enjoy talking about what he has put on the paper. While using crayons, he is beginning to learn eye-hand coordination. As he grows older, he will enjoy coloring pictures printed in outline form. This will help him learn to distinguish colors and to use them appropriately. Another drawing activity enjoyed by older children is connecting a series of dots with a line which will outline an object, such as an animal, a person, or a house.

Many meaningful activities can be provided for the child. Body parts can be taught to the child by having him touch or point to parts of his body and then name them. Learning the differences between sizes of objects can be developed by arranging objects from smallest to bigger to biggest. Children can also learn to identify figures of different shapes and to name them. Tinker (1971) stated that each object or shape should be described, such as showing that the square has four sides and that every side is the same length. After the child understands these shape concepts, he can then locate objects around the house that have these particular shapes.

The use of a "magic box" can give the child experience in naming objects and talking about them. The child can reach into the box, take an object out of the box, name the object, and tell what it is used for.
Television tends to become an exciting experience for young children. Some programs provide good educational material. For example, the program "Sesame Street," prepared by the Children's Television Workshop, is designed specifically to aid the child's growth in acquiring reading skills. In viewing this daily program, children learn about themselves and the world around them. The viewing of television by preschool children does increase their vocabulary. Tinker (1971) stated that it has been demonstrated that children who have been viewers of television during the preschool years have acquired a vocabulary about one year beyond that of children who have not had television experience. Therefore, this more advanced vocabulary may help the children who have watched television to get off to an accelerated start in reading vocabulary when they enter first grade.

Experiences Outside the Home

Tinker (1971) stated that as soon as a child is walking and is steady on his feet, he is ready to explore the yard at his home. He will find such things as pebbles, ants, worms, other insects, and plants. As he grows older, he can take a small part in planting flower seeds, watching the plants come up, watering the garden, and picking the flowers. He can also help gather up the lawn clippings or the dry leaves. Helping in the yard can be fun for him. He
can even be given a few of his own tools, such as a rake, a
spade, or a small watering can.

If the child is provided with a sandbox or a pile of
dirt where he can play with his pail, shovel, and dump
truck, he will probably initiate imaginative play differing
from what he does in the house.

Walks around the neighborhood with one or both of his
parents will be interesting to the young child. In crossing
streets, he will begin to learn the meaning of stop signs
and to watch for cars coming around the corner. He will en-
joy watching the traffic and will later distinguish between
trucks and cars. If the parents become active in these ad-
ventures, answer questions, point out and explain objects
and places of interest, and after getting home talk about
what they have seen and done, the child will be adding new
words and many bits of information to his small but rapidly
increasing store of knowledge.

A nighttime out-of-doors excursion can provide an in-
teresting experience for the small child. With a flashlight
in hand, the child can explore familiar places at night that
may seem new and mysterious. There is darkness all around,
but the moon and the stars are bright. Flashing his own
light, the child can make bright spots on familiar objects.
He may even see eyes shining out of the darkness and find
that they belong to a cat. There are sounds, too. A bird
chirps in a tree, footsteps are heard, or an airplane
rumbles in the sky above. As Tinker stated (1971), new sights and sounds and other sensations require new words if they are going to be talked about, and the eager child learns them rapidly in conversation with interested parents.

Trips outside the neighborhood can also have high educational value. A trip to the post office can teach a child about sending and receiving letters and packages through the mail. He can see how the clerks sell stamps, weigh packages, and sort the mail. He can see the places to put outgoing mail in slots inside the post office or in large mailboxes outside. At the back of the building, he may be able to see men loading or unloading bags of mail on the mail trucks.

Similar trips will widen his horizon and prepare him for what he will read and study about when he goes to school. Other places of interest may include: grocery store, bank, pet shop, gas station, zoo, city parks, department store, library, and many others.

On long trips in the car, the children can play simple games based on what they see on the way. For example, counting animals, kinds of cars or colors of cars.

Talking over excursions afterward with the child and encouraging him to tell others about it can greatly increase its value to him as a learning experience. He needs practice in using all the new words he learned while on the trip. What he has learned can be followed up by pictures
and stories relating to it. They can also relive their experiences by imaginary play.

**Experiences at School**

The home is the kindergartener's first interest, and conversation about it may do much to broaden and clarify a child's concepts. Homes and furnishings vary as well as the people who are there, the work done in them, and the child's place in the home.

The child's background should be widened and enriched as much as possible. As stated by Lamoreaux and Lee (1943), anything in the world about the children which is within their understanding can be made a vital part of their experiences. This can be done through the experience of hearing stories, telling stories, and having stories read to them. They need the experience of expressing ideas and feelings in stories, poems, music, rhythms, modeling, painting, and constructing.

Other activities providing experiences for children could include: watching workmen build a house; watching plants grow; watching a bird build a nest; going to a farm; going to the park; going to the library; going to the zoo; and, going to a garage, lumber yard, or bakery. The most important part of these experiences could be in what happens afterwards. There should be a discussion, answering questions and noting observations of the children. A related
vocabulary can tie in with the experience, and together the teacher and the children can write a story. To enrich the experience further, art materials could be made available for the children to express their own concepts.

Real experiences do not need to be limited to areas outside the school premises. Much experience will take place within the classroom. These experiences can be more adaptable, more under the control of the teacher, can be continued over a longer period, and may be better adjusted to the particular needs of particular children. Some of the more valuable experiences may include:

1. Bringing pets to school. The child may tell about them, their care, and what they can do and cannot do. The group may assume the responsibility of caring for the pets while they are at school. Depending on the pet, they may be kept for a few hours to several weeks.

2. Watching the habits of birds. This can include their fall migrations and spring returns, nesting habits, and care of the young. These activities may be reported as the children note interesting happenings.

3. Developing a science corner. They can have cocoons, shells, cotton, wool, nests, polliwogs, silkworms, an ant hill, and various kinds of insects.

4. Collecting shells, rocks, seeds, plants, nuts, leaves, or flowers. They can begin to learn classification and organization.

5. Caring for window boxes. The children may plant the seeds, transplant the seedlings, and care for them while
6. Caring for an aquarium. The children may watch the fish develop and grow.

7. Constructing something, either as a toy model or as a usable article. The amount of detail may be varied according to the ability of the child and the time involved. Large construction plays an important part in coordinating body movements. As Lamoreaux and Lee stated (1943), many slow-learning readers do not coordinate well, and they are given large construction activities to develop that power.

It is important for the teachers who are preparing children for reading to be aware of the experiences and growth which have taken place during the preschool years. Some children may have had many pleasant experiences with books and others may have derived many concepts important to developing reading skills from contact with adults, from travel, or from viewing television. On the other hand, some children may have had very few reading related experiences. The curriculum of the school should be related to the child's previous development and it should build on previous experiences. Even before the child begins to read, the many activities included in the curriculum should be related to reading. The activities and experiences are bound together with language and communication, and reading is an extension of the communicative process which involves learning the printed equivalent for the known spoken symbols.
CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to review the literature and research (1) related to prediction of success in reading achievement, and (2) related to differences in reading achievement between children who learned to read prior to six years of age and children who did not learn to read until they were six years of age or older.

The significance of the study was based on the premise that reading ability is an important mastery to all subject matter, and that there are many differences of opinion as to the method and to the time in a child's life in which reading should be taught.

Various research studies and related literature were reviewed to determine whether success in reading achievement could be predicted through use of selected factors, and whether there are differences in reading achievement between children who learned to read earlier than six years of age and children who learned to read at age six or at a later age.

SUMMARY OF FINDINGS

Major findings of this study were as follows:
1. The effect of prereading programs showed that prereading activities should be directed toward the tasks to be performed in reading. Preparation for reading should include activities with printed language to develop visual discrimination, left-to-right progressions, and concepts of language.

2. Use of reading tests is for the purpose of identifying pupils who are ready to read and for diagnosing an individual child's deficiencies in skills considered prerequisite to success in reading.

3. Reading habits and abilities are related. Reading reflects a wide spectrum of intellectual skills, and success in learning to read reflects an underlying maturational process.

4. Kindergarten training and reading readiness does not always have a permanent effect. Accelerated training in readiness does not affect subsequent ability to read, but it does affect scores achieved on readiness tests given after the training period. Children learn according to physiological readiness.

5. Methods of teaching reading do not merely rely on the materials used, but a successful program depends upon the right combination of instruction. The different approaches are not exclusive of each other.

6. Studies of the relationship between reading achievement and family background and social influencing
factors revealed that superior readers were from homes with parents having considerable education and in which the children were encouraged to participate in school and community activities.

7. Reading achievement involves much more than the mere recognition of words. It also involves an understanding of what has been read. A pupil should be guided in his steps of reading development according to the growth he has made.

8. Experiences at home may provide many meaningful activities for the child. These activities can help the child to develop attitudes toward self and reading, and they can also affect the child's pattern of behavior.

9. Experiences outside the home can provide more interesting activities for the child. These activities can broaden the vocabulary, and they can develop better visual and auditory awareness.

10. Experiences at school should widen and enrich the child's background as much as possible. These experiences can take place within the school-room as well as in areas outside the school premises.

CONCLUSIONS

The findings of the present study indicated that pre-reading programs helped to prepare a child for reading.
There were, however, differences in the maturation of the children which should be taken into account. Although a child might learn to read before the age of six years, there was no guarantee that he would maintain his reading gains. Studies indicated that these gains tended to diminish by the latter part of second grade or during third grade.

The findings of the present study also indicated that children who were superior readers came from homes in which the parents had a considerable education. Experiences at home or at school could help to provide many meaningful activities for the child, and thus, help the child to develop attitudes toward self and reading.

The findings also indicated that reading was much more than the mere recognition of words. Some measurement of the child's ability to handle larger units was essential. It was found that a child should be guided in his steps of reading development partly in terms of the growth he had made. Therefore, evaluation was necessary and the evaluation also included the goals toward which each pupil was being guided.

**RECOMMENDATIONS**

Based on the findings and conclusions of this study, the following recommendations are made:
1. Prereading activities should include printed language to develop visual discrimination, left-to-right progression, and concepts of language.

2. Readiness tests should be administered for the purpose of securing data for planning experiences.

3. Parents and teachers should encourage and motivate children to develop good reading habits since reading habits and reading abilities are related.

4. Children should learn to read according to their physiological readiness. Artificially introducing formalized instruction at an early age does not seem to have a permanent effect.

5. Reading instruction should be concerned with individual differences.

6. Reading instruction should incorporate the best techniques and materials from many approaches.

7. Parents should help their children to get the right start in learning to read, that is, children need to develop self confidence.

8. Parents and teachers should provide children with experiences and materials that will enable the children to develop reading skills.

9. Growth in reading should be treated as developmental, and all skills should be reinforced and extended.
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