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## **An analysis of the predictive validity of the Lee-Clark Reading Readiness Test as used in the Athol schools.**

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AN ANALYSIS OF THE PREDICTIVE VALIDITY  
OF THE LEE-CLARK READING READINESS TEST  
AS USED IN THE ATHOL SCHOOLS

DURNFORD - 1961

AN ANALYSIS OF THE PREDICTIVE VALIDITY OF THE LEE-CLARK  
READING READINESS TEST AS USED IN THE ATHOL SCHOOLS

by  
Gordon C. Durnford

A problem presented in partial fulfillment  
of the requirements for the  
Master of Education Degree  
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University of Massachusetts  
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TABLE OF CONTENTS



## TABLE OF CONTENTS

	Page
TABLE OF CONTENTS .....	iii
LIST OF TABLES .....	vi
Chapter	
I -- INTRODUCTION .....	2
Background of the Study .....	2
Purpose of the Study .....	7
II -- REVIEW OF THE LITERATURE .....	9
Introduction .....	9
The Concept of Reading Readiness .....	9
Summary .....	25
The Appraisal of Reading Readiness .....	26
Summary .....	45
III -- AN ANALYSIS OF THE LEE-CLARK READING READINESS TEST .....	48
Composition of the Tests .....	48
Purposes and Uses of the Tests .....	48
Norms .....	49
Limitations of the Test .....	51
Summary .....	53
IV -- DESIGN OF THE STUDY .....	56
Summary .....	61
V -- ANALYSIS OF THE DATA .....	64
Summary .....	66
VI -- SUMMARY AND CONCLUSIONS .....	69
Restatement of the Problem .....	69
Description of Procedures .....	69

TABLE OF CONTENTS - Continued

	Page
Results of the Study .....	70
Conclusions .....	72
Limitations of the Study .....	74
Recommendations .....	76
APPENDIX .....	79
BIBLIOGRAPHY .....	88



LIST OF TABLES

## LIST OF TABLES

Table Number	Page
1. -- Results Obtained from the Statistical Analysis of the Raw Scores of First Grade Pupils in Athol Public Schools on the Lee-Clark Reading Readiness Test and Four Achievement Tests.	66
2. -- Raw Scores Obtained by 163 First Grade Pupils in Athol Public Schools on the Lee-Clark Reading Readiness Test and Four Scott-Foresman Company Reading Achievement Tests Arranged According to Rank Order of Scores on the Readiness Test.	79

CHAPTER I  
INTRODUCTION



## CHAPTER I

### INTRODUCTION

#### Background of the Study

The use of standardized tests in the schools of our country for a variety of purposes is a well-established practice. Educational psychologists have attempted to devise valid and reliable tools of measurement that might be used by school personnel in evaluating both the child and the school program. Research has led to the continual development of improved methods and tools of appraisal. Standardized tools of measurement have been devised for nearly all areas of the school program and for nearly any purpose. This seems to be in keeping with the great advances being made in technology and science today. Along with this tremendous growth in the scientific method has come a corresponding advancement in the application of the scientific method to the process of evaluation.

However, many school personnel place tremendous weight and importance on the results obtained from standardized tests. Yet, one cannot pick up a bulletin or periodical in the field of educational research without finding in it a cautioning statement about the use of standardized test scores. It is no doubt in keeping with the sweep of the scientific method into our daily lives that the testing movement has been so widespread in our schools. School personnel seem to be anxiously looking for some scientific



criterion or measure on which to base their decisions. What is deplorable about this situation is that in too many cases school personnel are prone to ignore their own good judgment and let their slavish devotion to the statistical method determine educational practice.

The use of standardized tests is certainly sound. When the results of such tests are backed by further study and data obtained through other means, these tests can prove invaluable as educational measures capable of being translated into sound educational practice.

Why, then, do we use standardized tests? What precise purposes do they serve?

We must refer to the test manual to discover what specific purpose the author had in mind when he devised his test. Each particular test is designed for some evaluative purpose. The manual will usually explain clearly the purpose of each test. One may also discover exactly what the test purports to measure. Standardized tests are usually predictive, or diagnostic measures, or measures of intelligence or achievement.

One standardized tool of measurement that has gained widespread use is a test for determining a child's readiness to undertake beginning reading successfully. This type of test is commonly referred to as a reading readiness test.

A basic task of the school in the instructional program of first grade is teaching the child the fundamentals of



reading. Reading is a basic skill that each child needs in order to meet the challenge of further learning. It serves as a fundamental means of communication in our society.

Therefore, it would seem reasonable to assume that a standardized test which claims to predict a child's ability to undertake beginning reading instruction successfully might rank high on the list of tests to be administered to those children ready by virtue of age to enter first grade. And it would also seem reasonable to the writer to assume that the purpose of administering such a readiness test would be to discover the areas in which the child is strong or weak. These results could then be used as the basis for planning reading instruction for the child built upon his individual needs.

The major purpose of giving such a test to entering first graders would seem to be diagnostic, rather than predictive. It should be used to discover the child's strengths and weaknesses, indicating the areas in which he might need special help to successfully learn the fundamentals of reading.

In the public schools of Athol, Massachusetts, a well-known reading readiness test is administered to entering first grade children before they are admitted to school. The practice in this system is to use the results of such a test as a means of determining whether a child be admitted to school or refused admission. This means that some children who meet the age requirement (six years by December first of the year admitted) might be refused admission to first grade



solely on the basis of one measure of a very highly complex process.

In chapter two the writer will present the commonly accepted theories regarding the reading process and the factors involved in readiness to undertake beginning reading. The means of evaluating the child's state of readiness will also be explored.

It should prove helpful at this point to examine the community about which this study is concerned.

Athol, Massachusetts, is a town located in the north-central section of the state with a population of 11,537 according to 1960 census figures. It would be most aptly described as an industrial community because of its economic dependence upon two large industries and several smaller allied businesses.

On October 1, 1959, the school population of the town was 2,383. Of this total, there were 1,295 children attending grades one through six housed in eight elementary schools.

Each year approximately two hundred children are eligible, by virtue of meeting the age requirement, to enter first grade in the Athol schools. This number has remained fairly constant for the past twenty years because the population has changed little during that time.

According to the annual school report of 1959, there were 211 children in the first grades of the town's school system on October 1, 1959. There were eight-and-one-half classes composed of first grade pupils.



There are no public kindergartens in Athol, but a survey conducted by the supervisor of elementary education in September of 1959 revealed that more than one-half of the 211 pupils in first grade that year had attended private kindergartens.

Of the 211 children in first grade in 1959, twenty-nine of this number were repeating grade one. That leaves a total of 182 children who initially entered first grade in September of 1959 and were subject to the new entrance requirements set up by the school committee.

The requirements for admittance were two-fold. First, a child had to be six years of age before December first following admission, and secondly, the child had to pass a reading readiness test. That test was the Lee-Clark Reading Readiness Test, 1951 Revision. It will be analyzed in a later chapter.

These 182 children were the first group of entering first graders in the Athol Public Schools who were administered this readiness test. However, there was no score mentioned as a passing mark or necessary score to gain admittance to grade one. The determination of what the passing mark would be, and which pupils would be excluded or admitted, was apparently left to the discretion of the supervisor of elementary education.

Such a subjective method of choosing the children who will enter first grade surely invites severe criticism. It would seem to the writer that some questions might be raised



about this practice:

1. What evidence is there that children scoring low on the readiness test will necessarily fail to succeed in first grade reading?
2. What evidence is there that children scoring high on the readiness test will necessarily succeed in first grade reading?
3. What are the emotional and social effects on the child who is refused admission to first grade when playmates his own age are admitted to school?
4. What evidence is there that a child refused admission one year will necessarily be more ready to successfully begin reading instruction the following year?

#### Purpose of the Study

This study, then, is concerned with taking a closer look at the practice of the Athol School System concerning its use of the Lee-Clark Reading Readiness Test as a factor in determining school admission.

Support for the continued use of this readiness test as a means of determining first grade admission or recommendations for other uses of the test should be outcomes of the study.

The study shall be defined as an analysis of the Lee-Clark Reading Readiness Test and its validity as a predictor of first grade reading success in the Athol Public Schools.

CHAPTER II

REVIEW OF THE LITERATURE



## CHAPTER II

### REVIEW OF THE LITERATURE

#### Introduction

In presenting the pertinent literature concerning the measurement of reading readiness, the writer feels it necessary to, first of all, define the term "reading readiness." Therefore, the initial section of this chapter will deal with the literature concerning the nature of reading readiness in order to lay a foundation upon which the further discussion of its appraisal might be more intelligently carried out. In section two the author will then present material regarding the measurement of reading readiness.

#### The Concept of Reading Readiness

In order to gain some understanding of the use of the term "readiness," not only as it applies to reading, but to all learning, it is helpful to look to the works of various educational psychologists.

Three laws of learning were advanced by Professor Edward L. Thorndike of Columbia University in 1913.<sup>1</sup> These concepts gained widespread acceptance. They have been called the laws of readiness, exercise and effect. According to Thorndike, the law of readiness maintains that when any conduction unit is in readiness to conduct, for it to do so is satisfying.

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<sup>1</sup>Clarence R. Stone, Progress in Primary Reading, (St. Louis: Webster Publishing Co., 1950), p. 245.



However, when any conduction unit is in readiness to conduct, for it not to do so is annoying.

Further amplification of the law of readiness conceives of an organism learning only when it is in readiness to do so. Therefore, in applying the term readiness to reading it is found to be implying that an individual will learn to read only when he or she is ready.

Before examining further the theories of the leading reading authorities about reading readiness, it would be well to clarify the use of the term reading readiness as it will apply in the remainder of this study. The term reading readiness will refer to the readiness of a child to undertake initial learning in the process of reading. The author wishes to make this distinction in the use of the term here because of the awareness that the term might be used just as appropriately in referring to the readiness that must be present at every step and stage of the reading process for orderly and meaningful development to occur. This study shall be confined to discussing readiness for beginning reading.

In attempting to arrive at a definition of the term reading readiness as it applies to readiness for beginning reading, it seems to the writer that Betts has presented one of the better conceptualizations of the term.

Reading is a very complex process, requiring the ability to deal with abstractions. Because of the highly complex nature of the reading process, no one factor (involved in it) stands out in bold relief. Factors in reading



readiness are inextricably interrelated. Furthermore, each factor carries a different weight in predicting readiness for reading. These factors are the ingredients of a compound called reading readiness.<sup>2</sup>

In her volume on reading readiness, Harrison has shed additional light on the term.

Certain well-developed psycho-physical organizations are required for the accurate reception of the specific visual stimuli and for coordinating impressions of these stimuli with learned patterns of verbal response. If these organizations for reception and coordination are interfered with in any way, we cannot have reading. If patterns of verbal response are inadequate or impaired, reading cannot be adequately carried on. This means that there is a need of readiness for reading before adequate reading can result.<sup>3</sup>

According to Harris, reading readiness may be defined as "a state of general maturity which when reached, allows a child to learn to read without excess difficulty. It is a composite of many interconnected traits."<sup>4</sup>

In the Forty-eighth Yearbook of the National Society for the Study of Education, this concept is set forth.

A number of variables enter into readiness which have been identified through studies of the progress made by children possessing or lacking these traits. No one of these factors alone, but rather a combination of factors appears to make the difference between readiness and the lack of it.<sup>5</sup>

Bond and Wagner propose that "readiness is complex since it is made up of many highly interrelated attributes. Many

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<sup>2</sup>Emmett A. Betts, Foundations of Reading Instruction, (New York: American Book Co., 1954), p. 137.

<sup>3</sup>Lucille Harrison, Reading Readiness, (Boston: Houghton Mifflin Co., 1939), pp. 1 & 2.

<sup>4</sup>Albert J. Harris, How To Increase Reading Ability, (New York: Longmans, Green and Co., 1956), p. 26.

<sup>5</sup>Reading In the Elementary School, National Society for the Study of Education, Forty-eighth Yearbook, Part II (Chicago:



factors make for reading readiness."<sup>6</sup>

Writing in two successive issues of the Elementary School Journal in an attempt to summarize all studies on reading readiness up to 1936, Smith and Jensen defined it as "The maturation of all mental, physical and emotional factors involved in the reading process."<sup>7</sup>

It is extremely difficult to derive a meaning for the term "reading readiness" from the separate concepts presented above. In the interests of continuing this review of literature on common ground, the writer presents the following definition of the term.

Reading readiness is that stage or state a learner must be in before meaningful interpretation of printed symbols can take place. This stage or state is made up of many highly complex and interconnected factors or traits. The whole organism must have matured to a point where a certain level has been reached in each of these factors so that learning to read can take place easily.

Constantly in the above definitions of the term reading readiness, reference to the complexity and uniqueness of the readiness process could be noted. It was conceptualized as being composed of many factors or traits. To better understand what is being measured when reading readiness is measured, it should prove helpful to examine the general consensus among

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The University of Chicago Press, 1949), p. 60. "Quoted by permission of the Society."

<sup>6</sup>Guy L. Bond and Eva Bond Wagner, Teaching the Child to Read, (New York: The MacMillan Co., 1954), p. 110.

<sup>7</sup>Charles Smith and Vernon Jensen, "Educational, Psychological, and Physiological Factors in Reading Readiness," Elementary School Journal, 36:584, April, 1939.



leading reading authorities as to the factors which go to make up readiness for beginning reading.

In the introduction to her presentation on the factors involved in reading readiness, Harrison has made the matter quite clear.

The factors which greatly influence reading readiness are many and of a highly complex nature and are so often involved and interwoven that it is very difficult to determine what single factor or group of factors bears most significance to the condition known as readiness for reading. Some of these factors may be known as distinct abilities and may be observed and measured according to rather clearly defined norms. Others may be thought of as levels of development or maturations which also may, in many instances, be observed and measured. Some are fostered by training and experience and may be developed by a well-planned and executed teaching program, while others are not brought about except by the process of inner maturation, and are only slightly, if at all, brought into maturity by any teaching program. Some factors influencing readiness for reading are merely conditions within the child's environment which foster certain of the abilities and levels of development necessary to reading readiness.<sup>8</sup>

These factors are classified into three categories by Harrison - physical development, intellectual development, and personal development.

Since the leading reading authorities indicate that there are many factors which influence readiness and are not in agreement as to their exact nature, it is difficult to categorize these factors into neat divisions. But as Harrison has done above, they are most often divided into major areas by the majority of reading experts.

Betts lists the factors in four sections - social,

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<sup>8</sup>Harrison, op. cit. p. 5.



emotional, mental and physical.<sup>9</sup> Gates prefers to call them intelligence, vision, hearing, physical fitness and emotional stability.<sup>10</sup> The Forty-Eighth Yearbook indicates that these factors are linguistic maturity, mental maturity, experiential background, perceptual maturity, sensory maturity, manual competence, and social and emotional adjustment.<sup>11</sup>

The factors are conceived by Stone as being chronological age, mental age, depth of experience, auditory discrimination, language abilities, and social-emotional status.<sup>12</sup>

Like Betts, Bond and Wagner prefer to classify these readiness factors into four major areas, namely mental, physical, emotional and educational.<sup>13</sup>

McKim sees these factors of reading readiness as intellectual maturity, social, emotional and physical maturity, and experiences.<sup>14</sup>

After surveying the literature on reading readiness prior to 1936, Smith and Jensen summarized these traits into

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<sup>9</sup>Betts, op. cit. p. 112.

<sup>10</sup>Arthur I. Gates, The Improvement of Reading, (New York: The MacMillan Co., 1947), pp. 30-35.

<sup>11</sup>Reading in the Elementary School, op. cit. p. 61.

<sup>12</sup>Stone, op. cit. pp. 158-159.

<sup>13</sup>Bond and Wagner, op. cit. p. 114.

<sup>14</sup>Margaret G. McKim, Guiding Growth in Reading, (New York: The MacMillan Co., 1955), pp. 33-42.



three areas - physiological, psychological and educational.<sup>15</sup>

These factors in reading readiness are seen as being mental, physical, social, emotional and educational by Hester,<sup>16</sup> while Harris lists them as intellectual, physical, emotional, social and background of experiences.<sup>17</sup>

Russell classifies these factors into four areas also, physical, social, mental and psychological.<sup>18</sup> Conceiving these traits as mental, linguistic, experiential, social, physical and emotional are Lamoreaux and Lee.<sup>19</sup>

Again for the sake of establishing a common basis of understanding for the continued discussion of these factors which make up readiness for reading, the author proposes to collect these various classifications presented above, and combine them into the five major areas most frequently mentioned: namely, mental, physical, emotional, social, and educational.

Let us first consider the factor of mental maturity.

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<sup>15</sup>Smith & Jensen, op. cit. p. 585.

<sup>16</sup>Kathleen B. Hester, Teaching Every Child to Read, (New York: Harper and Brothers, 1955), p. 48.

<sup>17</sup>Harris, loc. cit.

<sup>18</sup>David H. Russell, Children Learn To Read, (Boston: Ginn and Co., 1949), p. 121.

<sup>19</sup>Lillian A. Lamoreaux and Dorris M. Lee, Learning to Read Through Experience, (New York: Appleton-Century-Crofts, Inc., 1943), pp. 4-7.



Since reading is accepted as being a highly complex type of learning involving many abstractions, it should be readily seen that some degree of mental maturity is necessary in an individual before he can successfully cope with beginning reading instruction. Some of the common components of the concept of mental maturity are intelligence, memory span, ability to perceive relationships, language facility, and vocabulary.

Harrison proposes that since reading is an intellectual process, factors of intellectual development fostering reading readiness are of greater importance than any other group of factors. She also claims that the single factor which most accurately determines readiness for reading is mental age.<sup>20</sup> Her contention is supported through studies by Leavell and Sterling,<sup>21</sup> Morphett and Washburne,<sup>22</sup> and Arthur,<sup>23</sup> who all found that the factor of mental age was highly significant in determining readiness for reading.

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<sup>20</sup>Harrison, op. cit. p. 6.

<sup>21</sup>U.W. Leavell and Helen Sterling, "Reading and Intelligence," Chapter Two, Part Five in Research in The Three R's, C.W. Hunnicutt & W.J. Iverson, eds. (New York: Harper & Brothers, 1958) pp. 43-46.

<sup>22</sup>Mabel V. Morphett & Carleton Washburne, "When Should Children Begin To Read," Chapter Three, Part Two in Research in The Three R's, C.W. Hunnicutt & W.J. Iverson, eds. (New York: Harper & Brothers, 1958) pp. 53-56.

<sup>23</sup>Walter S. Munroe, ed., Encyclopedia of Educational Research, (New York: The MacMillan Co., 1950), p. 988.



Gates, however, takes issue with the oft-stated contention advanced by Morphett and Washburne that a mental age of six years and six months is the one which produces the greatest number of successful readers.

In a study of four groups of children, each taught by different methods and using different materials with teachers of varying backgrounds and experience, Gates concluded that the necessary mental age or optimum time for beginning reading successfully will vary with materials used, type of instruction, skill of teacher, class size, and amount of preparatory work. He further stated that the necessary age depends on several factors and that no one mental age can be considered an optimum one.<sup>24</sup>

However, it would seem that mental maturity is an important factor involved in readiness for beginning reading.

A second major factor concerned with reading readiness is physical readiness. There appear to be various physical attributes related to physical readiness.

Betts terms these as chronological age, auditory and visual discrimination, motor control and neurological status.<sup>25</sup>

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<sup>24</sup>Arthur I. Gates, "The Necessary Mental Age for Beginning Reading," Chapter Three, Part Three in Research in The Three R's, C.W. Hunnicutt & W.J. Iverson, eds. (New York: Harper & Brothers, 1958) pp. 57-62.

<sup>25</sup>Betts, op. cit. pp. 112-115.



Gates refers to these attributes simply as physical fitness,<sup>26</sup> while the Forty-Eight Yearbook calls these physical factors "sensory maturity."<sup>27</sup>

The physical factors are listed as hearing, vision, handedness, general health, speech organs, and chronological age by Harrison.<sup>28</sup> McKim conceives of the physical factors as simply physical fitness,<sup>29</sup> as do McKee,<sup>30</sup> Russell,<sup>31</sup> and Lamoreaux and Lee.<sup>32</sup>

Smith and Jensen contend that sex differences, motor control, vision and hearing are the fundamental physical factors.<sup>33</sup> They are purported to be chronological age, sex, visual and auditory perception, physical health, and freedom from directional confusion by Harris.<sup>34</sup>

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<sup>26</sup> Arthur I. Gates, The Improvement of Reading, (New York: The MacMillan Co., 1947), p. 128.

<sup>27</sup> Reading in The Elementary School, op. cit. p. 62.

<sup>28</sup> Harrison, op. cit. p. 8.

<sup>29</sup> McKim, op. cit. p. 39.

<sup>30</sup> Paul McKee, The Teaching of Reading in the Elementary School, (Cambridge, Mass.: Houghton Mifflin Co., 1948) p. 152.

<sup>31</sup> Russell, op. cit. p. 121.

<sup>32</sup> Lamoreaux and Lee, op. cit. p. 6.

<sup>33</sup> Smith & Jensen, op. cit. p. 589.

<sup>34</sup> Harris, loc. cit.



It would seem appropriate then to list such factors as chronological age, sex, motor control, neurological status, auditory and visual perception, freedom from speech defects, and general physical health, as being the general traits which contribute to the total physical readiness of a child to undertake beginning reading.

A third area involved in readiness for reading is social readiness. It seems very closely allied with emotional readiness, but since so many reading authorities divorce the two, that procedure will be followed in this paper.

The majority of reading experts simply refer to the social factors in readiness as social adjustment. Betts goes beyond this meager referral, however, to outline some of the social problems indicated by lack of social adjustment. He calls them timidity, inability to get along with others, and lack of confidence.<sup>35</sup> Harrison breaks social readiness into factors of responsiveness, attitudes, and habits toward others.<sup>36</sup>

In general then it might be concluded that the area of social adjustment or development plays a significant role in the overall readiness of the child to begin reading.

Closely allied with social readiness factors, and often combined with them, are the traits of emotional readiness. Most of the reading authorities categorize emotional factors

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<sup>35</sup>Betts, op. cit. pp. 139-221

<sup>36</sup>Harris, loc. cit.



simply as emotional adjustment or emotional stability. Again Betts provides the most detailed conception. He portrays the factors involved in emotional readiness for beginning reading as unhappiness, insecurity, rebelliousness, boldness, withdrawal, or aggressiveness. All these things can present an obstacle to the readiness of a child to begin reading successfully.<sup>37</sup>

Emotional maturity or stability, then, is the fourth major area or major factor involved in the reading readiness of a child.

Finally to be considered is that area of readiness commonly called background of experiences. In this study it shall be referred to as educational readiness. As Bond and Wagner indicate in their treatment of this area, the factors which make up educational readiness can be modified to some degree by instruction.<sup>38</sup>

Harrison vividly outlines the above contention in these words, "Many of the factors which make up reading readiness are processes only of inner maturation or conditions which foster reading abilities, while some of the factors are amenable to training and can be developed by a well-executed and planned teaching program."<sup>39</sup> The writer considers these factors to be the educational factors to which Bond and Wagner are calling attention.

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<sup>37</sup>Betts, loc. cit.

<sup>38</sup>Bond & Wagner, op. cit. pp. 114-127.

<sup>39</sup>Harrison, op. cit. p. 5.



Betts lists these educational factors as cultural readiness and pre-reading experiences.<sup>40</sup> McKee terms them a background of understandings, skills and abilities.<sup>41</sup> Lamoreaux and Lee cite background of experiences and interest in reading as factors involved in educational readiness.<sup>42</sup>

Other reading authorities refer to these factors as experiential background, depth of background, experiences, area of the child's experiences, and interests, abilities and information necessary to begin reading.

It seems quite evident that what reading authorities refer to as the child's background of experiences is really what many are citing as educational readiness, as it is conceptualized by Bond and Wagner as being those factors amenable to instruction.

Some of the components that make up educational readiness according to Bond and Wagner are picture interpretation, orientation to the printed page, extent of vocabulary, accuracy of speech pattern, quality of oral English, ability to pay attention, ability to sense a sequence, ability to follow directions, and desire to read.<sup>43</sup>

Several studies have indicated that certain factors of readiness are amenable to instruction and can influence

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<sup>40</sup>Betts, op. cit. pp. 167-220.

<sup>41</sup>McKee, op. cit. p. 144.

<sup>42</sup>Lamoreaux and Lee, op. cit. pp. 4-7.

<sup>43</sup>Bond & Wagner, loc. cit.



success in beginning reading. These factors would seem to be those envisioned by Bond and Wagner as educational readiness factors.

In a detailed study of 108 first graders to determine whether any relationship existed between success in beginning reading and reading experiences before first grade, Almy<sup>44</sup> concluded that a significant positive relationship exists between reading success and the child's responses to opportunities for reading prior to grade one. This is true, she maintains, even though her criterion measure was limited, unreliability was contributed by retrospective errors in the interviews, and the range of abilities of the study group was limited.

In an attempt to test the hypothesis that initial reading scores of children with kindergarten training would be higher than scores of children without such training, Fast<sup>45</sup> studied 134 children in urban schools. Some had kindergarten training, others did not. She attempted to match them in groups according to mental age, chronological age, and other factors. In summation she found that significantly higher scores were achieved by children with kindergarten training on three different reading tests than by children without such training.

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<sup>44</sup>Millie Corrine Almy, "The Importance of Children's Experiences to Success in Beginning Reading," Chapter Three, Part One in Research in The Three R's, C.W. Hannicutt & W.J. Iverson, eds., (New York: Harper & Brothers, 1958), pp. 48-52.

<sup>45</sup>Irene Fast, "Kindergarten Training and Grade One Reading," Journal of Educational Psychology, 48:52-57, January, 1957.



This study would seem to support the oft-stated contention that readiness can be promoted by kindergarten training. It would also seem to support Bond and Wagner in their claim that certain factors involved in readiness are of an educational nature and can be developed by training.

However, Pratt<sup>46</sup> conducted a unique study to test the hypothesis that the same measure of reading readiness cannot be applied to both kindergarten and non-kindergarten children because the former's training in certain areas greatly affected their readiness for reading. He found evidence to support his theory. His study also revealed that, using the same criterion measure, the children with kindergarten training scored significantly higher on tests of reading readiness than children without such training.

This study again lends weight to the claim that certain factors of readiness are able to be enhanced by kindergarten training. These are the ones consistently referred to as traits of educational readiness in the total readiness concept.

Bradley<sup>47</sup> undertook a study of two groups of first graders to determine if a child will gain or lose if formal reading instruction is delayed until the child is ready to read. She found that test results clearly indicate that children

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<sup>46</sup>Willis E. Pratt, "A Study of the Differences in the Prediction of Reading Success of Kindergarten and Non-Kindergarten Children," Journal of Educational Research, 42:525-533, March, 1949.

<sup>47</sup>Beatrice E. Bradley, "An Experimental Study of the Readiness Approach to Reading," Elementary School Journal, 56:262-267, February, 1956.



who participate in an educational program of reading readiness attain a degree of achievement in reading equal to or greater than a group that began formal reading instruction immediately upon entering first grade with no thought being given to their readiness to undertake reading.

Gates and Bond<sup>48</sup> in an intensive study of four large groups of children entering first grade found that readiness for reading is something to develop rather than wait for. The findings of their study indicate that success in reading is most closely correlated with symptoms of earlier preparation.

Both of these studies indicate that there are certain factors which lend themselves to development outside the inner maturation of the child. These are the components of educational readiness.

Certainly it would seem clear at this point that the area of educational readiness is greatly affected by kindergarten training or prior experiences.

Durrell contends that much can be done about the matter of readiness.

Probably the greatest single area of improvement in reading instruction is reading readiness. Yet many thousands of children are condemned to failure in first grade because of the belief in the following

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<sup>48</sup>Arthur I. Gates and Guy L. Bond, "Factors Determining Success and Failure in Beginning Reading," Chapter Three, Part Four in Research in The Three R's, C.W. Hunnicutt & W.J. Iverson, eds., (New York: Harper & Brothers, 1958), pp. 63-67.



concepts. 1. Reading readiness is something mysterious that descends upon a child - early, late, or never - and the only remedy is to "wait until he is ready." 2. If a child does not learn to read, the fault is in the home, or in emotional or personality problems. 3. Reading rests upon a mental age of six years or more.

Research has shown clearly that two background abilities essential to gaining a sight vocabulary can be taught late in the kindergarten or early in the first grade if not gotten before school. These are ability to see differences and ability to note different sounds in different words.<sup>49</sup>

It therefore seems logical to conclude that educational readiness is an important area of the total readiness concept: important because it, more than any other area, seems capable of being developed through education and training.

### Summary

Reading readiness is that stage or state a learner must be in before meaningful interpretation of printed symbols can occur. This stage or state is made up of many highly complex and interrelated factors or traits. A certain level of maturity of each of these factors is necessary before the organism, as a whole, has matured to the point where learning to read can take place easily.

The factors which go to make up this composite called reading readiness are most often classified into five major areas. These are mental readiness, physical readiness, social readiness, emotional readiness, and educational readiness.

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<sup>49</sup>Donald D. Durrell, "Some Musts in Reading Research," The National Elementary Principal Yearbook, 35:18-19, September, 1955.



Mental and physical readiness depend primarily upon the inner maturation of the child. They are least likely to be affected by outside training. Social and emotional readiness are dependent to a great extent upon the inner maturation of the child, but may be aided to some degree by programs of education and training. The area of educational readiness is doubtless the one most likely to be influenced and aided to mature by education and training. Educational maturation depends primarily upon the prior experiences and training of the child.

#### The Appraisal of Reading Readiness

Now that the factors which seem to make up readiness for reading have been discussed, and a general basis laid for the understanding of the term reading readiness, it is necessary in the light of the objectives of this study to review the literature concerning the evaluation of reading readiness. Ways and means of determining readiness for reading of the individual child should be of paramount concern to all elementary school personnel. Before an individual can be taught to read, his strengths and weaknesses must first be discovered.

It seems that the purpose of appraising reading readiness should be diagnostic. It should be an attempt to determine the readiness areas in which the child is strong and weak. From these diagnostic studies, a program of reading instruction geared to each individual's needs can be developed.



This seems, to the writer, the only certain way to insure success in teaching every child to read.

However, a common reason for appraising reading readiness is simply to predict the probable success a child will have in beginning reading instruction. Should this be the only use made of evaluation, the logic of this procedure must be seriously questioned.

The diagnostic aspects of an evaluation program are keynoted by J. Wayne Wrightstone in a bulletin prepared for New York City teachers.

A program designed to determine readiness for reading must be concerned primarily with the study of the whole child and with his total reaction as a personality to learning situations. It is an attempt to diagnose the abilities and disabilities of each individual. The primary purpose of appraising the first grade child's readiness is to guide his learning through individualization of instruction.<sup>50</sup>

Gates, Bond and Russell<sup>51</sup> in their two-year study of methods of determining reading readiness reached the conclusion that the best reading readiness testing consists essentially in making an inventory of various techniques used by the child in reading itself. It should be a diagnostic inventory of actual abilities, techniques and skills involved in the reading act.

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<sup>50</sup>J. Wayne Wrightstone, Determining Readiness for Reading (New York: Board of Education, City of New York, Educational Research Bulletin No. 6, September, 1943), p. 6.

<sup>51</sup>Arthur I. Gates, Guy L. Bond, and David H. Russell, Methods of Determining Reading Readiness, (New York: Teachers College, Columbia University, 1939), pp. 3-55.



Further emphasis upon the diagnostic purposes of evaluating reading readiness is offered by Gates.

The best reading readiness testing is a diagnostic inventory of basal abilities involved in reading. The diagnostic values of a battery of tests are of far greater general usefulness than the predictive services of such tests.<sup>52</sup>

Wright sheds further light on the diagnostic value of readiness testing.<sup>53</sup> He contends that however valid and reliable a prognostic measure may be, its value lies primarily in the use made of it. He lists three ways such measures may be used: (1) as a basis for excluding pupils from certain types of work in school, (2) as a basis for changing pupils from one type of work to another in which they will have a better opportunity of success, (3) as a basis for changing the type of work so the pupil may succeed in it.

The only sound philosophy to follow is the latter course; i.e., adjusting the kind and type of school activity to the needs of the pupil, according to Wright. He maintains that prognosis makes its most valuable contribution if strengths and weaknesses of pupils can be ascertained early in first grade, and the kind and type of learning activities adjusted to their needs.

In the writer's opinion this is an effective use of evaluation. It should be a means of diagnosing the child's

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<sup>52</sup>Arthur I. Gates, The Improvement of Reading, (New York: The MacMillan Co., 1947), p. 141.

<sup>53</sup>Wendell W. Wright, Reading Readiness - A Prognostic Study, (Bloomington, Indiana: University of Indiana School of Education, June, 1936) pp. 2-46.



readiness state, and then using this diagnosis as the basis for arranging instruction that will benefit the child the most. It seems that the case of a doctor and his patient is a parallel to this. The doctor diagnoses each individual patient's case and provides treatment on the basis of the individual diagnosis. He does not attempt to treat all his patients the same way.

Logically enough, then, the predictive value of a measure is enhanced to the degree that the results of it are used to organize instruction.

In order to learn the strengths and weaknesses of each individual child before he begins formal reading instruction, certain knowledge about the child is needed. Basically this information must reveal the maturity of the child in each of the five major areas of readiness outlined in the first section of this chapter. It is possible, and quite necessary, to obtain this information in a variety of ways.

Numerous means for making the necessary appraisals of a child's readiness have been developed and used. A complete listing of these tools and techniques would be impossible. For the purposes of this study only those means that have met with general acceptance and popular usage will be discussed.

According to Kopel<sup>54</sup> who critically reviewed 114 pertinent studies, the following types of information are essential in determining the reading readiness of a pupil - intelligence

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<sup>54</sup>Walter S. Munroe, ed., Encyclopedia of Educational Research, (New York: The MacMillan Co., 1950), p. 990.



test score, reading readiness test score, performance in informal reading activities, health and physical status, emotional and social development, language usage, and experiential background.

It seems clearly evident that Kopel is referring to information that in general is concerned with those five areas of readiness presented in section one of this chapter as being the common components of reading readiness.

The child's mental maturity can best be measured by an intelligence test or mental maturity test. His physical maturity can be evaluated through the use of developmental history records, teacher observations, parental interviews, medical reports, tests of motor control and handedness, and tests of auditory and visual acuity. The areas of social and emotional maturity are measurable by personality inventories, teacher observations, parental interviews, anecdotal records, and developmental history records. For determining educational readiness it has been found helpful to use a reading readiness test, teacher observations, anecdotal records, and parental interviews.

To suggest that a school system should employ all these means of appraisal is foolish. But at least one means of evaluating each child's maturity in each of the five major areas should be used.

Each readiness area will now be examined and the ways and means of evaluating it explored. Studies which are concerned with the validity of objective measures will also



be discussed.

In order to determine fairly accurately the mental maturity of a child, it becomes imperative to rely on a standardized test. Very inaccurate judgments of the intelligence of the children in their classes is made by teachers.<sup>55</sup>

There are numerous mental tests which have been found satisfactory for measuring the intelligence or mental maturity of a child. Studies conducted by some persons have led them to conclude that a mental test also gives the best prediction of success in reading because of the significant relationship between mental factors and the reading process.

Deputy<sup>56</sup> studied 103 first graders in a New York school. He administered the Pintner-Cunningham Primary Mental Test and four tests constructed by himself at the beginning of the first grade year. These were correlated with scores obtained on four author-constructed tests of reading achievement given near the end of first grade. Deputy found that the mental test gave the best single means of predicting reading achievement. However, when combined with the other four tests, its predictive power was raised. Of all the factors studied by Deputy, he rated intelligence as most significant in determining a child's success in beginning reading.

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<sup>55</sup>Guy L. Bond and Eva Bond Wagner, Teaching the Child to Read, (New York: The MacMillan Co., 1954), p. 129.

<sup>56</sup>Erby Chester Deputy, Predicting First Grade Reading Achievement, (New York: Bureau of Publications, Teachers College, Columbia University, 1930), pp. 1-61.



A study by Dean<sup>57</sup> backs up this contention. He administered both the Stanford-Binet Test and the Metropolitan Reading Readiness Test to five first grade classes before they began reading instruction. He used a popular standardized reading achievement test as the criterion of reading success. After correlating scores on both predictive measures with the criterion test, he concluded that mental age seems to be superior to a score on the reading readiness test as an instrument for predicting reading achievement of first grade entrants.

In a comparative study of the Stanford-Binet Test, a mental test, and the Davis-Eells Test, conducted by Russell<sup>58</sup> in an effort to determine the ability of each to predict first grade reading achievement, the following conclusion was reached: the Stanford-Binet Test gave a better prediction of first grade reading success than the Davis-Eells Test.

Morgan<sup>59</sup> studied the predictive value of two tests for determining first grade reading success. They were the Pintner-Cunningham Primary Test, Form A, a mental ability

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<sup>57</sup>Charles D. Dean, "Predicting First Grade Reading Achievement," Elementary School Journal, 39:609-616, April, 1939.

<sup>58</sup>Ivan F. Russell, "The Davis-Eells Test and Reading Success in Grade One," The Journal of Educational Psychology, 47:269-270, May, 1956.

<sup>59</sup>Elmer F. Morgan, "Efficacy of Two Tests in Differentiating Potentially Low From Average and High First Grade Achievers," Journal of Educational Research, 53:300-304, April, 1960.



test, and the Full-Range Picture Vocabulary Test, Form B, a readiness-type test. Both were administered at the end of the kindergarten year. Morgan concluded, after correlating the data with teachers' marks at the end of first grade as the criterion of success, that both tests have empirical validity for differentiating potentially low from the average and high first grade achievers.

In his volume on reading, Harris contends that "intelligence is the most important factor in readiness for reading; and therefore an intelligence test is useful for appraising certain phases of reading readiness."<sup>60</sup>

Whether the objective measure of mental maturity is also the best predictor of probable success in beginning reading is debatable. The contention of other authorities on this point will be presented later in the study of reading readiness tests. However, one cannot escape the fact that a test of mental maturity or ability is a necessary means of appraising the area of mental maturity. No other adequate means has yet been developed. It must rank high on the list of evaluative methods used to determine total readiness for reading.

It would be extremely difficult to envision an objective test capable of evaluating the child's physical maturity. This is an area more easily appraised by a combination of tests and informal means. To determine auditory and visual

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<sup>60</sup>Albert J. Harris, How to Increase Reading Ability, (New York: Longmans, Green & Co., 1956), p. 42.



acuity simple tests are available and should be used. An audiometer and eye charts are helpful. Motor control and handedness can also be measured fairly accurately by simple tests. These test results should be used in addition to data obtained from such means as teacher observations, developmental history records, parental interviews, and medical reports. Physical factors that can be appraised through these means are general health, health habits, motor development, dentition, nutrition, locomotion, teething, dressing, elimination, speech development, and other birth and development data that might indicate retardation or other abnormality.

The third area of readiness, that of social and emotional maturity, can best be appraised through informal means. Tests of personality are helpful, but are time consuming, costly, and difficult to administer to young children. Ways of evaluating social and emotional factors are teacher observations, anecdotal records, parental interviews, and developmental history records. Things to be evaluated through these means are home background, attitudes, interests, emotional stability, work habits, group acceptance, and response to social situations.

Finally, the area of educational readiness is most frequently evaluated by a reading readiness test. There are also informal means to appraise educational readiness such as teacher observations, parental interviews, and rating scales.

Many reading authorities contend that a reading readiness



test also gives an excellent indication of the mental maturity of the child in addition to evaluating educational factors in readiness for reading. These were the factors mentioned in section one of this chapter as being amenable to training and instruction.

In view of the purpose of this study it is imperative that a close look be taken at the practice of using reading readiness tests as a measure of the child's educational maturity or readiness. What has been the evidence obtained through studies of the use of reading readiness tests?

In the summation of a study of twelve well-known reading readiness tests, including the Lee-Clark Reading Readiness Test, Starr<sup>61</sup> and others at the University of Oregon School of Education concluded that reading readiness tests are highly reliable. As predictors of success in reading, the authors found little to choose among reading readiness tests, intelligence tests, and teachers' ratings. No one of the twelve tests studied seemed to be consistently better than any other. The authors felt that for best prediction of success in beginning reading, all three measures, the reading readiness test, an intelligence test, and teachers' ratings should be used.

Robinson and Hall<sup>62</sup> found after studying all available data on five popular reading readiness tests, including the

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<sup>61</sup>Analysis of Reading Readiness Tests, Curriculum Bulletin No. 180, Vol. 13, (Eugene, Oregon: School of Education, University of Oregon, December 10, 1957), pp. 9-10.

<sup>62</sup>Francis P. Robinson and William E. Hall, Concerning



Lee-Clark Test, that reading readiness tests are valid predictors of reading achievement for the very high scores and the very low scores, but errors occur in making predictions for pupils who score in the middle ranges. They also contend that present reading readiness tests correlate closely with intelligence tests and seem to be measuring the same thing. They felt that little is to be gained through giving both a reading readiness test and an intelligence test.

In a summary of three studies conducted on reading readiness tests, Karlin<sup>63</sup> indicated that they showed reading readiness tests are not valid predictors of probable success in beginning reading. He contends that the relationship between scores obtained on reading readiness tests and scores on reading achievement tests is not sufficiently great to permit confidence in the readiness test score. He felt chance was operating to too great a degree. However, he felt that reading readiness tests have a place in the evaluation program, but as they are now constructed they cannot be relied upon to predict reading success.

Wright<sup>64</sup> in his two-year study of five means of appraising reading readiness, used two readiness tests

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<sup>62</sup>Reading Readiness Tests, (Columbus, Ohio: Ohio State University Press, March, 1942), pp. 1-16.

<sup>63</sup>Robert Karlin, "Research in Reading," Elementary English, 37:177-183, March, 1957.

<sup>64</sup>Wright, loc. cit.



(including the Lee-Clark test), an intelligence test, an author-constructed test, and chronological age as the five predictive measures for determining first grade reading success. Two criterion measures were employed, and correlations obtained between them and the five predictive measures. Wright found a significant positive relationship between all predictive measures, except chronological age, and the criterion measures. Best predictors were the author-constructed rating scales. He observed that a critical point was necessary on the predictive measure before it could be relied upon to predict success with any degree of accuracy.

In one of the largest samples studied, Bremer<sup>65</sup> used 2,069 entering first graders in a Texas school system to determine if reading readiness tests predict accurately the rate of children's growth in beginning reading. After correlating scores on the readiness test with a criterion measure of achievement, Bremer concluded that only a slight relationship existed between scores on the two tests. He felt that readiness tests probably cannot be used to predict reading achievement with any degree of accuracy.

Karlin<sup>66</sup> investigated the relationship of readiness test scores with reading achievement test scores in first grade. The results of his study showed only a four percent better

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<sup>65</sup>Neville Bremer, "Do Readiness Tests Predict Success in Reading?", Elementary School Journal, 59:222-224, January, 1959.

<sup>66</sup>Robert Karlin, "The Prediction of Reading Success and Reading Readiness Tests," Elementary English, 34:320-323, May, 1957.



prediction of an achievement test score from knowledge of a readiness test score than simply a chance guess without any information. He concluded that there is a very small relationship between readiness test scores and achievement test scores. Karlin claimed after the study that we need a better understanding of what present day reading readiness tests really measure.

Some studies have been made on the Lee-Clark Reading Readiness Test (about which this study is concerned) in addition to those mentioned above. Harrison<sup>67</sup> felt that the Lee-Clark test was too limited in scope to be of great value as a test of readiness for all phases of reading readiness.

Henig,<sup>68</sup> following his study of ninety-eight first graders, found that the Lee-Clark test foretells with a substantial degree of success the outcome of the children's first year of experience with a formal reading program as correlated with teachers' marks. However, he also found that forecasts made by experienced teachers on a rating scale have just as high a degree of predictive validity.

Lee, Clark and Lee<sup>69</sup> in a study involving the Lee-Clark

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<sup>67</sup>Lucile Harrison, Reading Readiness, (Boston: Houghton Mifflin Co., 1939), p. 98.

<sup>68</sup>Max S. Henig, "Predictive Value of a Reading Readiness Test and of Teachers' Forecasts," Elementary School Journal, 50:41-46, September, 1949.

<sup>69</sup>Murray Lee, Willis W. Clark, and Dorris M. Lee, "Measuring Reading Readiness," Elementary School Journal, 34:656-666, May, 1934.



test made two comparisons. They found the test predicted scores on a criterion reading test better than did intelligence tests, and better than did teachers' ratings.

Investigating the relationship between the Lee-Clark test and a popular reading achievement test, Powell and Parsley<sup>70</sup> found that the Lee-Clark test is useful for predicting the general reading achievement of a total group of first graders. But they found that there is reason to doubt that it is adequate for predicting individual children's performances. They felt it should be used as a screening device and as a rough measure for initial grouping, but constant re-evaluation by the teacher is needed to ascertain the most effective placement.

Betts has this to say about readiness tests in general. "A reading readiness test merely provides indexes to reading capacity believed to contribute to readiness for reading. No single instrument has been devised to this date to predict reading readiness for all types of children in all types of school situations."<sup>71</sup>

Witty and Kopel concluded that "when used in conjunction with an intelligence test and teachers' judgments of children's

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<sup>70</sup> Marvin Powell and Kenneth M. Parsley, Jr., "The Relationship Between First Grade Reading Readiness and Second Grade Reading Achievement," Journal of Educational Research, 54:229-233, February, 1961.

<sup>71</sup> Emmett A. Betts, Foundations of Reading Instruction, (New York: American Book Co., 1954), p. 238.



readiness in terms of health and social maturity, these devices (readiness tests) appear helpful in determining when children should begin to receive reading instruction."<sup>72</sup>

According to McKim a reading readiness test is most useful when it serves as a diagnostic device rather than a predictive device. It provides help in planning children's reading programs. She maintains that a readiness test shows the child at only one point in his progress toward beginning reading, and at work with only one type of material. "These reading readiness test scores need to be supplemented by objective evidence of the child's performance in daily classroom activities," she concludes.<sup>73</sup>

Further emphasis is placed on the diagnostic use of readiness tests in the evaluative program of total readiness by Gates<sup>74</sup> who studied an especially prepared readiness test in a large city. He maintained that readiness tests should be used as any good series of diagnostic tests are employed. Their main purpose should be to reveal the pupils' status in each of the important skills involved in the early stage of reading so that achievement may be insured by giving each pupil the kind and amount of help which he needs.

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<sup>72</sup>Munroe, op. cit. p. 989.

<sup>73</sup>Margaret G. McKim, Guiding Growth in Reading, (New York: The MacMillan Co., 1955), p. 55-57.

<sup>74</sup>Arthur I. Gates, "An Experimental Evaluation of Reading Readiness Tests," Elementary School Journal, 39:497-508, March, 1939.



Caution about when to test a child has been offered by Bond and Wagner<sup>75</sup> who claim that many children in first grade are not ready to take a readiness test until two or three weeks after they enter school. This, they feel, is especially true of children who have not had the advantage of kindergarten.

They also maintain that readiness tests have both diagnostic and predictive values. However, they contend that many of the appraisals of readiness can only be made by the teacher.

Harris<sup>76</sup> supports the contention of Bond and Wagner when he maintains that readiness tests provide the teacher with a quick, convenient basis for judging the status of the children in certain highly important intellectual abilities. They help the teacher locate the children who need further careful study. However, some aspects of readiness cannot be measured by tests, and teacher judgments based upon observation and interview are needed.

From the opinions of leading reading authorities it seems easy to deduce that the best means of appraising readiness would be through a comprehensive evaluation program involving the use of at least two standardized measures; one an intelligence test and the other a reading readiness test, and several informal means, including a teacher rating scale,

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<sup>75</sup>Bond and Wagner, op. cit. p. 149.

<sup>76</sup>Harris, op. cit. p. 46-47.



parental interviews and developmental history records.

However, the situation of actual appraisal too often is concerned with only the administration of a reading readiness test as the basis for determining the child's total readiness. Belief that one such measure is adequate for determining the readiness of a child to begin initial reading is to confess ignorance of the nature of readiness for reading and the importance of readiness in organizing the first grade reading program.

The dangers of attempting to use one single measure as a determinant of readiness are presented by Spache.

Practically all the methods of estimating reading capacity have sought a one-to-one relationship between some predictor and reading capacity. But the problem of predicting future performances in reading cannot be simplified in this fashion. Reading is not a simple intellectual function reflecting only the intelligence of the learner, his age, or his year in school. A multitude of studies has shown that success in reading is determined by multiple factors. Learning to read is an expression of the internal needs of the child as well as an answer to the external pressures. Because numerous factors enter into reading capacity, it is doubtful that we shall ever find a single test that will accurately predict reading capacity.<sup>77</sup>

Throughout the works of other noted reading authorities this same theme can be found coursing. The measurement of reading readiness cannot be accomplished accurately and in all fairness to the child by any one single method or test.

Betts in his highly literate work on reading claims that, "Several approaches to the problem of determining readiness

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<sup>77</sup>Helen M. Robinson, ed., Evaluation of Reading, (Chicago: The University of Chicago Press, December, 1958), p. 109.



for reading must be considered. Reading being a complex of abilities, no single test can be expected to reveal the specific needs of every child."<sup>78</sup>

Further emphasis is placed on the need for a comprehensive program of appraisal by Gates.

In appraising reading readiness all factors should be appraised. The determination of reading readiness is a process of testing or otherwise appraising in general those factors which should be taken into account in diagnosing reading abilities at any stage."<sup>79</sup>

While most authorities quoted herein have advocated several means of evaluation, it is well to remember that they are generally not referring solely to standardized means of appraisal.

According to Harrison, "There are some factors which influence reading readiness for which there are still no objective measures. These factors for the most part can be observed and rated subjectively by teachers."<sup>80</sup>

In the Forty-Eighth Yearbook on reading, the contention is stated thus: "Ratings of readiness based on observation of some factors add to the reliability of the prediction in individual cases because they include variables not accounted for in tests."<sup>81</sup>

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<sup>78</sup>Betts, op. cit. pp. 227-228.

<sup>79</sup>Arthur I. Gates, The Improvement of Reading, (New York: The MacMillan Co., 1947), p. 141.

<sup>80</sup>Harrison, loc. cit.

<sup>81</sup>Reading in the Elementary School, National Society For The Study of Education, Forty-eighth Yearbook, Part II, (Chicago: The University of Chicago Press, 1949) p. 62.



Bond and Wagner maintain, "There is no one standardized test which gives data on all factors in readiness nor does any combination of standardized tests give the data. Whatever the program of testing, it must be supplemented by teacher appraisals."<sup>82</sup>

Hester feels that "There are many factors which enter into success for reading. There is no one standardized test which will give information on all these aspects. It is therefore advisable to use a combination of methods."<sup>83</sup>

Even if standardized tests were to be the basis of the evaluative program, Traxler questions their infallibility.

The major limitations of standardized reading tests are found in the very nature of the reading act itself. Reading is a very complex, unified, continuous activity which does not fall into natural divisions or measurable units. Because of this one must question whether reading tests can really test these complexities.<sup>84</sup>

Traxler also has some advice to offer on the use of these tests as evaluative tools.

Reading tests furnish only a portion of the information needed to carry on an effective school reading evaluation program. They should be used in conjunction with individual tests of mental ability, listening ability, achievement, and measures of interest, and inventories of personality. Reading tests reach their greatest usefulness when used in a comprehensive evaluation program.<sup>85</sup>

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<sup>82</sup>Bond and Wagner, op. cit. p. 146.

<sup>83</sup>Kathleen B. Hester, Teaching Every Child to Read, (New York: Harper & Brothers, 1955), p. 73.

<sup>84</sup>Arthur E. Traxler, "Values and Limitations of Standardized Reading Tests," The Education Digest, 25:45, October, 1959.

<sup>85</sup>Traxler, loc. cit.



Considering these statements, and knowing the many factors that make up the child's total readiness for reading, it seems logical to assume that many types and means of appraisal must necessarily be used in order to adequately evaluate the child's total readiness for reading.

### Summary

The purpose of appraising reading readiness should be diagnostic rather than <sup>predictive</sup> prognostic. It should be concerned with diagnosing the strengths and weaknesses of each individual child so that a program of initial reading instruction can be developed based on the child's needs.

The prognosis of reading readiness makes its most valuable contribution in the evaluative program when it is used as a basis for organizing instruction, rather than as a means of excluding certain pupils from certain types of work. The predictive value of a readiness test increases to the degree that its results are used in preparing individual instruction in beginning reading. <sup>No way!</sup>

Several means should be used to evaluate the five major readiness areas that are commonly accepted as making up the total reading readiness of a child. A combination of a mental test, a readiness test, teacher appraisals, parental interviews, and developmental history records, as well as informal tests of vision and hearing, are generally agreed upon as a comprehensive evaluation program adequate for determining the child's total readiness to undertake beginning reading.



Each of these means of appraisal should be a part of a total program whose aim is to diagnose the child's needs and develop a program to meet these needs, rather than predict whether the child will succeed or fail in beginning reading. Success seems to be enhanced, and almost insured, by the diagnostic use of evaluative methods.

The fallacy of using a single means of determining reading readiness is clearly pointed out by nearly all reading authorities. Readiness is too complex, being composed of many highly interrelated factors, to make possible its adequate evaluation by any single measure.

The common practice of using a reading readiness test to determine an individual's readiness to undertake initial reading instruction is a very questionable one. Aside from the fact that readiness tests should be used for diagnostic purposes rather than predictive purposes, readiness tests have not proven valid in many instances for predictive purposes. Several studies have revealed that readiness tests are not valid predictors of future performances in reading, and are highly unreliable except as rough measures of a child's readiness. They need to be supplemented by many other evaluative techniques and used in a comprehensive appraisal program.



CHAPTER III

AN ANALYSIS OF THE LEE-CLARK READING READINESS TEST



## CHAPTER III

### AN ANALYSIS OF THE LEE-CLARK READING READINESS TEST

#### Composition of the Test

The Lee-Clark Reading Readiness Test, 1951 revision, was devised by J. Murray Lee and Willis W. Clark for the California Test Bureau.

It consists of four sub-tests. Parts one and two purport to measure the ability of the child to recognize similarities and differences in letter forms. Sub-test three is claimed to measure the child's vocabulary and certain concepts. The final section is intended to measure the ability of a child to recognize similarities and differences in letter and word formation from the most simple types of gross differences to complex and minute differences.

The test is designed to be administered by one examiner to a large group of students. It is easily administered and scored. The total working time is suggested as fifteen minutes. Children need only a test booklet and a large crayon.

Because of its ease of administration and scoring it is in general use in schools throughout the country.

#### Purposes and Uses of the Test

According to the authors, the Lee-Clark Reading Readiness Test is designed primarily for the purpose of predicting the child's ability to learn to read. They contend that the four sub-tests have been selected for their



value in this prediction.

Lee and Clark report that they have designed the test to assist the teacher in recognizing or identifying those children who are ready to learn to read. They state in the test manual that, "Some children are ready to begin reading immediately (upon entering school); others need a period of development; and still others need a semester or a year or more of maturation. This reading readiness test is most useful in identifying these various types of children."<sup>1</sup>

In an analysis of the Lee-Clark Reading Readiness Test, 1951 revision, published in the Fifth Mental Measurements Yearbook,<sup>2</sup> and prepared by James R. Hobson, the reviewer says that the general purpose of the test is "to predict the child's ability to learn to read." However, through 20 years of using both the 1931 and 1951 revisions of the test, Hobson felt it also gives data for initial intraclass grouping, some indication of how long formal reading instruction should be deferred if necessary, and a rough analysis of the general area in which a child may be deficient.

### Norms

The reliability of the test as reported by the authors

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<sup>1</sup>J. Murray Lee, and Willis W. Clark. Manual of Lee-Clark Reading Readiness Test, 1951 Revision. (Los Angeles: California Test Bureau, 1951.) p. 2.

<sup>2</sup>Oscar, K. Buros. Fifth Mental Measurements Yearbook, (Highland Park, N.J.: Gryphon Press, 1959.) pp. 776-778.



is .93 for the total score. This is based on 170 entering first grade pupils. The authors also give reliability coefficients obtained on split-halves by the Spearman-Brown formula for the sub-tests as well as the total score. On the sub-tests the reliability was reported to range from .83 to .94, with the above mentioned .93 as the reliability for the total score.

The 1951 revision of the test was standardized on 5,000 cases of entering first graders selected from data for approximately 25,000 cases. The pupils were tested within one month after entering first grade. Median chronological age was 6-0, and the median I.Q. was 100 with a sigma of 16.

There are two tables of norms listed in the manual. "Norms A" were based on the data mentioned above. "Norms B" are provided for use when children are tested before entering first grade in May or June. These norms were prepared by adjusting the "Norms A" for entering first graders to allow for the time difference of four months and for individual differences in mental growth.

In his review, Hobson criticizes the "Norms B" because they are not based on a true population sampling, but have been subjectively adjusted from another population.<sup>3</sup>

Both Hobson and John W. Starr in their analyses of the

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<sup>3</sup>Ibid. p. 777.



Lee-Clark Reading Readiness Test state that research data reported by the test's authors and others show coefficients of correlation between scores on various editions of the test and other reading tests that are substantial enough to indicate a fair degree of predictive validity.

They reported that in nearly every case the criterion reading test was also correlated with either teacher's ratings or group intelligence tests, and in every case but one, the Lee-Clark Reading Readiness Test yielded a higher coefficient.

#### Limitations of the Test

Both Hobson and Starr in their critiques, and the authors in their test manual, indicate limitations that should be recognized in the use of the Lee-Clark Reading Readiness Test, 1951 revision.

Starr succinctly sums up his overall analysis of the test in these restricting words. "This is a useful test for the teacher who wishes to find out early in the school year the children who cannot discriminate printed forms or respond accurately to verbal directions. It is a screening device."<sup>4</sup>

The authors inject a note of caution about use of the test results by stating in the manual, "It should by no means

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<sup>4</sup>Analysis of Reading Readiness Tests. Curriculum Bulletin No. 180, Volume 13. Eugene, Oregon: School of Education, University of Oregon, December 10, 1957. p. 6.



be the sole measure or basis for decision. Other important types of information which will assist in determining reading readiness need to be collected and interpreted."<sup>5</sup>

Lee and Clark go on to relate in the manual that, "Considerable care should be used in interpreting the results of an aptitude test such as the reading readiness test. The efficiency of the teacher, the customary percentage of failures or nonpromotions, the teaching methods, and the type of learning activities all influence the extent to which a prediction of reading achievement can be made. Each school should make a study of the results for its particular situation."<sup>6</sup>

Hobson's review lists the test as excellent considering its brevity and ease of administration. He reports it very effective in screening out those children with gross and usually rather obvious hindrances to success in beginning reading.

However, he sharply criticizes the elaborate normative and interpretive tables. "Neither the test itself nor any of the technical data presented in the manual appear to support the tables. Their validity for detailed and exact analysis is in question."<sup>7</sup>

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<sup>5</sup>J. Murray Lee, and Willis W. Clark. op. cit. p. 2.

<sup>6</sup>Ibid. p. 5.

<sup>7</sup>Oscar K. Buros. op. cit. p. 777.



In summation Hobson reports, "In the absence of other objective data, it serves as a good rough measure for initial grouping, but its scores should not be interpreted too minutely and it should be followed by additional diagnostic instruments."<sup>8</sup>

### Summary

The Lee-Clark Reading Readiness Test, 1951 Revision, consists of four subtests which are purported by the authors, J. Murray Lee and Willis W. Clark, to measure the following: (1) the child's ability to recognize similarities and differences in letter forms; (2) the child's vocabulary and certain concepts; and (3) the child's ability to recognize similarities and differences in letter and word formation from the most simple types of gross differences to complex and minute differences.

The authors contend their test is devised primarily for the purpose of predicting the child's ability to read. The test's reliability is based on 170 entering first grade pupils and is reported by the authors to be .93. The test was standardized on 5,000 cases of entering first graders selected from 25,000 cases.

Norms "A" for the test are based on the data above.

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<sup>8</sup>Ibid. p. 778.



Norms "B" are provided for use when children are tested before entering first grade. They were prepared by adjusting Norms "A". Norms "B" have been criticized because they are not based on a true population sampling.

The Lee-Clark Reading Readiness Test has certain limitations. It is described as a good rough measure to help the teacher identify those children with gross handicaps in reading. It also has been portrayed as being merely a good screening device. The authors themselves caution about using the test results as the sole measure or means for decision. They prefer that the test be used in a comprehensive evaluation program.



CHAPTER IV

DESIGN OF THE STUDY



## CHAPTER IV

### DESIGN OF THE STUDY

The data used in this study was obtained from the performances of 163 first grade students in the Athol Public Schools on the Lee-Clark Reading Readiness Test and four reading achievement tests designed by the Scott-Foresman Company to be used in conjunction with their first grade reading program.

The group studied was the total population of the first grades of the Athol Schools during the school year 1959-1960. The total group consisted of 211 children. This particular group was chosen because it was the initial group of children entering first grade that was subjected to a new requirement for admittance set up by the school committee in 1959. This requirement stated that a child must pass a simple readiness test before being enrolled in first grade in September of 1959.

Since there were twenty-nine pupils repeating first grade in 1959-60, they had to be eliminated from this study for they were not subjected to the new admittance policy, and hence, had not taken the readiness test. This means that a total of 182 children entered the first grade of the Athol Public Schools for the first time in September, 1959, and were administered the Lee-Clark Reading Readiness Test. The number of children who failed to pass the test and were excluded from admission to school at that time is not known.



Data was not available for all 182 children initially entering the first grade in September of 1959. Of this number, only 163 pupils had records available that would qualify them for inclusion in this study. All 163 pupils were administered the Lee-Clark Reading Readiness Test before being admitted to first grade. The test was given in May of 1959, before any of the children had had any formal reading instruction. The purpose of the test has been explained in Chapter Three.

Since the purpose of the study is to determine the validity of the Lee-Clark Reading Readiness Test for predicting success in first grade reading, it was necessary to select a criterion measure of success in first grade reading. The criterion of reading success used in this study were four reading achievement tests of the Scott-Foresman Company designed for use in their first grade reading program.

These four tests were administered to each pupil as he completed that phase of reading instruction each particular test was devised to evaluate. The tests are known by the name of the primer or reader they are intended to follow. The first test of reading achievement is entitled Before We Read. Test two is called Three Pre-Primers. The third is named Fun With Dick and Jane, and the final reading achievement test is known as Our New Friends.

Each of these reading achievement tests is designed to measure the individual's growth in reading skills following



selected phases of initial reading instruction. In this respect they seem suitable as criterion measures of reading success in grade one.

Not all 163 children involved in this study were administered all four reading achievement tests. Some of the children did not complete all four phases of initial reading instruction during first grade. Scores for others were apparently not recorded, although they took the test.

Therefore, lack of a constant number of variables in the separate correlations made between the readiness test scores and the scores on each of the four reading achievement tests may have affected the correlation in each case. The writer recognizes that this might be true. The number of variables in each of the four separate correlations varies according to the number of children with paired scores.

In essence there are four individual studies made within this entire investigation. The Lee-Clark Reading Readiness Test scores were correlated with scores on each of the four reading achievement tests. This was done to determine the ability of the Lee-Clark Reading Readiness Test to predict reading success at all stages of initial reading instruction in grade one.

Since the purpose of this study was to investigate the validity of the Lee-Clark Reading Readiness Test as a predictor of success in first grade reading only in the Athol schools, no attempt was made to infer findings from this



study onto another population. Therefore, descriptive statistics alone were employed.

The coefficient of correlation was computed to ascertain the degree of relationship between pairs of scores in each of the four studies. One of the most important uses of the coefficient of correlation is that of indicating the extent to which values of one variable may be predicted from known values of another variable. It represents the extent to which changes in one variable (in this study the readiness test score) are accompanied by equal changes in the other variable (in this case the reading achievement test score). The size of the coefficient of correlation varies from a plus 1.00 to a minus 1.00, or in other words, from a perfect positive correlation to a perfect negative correlation. This could be represented by the degree to which the data, when plotted on a two-way frequency distribution, tend to fall into a straight line.

Linearity of the plotted scores was present in each of the four studies permitting use of the Pearson product-moment formula for finding the coefficient of correlation. Using the raw scores necessitated the following formula:

$$r = \frac{\sum XY - \frac{(\sum X)(\sum Y)}{N}}{\sqrt{\left(\sum X^2 - \frac{(\sum X)^2}{N}\right) \left(\sum Y^2 - \frac{(\sum Y)^2}{N}\right)}}$$



The size of the coefficient of correlation by itself is insufficient to indicate the extent to which one variable of the paired scores may be predicted from knowledge of the other variable. A knowledge of the variability of the group seems to be of equal importance with a knowledge of the size of the coefficient. Sometimes the size of the coefficient is extremely valid for predicting the total achievement of the large group, but the same coefficient is not valid for predicting achievement of any individual in that group.

The standard error of the coefficient was computed. Since the sample in this study was the population, the following formula was used:

$$\sigma_r = \frac{1 - r^2}{\sqrt{N}}$$

This formula is used where the sample and population coefficients are identical or the same, as was the case in this study.

Once the coefficient of correlation has been computed between a set of paired scores it is helpful to test the significance of this coefficient. This is done to determine whether or not a given coefficient of correlation reflects a true relationship or one resulting from chance fluctuations. This can be accomplished through use of the "t test" of significance. Any comprehensive statistics book will yield the tables necessary for applying this test of significance



to the coefficient of correlation. This was applied in each of the four studies in this problem.

The final statistical analysis made in this study determined the index of forecasting efficiency. This was done to find the improvement that could be made in predicting a pupil's success in grade one reading through knowing his readiness test score. The index of forecasting efficiency represents the percent by which a prediction is improved with knowledge of a variable, or test score, as opposed to a prediction made without prior knowledge of the test score. In this particular study it represents the percentage of improvement possible in predicting an individual's achievement test score through knowledge of his readiness test score as opposed to predicting without the knowledge of the latter, or in other words, by making a pure chance guess at his achievement test score.

The index of forecasting efficiency can be computed from knowledge of the coefficient of correlation. It indicates the gain in predictive efficiency with knowledge of one variable as opposed to predicting without such knowledge. The formula for obtaining the index of forecasting efficiency when computed from the coefficient of correlation is:

$$E = 1 - \sqrt{1 - r^2}$$

### Summary

The data used in this study was obtained from the



performances of 163 first grade students in the Athol Public Schools who took the Lee-Clark Reading Readiness Test before entering first grade in September of 1959, and who took one or more of four reading achievement tests designed by the Scott-Foresman Company for use with their instructional program in grade one.

The 163 students represent the total number of first grade students with records available for inclusion in this study. They were administered the Lee-Clark Reading Readiness Test in May of 1959 before having any formal reading instruction. The four achievement tests were taken during the first grade year as each individual child completed selected phases of reading instruction. Raw scores of these five tests were used in the analysis of the data.

To determine the ability of a score on the readiness test to predict success in grade one reading, the four achievement tests each served as a criterion measure of reading success in grade one. Coefficients of correlation were then computed for four sets of paired scores, i.e., for the readiness test and each of the four achievement tests. In addition, the standard error of the coefficient and the index of forecasting efficiency were found. The "T test" of significance was also applied to the coefficient obtained in each of the four studies.



CHAPTER V

ANALYSIS OF THE DATA



## CHAPTER V

### ANALYSIS OF THE DATA

In determining the extent to which the scores on the Lee-Clark Reading Readiness Test and the scores obtained by the same children on the four reading achievement tests are related, the Pearson product-moment formula was used. The coefficient was obtained for each of the four sets of paired variables, as well as the standard error of the coefficient.

A high degree of relationship was found to exist between a score obtained on the reading readiness test and a score obtained by a child on the first reading achievement test, Before We Read. The coefficient of correlation was .90. The standard error of the coefficient was .015. This "r" is significant at the 1 percent level.

The other test of the significance of the coefficient of correlation used was the index of forecasting efficiency. This equaled 56 percent for the first set of paired variables. Prediction of a reading achievement test score on the test Before We Read from a score on the readiness test is 56 percent better than one made without the knowledge of the latter.

The coefficient obtained through correlating the scores on the readiness test with the scores on the second achievement test, Three Pre-Primers, was .67. The standard error was .02. Again the "r" is significant at the 1 percent level. The index of forecasting efficiency equaled 26 percent.



This means there is a 26 percent improvement in the prediction of a reading achievement test score on the second achievement test from knowledge of the readiness test score than without such knowledge.

In the third correlation, between the readiness test score and the score on the third reading achievement test, Fun With Dick and Jane, an "r" of .20 was computed. The standard error of the coefficient was .08. The "r" is not significant at the 1 percent level, but meets the requirements for significance at the 5 percent level of confidence. An index of forecasting efficiency of 2 percent was derived for this third correlation. It indicates that there is a mere 2 percent improvement in prediction of an achievement test score on Fun With Dick and Jane from knowledge of the readiness test score than would be obtained by a pure chance guess.

A coefficient of .75 was obtained for the final correlation in this study between the readiness test score and the achievement test score on Our New Friends. The standard error of the "r" is .04. The coefficient is significant at the 1 percent level. The index of forecasting efficiency equaled 34 percent. There is a 34 percent improvement in the prediction of a score on Our New Friends through knowledge of the readiness test score than without such knowledge.

The following table presents the findings in this study:



TABLE 1

Results Obtained from the Statistical Analysis of the Raw Scores of First Grade Pupils in Athol Public Schools on the Lee-Clark Reading Readiness Test and Four Achievement Tests.

Criterion Reading Test	Number of Variables	Correlation Coefficient	Standard Error	Index of Forecasting Efficiency
Before We Read	160	.90	.015	56%
Three Pre-Primers	162	.67	.02	26%
Fun With Dick & Jane	143	.20	.08	2%
Our New Friends	122	.75	.04	34%

### Summary

A coefficient of correlation of .90 was found between the readiness test score and first reading achievement test score. The standard error of the coefficient is .015. The coefficient is significant at the 1 percent level. The index of forecasting efficiency equaled 56 percent.

In comparing the readiness test score with the score obtained on the second reading achievement test, a coefficient of correlation of .67 was obtained. The standard error was .02. The coefficient is significant at the 1 percent level. The index of forecasting efficiency was 26 percent.

On the third achievement test and the readiness test a



correlation of .20 was found. The standard error was .08. This is not significant at the 1 percent level, but is at the 5 percent level of confidence. The index of forecasting efficiency was found to be 2 percent.

A coefficient of correlation of .75 was found between the readiness test score and the fourth reading achievement test score. The standard error was .04. The coefficient of correlation is significant at the 1 percent level of confidence. The index of forecasting efficiency was found to be 34 percent.



CHAPTER VI

SUMMARY AND CONCLUSIONS



## CHAPTER VI

### SUMMARY AND CONCLUSIONS

#### Restatement of the Problem

This study was concerned with determining the ability of the Lee-Clark Reading Readiness Test to predict a child's success in first grade reading.

The writer's interest in this study was aroused by the Athol School system's practice of using the score obtained by a child on the Lee-Clark Reading Readiness Test as a determinant of school admission. The readiness test was used as a predictive measure to indicate whether or not the child was likely to succeed or fail in first grade reading. If a child obtained a low score on the readiness test indicative of probable failure, he would be excluded from entering school that year.

Since this practice is open to question, it seemed appropriate to determine whether or not there was any scientific evidence for continuing such a practice.

This study, then, was concerned with analyzing the validity of the Lee-Clark Reading Readiness Test in predicting success in first grade reading as used in the Athol Public Schools.

#### Description of the Procedure

The subjects in this study were 163 students who had completed the first grade of the Athol Public Schools. The



data used were the raw scores of these 163 pupils obtained on the Lee-Clark Reading Readiness Test, and the raw scores received by these same students on four reading achievement tests of the Scott-Foresman Company designed for use in the first grade. The four reading achievement tests served as four separate criterion measures of a pupil's success in first grade reading. Separate correlations were made between the reading readiness test scores and the scores obtained by the pupils on each of the four reading achievement tests.

The coefficient of correlation was computed to determine the degree of relationship between the readiness test scores and each of the four sets of reading achievement test scores. The standard error of the coefficient and the index of forecasting efficiency were also computed for each of the four sets of paired variables. The significance of the correlation coefficient was determined by applying the "t test" of significance to the coefficient obtained in each of the four separate studies.

### Results of the Study

A high degree of relationship was found to exist between scores obtained by pupils on the Lee-Clark Reading Readiness Test and scores obtained by these same pupils on the first reading achievement test, Before We Read. The coefficient of correlation was .90. The standard error was .015. The coefficient is significant at the 1 percent level of confidence. The index of forecasting efficiency was found to be 56 percent.



This indicates that a score on the first reading achievement test can be predicted 56 percent better from knowing the readiness test score than not knowing it.

The coefficient of correlation computed between the readiness test score and the second reading achievement test score was .67. The standard error was .02. The coefficient is again significant at the 1 percent level. The index of forecasting efficiency in this case equaled 26 percent, indicating a 26 percent improvement in the prediction of a score on the second reading achievement test, Three Pre-Primers, with knowledge of the readiness test score than without such knowledge.

A low correlation coefficient of .20 was found in comparing scores on the readiness test with scores on the third reading achievement test, Fun With Dick and Jane. The standard error was .08. This coefficient of correlation was not significant at the 1 percent level, but was at the 5 percent level. The index of forecasting efficiency was 2 percent. This means there is only a 2 percent improvement in the prediction of a score on the third reading achievement test when the readiness test score is known over a pure chance guess.

The final coefficient of correlation yielded by comparing the readiness test scores with the scores on the fourth reading achievement test, Our New Friends, was .75. The standard error of the coefficient was .04. This coefficient



is significant at the 1 percent level of confidence. The index of forecasting efficiency equaled 34 percent, making the prediction of a score on the fourth reading achievement test 34 percent better with knowledge of the readiness test score than without such knowledge.

### Conclusions

1. The ability of the Lee-Clark Reading Readiness Test to predict total group performance on the reading achievement test Before We Read is very good, as indicated by the high coefficient of correlation yielded in the comparison of the two tests. A score obtained on the readiness test has a high degree of relationship to a score obtained on this achievement test.

2. The ability of the Lee-Clark Reading Readiness Test to predict total group performance on the second achievement test, Three Pre-Primers, is fair, as indicated by the substantial coefficient of correlation between the two tests. A score on the readiness test has a marked degree of relationship to a score obtained on this particular achievement test.

3. The ability of the Lee-Clark Reading Readiness Test to predict total group performance on the third reading achievement test, Fun With Dick and Jane, is very poor, as the coefficient of correlation of .20 indicates. A score on the readiness test has only a slight relationship to a score on this achievement test.



4. The ability of the Lee-Clark Reading Readiness Test to predict total group performance on the fourth reading achievement test, Our New Friends, is fair, as the coefficient of correlation of .75 obtained when comparing the two sets of scores shows. A score on the readiness test has a marked degree of relationship to a score on this achievement test.

5. The Lee-Clark Reading Readiness Test is not valid as a predictor of individual performance on any of the four criterion reading achievement tests used in this study. This is true despite the fact that three substantial to high coefficients of correlation were obtained between scores on the readiness test and scores on three of the four sets of reading achievement tests.

An example cited from Table 2 in the Appendix clearly substantiates this conclusion. Pupil number one obtained the highest possible score on the readiness test; 64. He also scored well-above average in each of the four reading achievement tests as could be expected from his performance on the readiness test. Pupil number 162, on the other hand, received a score of 32 on the readiness test. This was the lowest score obtained on the readiness test that was included in this study. In fact, the manual accompanying the Lee-Clark Test indicates that a score of 32 would rate the student's expectation of success in grade one reading as poor. Yet pupil number 162 obtained achievement test scores on all four criterion measures almost equal to those obtained by



pupil number one.

Another comparison of individual performances on the readiness test and the four achievement tests will serve to further confirm the conclusion that the Lee-Clark Reading Readiness Test is not a valid predictor of individual performance in first grade reading. Pupil number 25 obtained a score of 60 on the readiness test. According to the test manual his expectation of success in first grade reading was excellent. However, his performance in first grade reading, as measured by the four achievement tests, was below average. Each achievement test score was below 60. If we compare him to both pupils 160 and 162 in the table, we find that each of these students scored low enough on the readiness test to be rated poor to fair in expectation of success in first grade reading. Yet, in each case, their reading achievement test scores were higher on each of the four criterion measures of reading success than were those of pupil number 25.

The coefficient of correlation would have to be a plus or minus 1.00 (a perfect correlation) for the Lee-Clark Reading Readiness Test to be valid as a predictor of individual performance or success in first grade reading in the Athol Public Schools, as measured by the four criterion reading achievement tests.

#### Limitations of the Study

1. The lack of a constant number of paired variables in each of the four separate correlations is the major limitation



in this study. Since the majority of the missing reading achievement test scores were from the low scoring group on the readiness test, this undoubtedly tended to lower the coefficients of correlation found in comparing the readiness test scores with scores on the achievement tests Fun With Dick and Jane and Our New Friends. This factor would seem to have little, if any, effect on the coefficients obtained in the other two studies since the number of variables involved were only one and three less than the total number possible.

In any case the validity of the Lee-Clark Reading Readiness Test for predicting individual performance in first grade reading would not have been insured had these scores been included in the study.

2. All children who scored below 32 on the Lee-Clark Reading Readiness Test were excluded from entering school in 1959, and therefore, were not included in this study. Had their scores on the readiness test and the reading achievement tests been included, they would probably have tended to raise the coefficient of correlation in each of the four separate studies. The difference would not have been great enough to affect the lack of validity of the readiness test for predicting individual performance, however.

3. Slightly more than half of the children included in this study had kindergarten training prior to entering grade one, while the remainder did not. This could have played a significant role in influencing the results of this study.



Research cited in Chapter Two of this study indicates that children with kindergarten training tend to score higher on a reading readiness test than children without such training.

4. There were nineteen pupils with incomplete records which forced them to be eliminated from this study. Their inclusion in the study would doubtless have had a negligible effect on the readiness test's lack of validity for predicting individual performance but might have tended to raise the correlation coefficient slightly in each of the four studies.

#### Recommendations

1. The Athol Public School System should continue to use the Lee-Clark Reading Readiness Test. However, it should serve as a diagnostic device rather than a predictive one. No child should be excluded from school on the basis of a score obtained on this readiness test. The results of the test should be used as the basis for organizing the instructional program in reading in the first grade.

2. The Lee-Clark Reading Readiness Test should not be administered in the spring. Rather, it should be given two to three weeks after the opening of school in the fall. This would allow the children without prior kindergarten training to become accustomed to the classroom atmosphere. A child's performance on the test in the spring is not indicative of his readiness in September.

3. The Athol School System should make a further study of the significance of kindergarten training as it affects



a child's performance on the readiness test and the reading achievement tests. The results of such a study might indicate a need to set up public kindergartens in Athol.



APPENDIX



TABLE 2

Raw Scores Obtained by 163 First Grade Pupils in Athol Public Schools on the Lee-Clark Reading Readiness Test and Four Scott-Foresman Company Reading Achievement Tests Arranged According to Rank Order of Scores on the Readiness Test.

Pupil No.	Readiness Test Score	Score on Test 1	Score on Test 2	Score on Test 3	Score on Test 4
1	64	65	70	70	65
2	63	70	66	68	66
3	63	70	67	63	59
4	62	65	64	69	67
5	62	60	69	70	70
6	62	68	68	69	65
7	62	67	68	69	67
8	62	66	62	62	64
9	62	64	64	65	68
10	61	67	70	65	58
11	61	63	65	65	66
12	61	61	62	66	66
13	61	66	66	67	66
14	61	64	60	63	62
15	60	69	62	70	
16	60	68	67	64	68
17	60	70	69	68	70
18	60	65	66	68	68
19	60	65	64	64	67
20	60	61	67	68	66



TABLE 2 - Continued

Pupil No.	Readiness Test Score	Score on Test 1	Score on Test 2	Score on Test 3	Score on Test 4
21	60	61	64	69	62
22	60	62	65	69	68
23	60	70	68	67	61
24	60	63	67	65	63
25	60	53	59	56	53
26	59	68	59	66	49
27	59	66	58	61	65
28	59	66	54	62	45
29	59	53	53	63	64
30	59	55	52	52	
31	59	57	63	64	65
32	59	62	65	64	61
33	59	61	61	65	55
34	59	68	68	68	63
35	59	68	62	65	67
36	59	63	66	69	65
37	58	52	64	67	62
38	58	58	57	52	49
39	58	54	66	67	
40	58	70	63	58	52
41	58	68	61	66	36
42	58	65	58	62	35
43	58	64	60	66	65



TABLE 2 - Continued

Pupil No.	Readiness Test Score	Score on Test 1	Score on Test 2	Score on Test 3	Score on Test 4
44	58	70	59	57	61
45	58	62	62	61	60
46	58	61	61	66	62
47	57	68	66	69	65
48	57	70	63	64	61
49	57	60	62	61	61
50	57	67	57	57	
51	57	65	61	61	
52	57	62	64	62	64
53	57	58	61	60	
54	57	66	70	69	70
55	57	70	67	54	54
56	56	65	66	61	64
57	56	62	63	64	66
58	56	50	56		
59	56	57	56	70	69
60	56	43	62	70	64
61	56	65	63	64	
62	56	60	64	65	65
63	56	58	69	62	61
64	56	62	64	67	64
65	56	66	69	60	67
66	56	63	66	66	67



TABLE 2 - Continued

Pupil No.	Readiness Test Score	Score on Test 1	Score on Test 2	Score on Test 3	Score on Test 4
67	56	63	66	64	66
68	56	64	64	69	66
69	56	64	65	62	55
70	56	67	65	61	66
71	55	65	63	69	66
72	55	63	69	65	59
73	55	57	68	68	66
74	55	63	65	64	69
75	55	62	51	56	
76	55	67	68	64	65
77	55	69	67	70	66
78	55	68	67	68	67
79	55	60	62		
80	55	63	59	66	67
81	54		64	63	23
82	54	58	59	62	65
83	54	65	62	68	63
84	54	60	66	68	61
85	54	68	61	62	68
86	54	54	66	60	65
87	54	62	56	62	65
88	54	65	65	66	59



TABLE 2 - Continued

Pupil No.	Readiness Test Score	Score on Test 1	Score on Test 2	Score on Test 3	Score on Test 3
89	54	55	61	61	60
90	54	51	59		
91	54	40	65	67	65
92	53	58	62	68	64
93	53	67	68	65	68
94	53	63	62	58	61
95	53	56	63	65	
96	53	68	66	69	68
97	53	63	65	67	64
98	53	70	60	55	57
99	52	63	65	70	70
100	52	62	62	63	59
101	52	56	67	63	60
102	52	58	63	56	
103	52	46	47	61	63
104	51	63	68	61	61
105	51	60	63	69	64
106	51	59	64	63	
107	51	61	62	65	68
108	51	62	57	55	59
109	51	50	46		
110	51	62	62	67	65



TABLE 2 - Continued

Pupil No.	Readiness Test Score	Score on Test 1	Score on Test 2	Score on Test 3	Score on Test 4
111	51	54	59	62	52
112	50	63	58	65	67
113	50	61	56	60	
114	50	48			
115	50	66	60		
116	50	51	47	52	64
117	49	60	66	65	64
118	49	60	62	62	63
119	49	60	61	67	
120	49	58	66	55	65
121	49	66	62	52	58
122	49	55	66		
123	48	55	51	64	46
124	48	60	60	63	63
125	48	61	58	63	58
126	48	63	63	59	68
127	47	60	61	57	62
128	47	59	63	62	61
129	47	57	56		
130	47	60	59		
131	47	55	53	63	61
132	46	55	57	56	59



TABLE 2 - Continued

Pupil No.	Readiness Test Score	Score on Test 1	Score on Test 2	Score on Test 3	Score on Test 4
133	45	64	62	70	67
134	44	58	62	65	
135	44	66	65	60	
136	44	66	58	53	65
137	44	61	62	67	66
138	44	46	52	52	
139	43	63	65	68	
140	43	63	67	61	
141	43	59	59		
142	41	63	59	65	
143	41		61		
144	41	45	51	48	66
145	40	59	64	67	62
146	40	45	65	55	
147	40	63	56	61	55
148	40	61	62	65	57
149	40	63	55	60	
150	40	51	52		
151	39	68	55		
152	39	46	55	59	52
153	38	56	61		
154	37	48	62		



TABLE 2 - Continued

Pupil No.	Readiness Test Score	Score on Test 1	Score on Test 2	Score on Test 3	Score on Test 4
155	37		57		
156	37	62	62	63	68
157	36	54	55		
158	36	50	58		
159	36	57	53	61	56
160	36	61	64	67	60
161	35	57	53		
162	32	63	63	65	62
163	32	58	62		



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