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# Comparison of achievement and personality rating of tested and nontested children

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COMPARISON OF ACHIEVEMENT AND PERSONALITY RATING  
OF TESTED AND NONTTESTED CHILDREN

Submitted by

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(B.S. in Ed., Boston University School of Education, 1947)

In partial fulfilment of the requirements for the degree of

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1951

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INTRODUCTION

## INTRODUCTION

Since time out of mind, in this country, it has been customary to send children to school at the chronological age of six or thereabouts. Likewise, entering school and learning to read have been synonymous terms.

One of the most significant findings of modern child psychology and child hygiene has been the lack of correlation between calendar age and mental, social and/or emotional age.<sup>1</sup>

A child can only profit from school experience if he has reached a definite level of mental and emotional maturity.

The success or failure which the child experiences during his first few days or weeks in school can, and often does, influence his entire educational career.

The fact that all first grade entrants to elementary school are not ready for systematic instruction presents a challenging problem to administrators and teachers.

This investigation grew out of the conviction that one of the most important periods for careful educational guidance is at the time the pupil first enters school.

One of the chief reasons for making this study was the desire to secure evidence either to support or refute the criticism that children entering the schools by testing are immature and do not make satisfactory progress.

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<sup>1</sup>Lawrence A. Averill. School Readiness, School Admission, and First Grade Objectives. The Commonwealth of Massachusetts, Department of Education, 1945. 23 p.



The purpose of this study is to compare academic achievement and social progress of underage children admitted by test with children admitted at a required chronological age.

This study will concern itself with the results obtained on the Metropolitan Achievement Test<sup>1</sup> given in grade eight and the composite Personality Rating Record<sup>2</sup> made by the seventh and eighth grade teachers and principal of each school.

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<sup>1</sup>Metropolitan Achievement Test. New York: World Book Company.

<sup>2</sup>Personality Rating Chart. Brookline: School Department.

CHAPTER I

RELATED RESEARCH

## CHAPTER I

### RELATED RESEARCH

#### Factors Involved in Success or Failure in School

The problem of discovering when the child is adequately prepared to enter school continues to be of great importance to parents, teachers, educators, and school administrators. This is evidenced by the volume of professional literature concerned with an attempt to find a single formula for predicting readiness for school success.

Because of the number and complexity of the factors upon which successful achievement and personality depends, it is possible in one study to consider only a few of them.

The related research for this study may be classified under the following headings:

1. Chronological age
2. Readiness for school admission
3. Intelligence
4. Mental age
5. Personality
6. Teacher judgment

#### Chronological Age

Notwithstanding the low correlations found between chronological age, mental age, and reading readiness, it is a regrettable fact that children continue to be admitted to kinder-

garten and the first grade of school almost universally on a chronological age basis of five and six years respectively.

Hayes<sup>1</sup> found that chronological age seemed to have no relation at all to school success.

Harrison<sup>2</sup> contends that chronological age has very little to do with reading readiness except as it is concerned in determining the mental age of the kindergarten or first grade entrant. It is to a slight degree indicative of the amount of experience a child has had, but in terms of time only, not in quality or extent.

Gilmartin,<sup>3</sup> in 1946, reported that: The result of admitting pupils who have reached a certain chronological age has been failure for too large a portion of our first grade pupils. Until recently, however, chronological age was the sole criterion for entrance to school and the beginning of reading skills. The attending disastrous effects upon the social and emotional development of the children who failed has caused educators considerable concern.

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<sup>1</sup>Eleanor Hayes. "Why Pupils Fail." Educational Method 13: 25; 1933.

<sup>2</sup>M. Lucille Harrison. Reading Readiness (revised and enlarged. Boston: Houghton Mifflin Company, 1939. p. 8.

<sup>3</sup>Catherine E. Gilmartin. "Progress of Under-Age Children Admitted by Test to First Grade in Quincy Schools." Unpublished Master's Thesis, Boston University School of Education, 1946.

Setting the minimum entering age at approximately six will still not insure uniformity in progress or successful progress for all children, because wide differences in mental age and background cause young school entrants to learn at widely different rates.<sup>1</sup>

Olson<sup>2</sup> relates that schools of the United States, in the mass, are making a slow but steady adjustment to the concept of education as growth compared to the idea of education as a method for selection of children against some fixed external standard.

Hildreth<sup>3</sup> claims that in communities where some children are admitted below the required entrance age on prediction from reading readiness tests and observations that these children have sufficient maturity to work well with the five and six year-olds respectively.

Educators and administrators seem to recognize the fact that chronological age is only one factor contributing to a child's success or failure in school.

The fact that a child has reached the required school entrance age does not guarantee success in learning, because the factors of readiness and mental capacity for learning must be taken into account.

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<sup>1</sup>Gertrude H. Hildreth. Readiness for School Beginners. New York: World Book Company, 1950. p. 29.

<sup>2</sup>Willard C. Olson. "Reading as a Function of the Total Growth of the Child." Reading and Pupil Development. In Gray, W. S. (Ed.) Proceedings, Conference on Reading Held at University of Chicago. Supplementary Educational Monographs, No. 51, 1940. p. 233-37.

<sup>3</sup>Hildreth, op. cit., p. 29-30.

### Reading Readiness

Although the term "reading readiness" has been in popular use approximately three decades, its early use was confined primarily to maturation and its effect on beginning reading. Actually, however, the idea of readiness cannot be confined to first grade or even primary grade levels. Readiness is undoubtedly a factor in successful reading at all grade levels.

Russell<sup>1</sup> says that the concept of readiness is influencing more school practices and that the idea is largely an outgrowth of the child-study movement. He suggests that there is an optimum time for any particular learning, and that attempts at instruction before this stage is reached are usually laborious and unsuccessful.

Gates<sup>3</sup> suggests readiness means somewhat different things to different people. Some regard it only as an expression of interest or purpose. Others describe it with emphasis upon general maturation which occurs in rather regular physical, mental, and other ways in most individuals.

Some teachers and writers stress maturation in specific matters such as visual equipment or being secure enough emotionally to talk in a group. Still others believe that readiness depends upon information or abilities developed during

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<sup>1</sup>David H. Russell. Children Learn to Read. Boston: Ginn and Company, 1949. p. 120.

<sup>2</sup>Arthur I. Gates. "Basal Principles in Reading Readiness Testing." Teachers College Record 40: 495-506; March 1939.

educational experiences. It seems probable that readiness is usually a composite of all these, with the influence on any one factor depending upon the type of activity involved. Certainly all these factors seem involved in reading readiness.

Stanger<sup>1</sup> defines reading readiness as "a particular fitness for reading characterized as language maturity," and lists the following factors important for success in beginning reading:

- (1) a mental age of six and one half years,
- (2) good vision, (3) ability to make visual and auditory discriminations between word forms and sounds, (4) wide background of information and experience in science, social science and literature, (5) ability to perceive simple relationships between ideas, (6) little or no tendency to reversals, (7) ability to fuse or blend sounds into words, (8) good speaking vocabulary, (9) ability to express thoughts in acceptable language units, sentences, etc., (10) ability to associate symbols such as names and signs with meaning, (11) ability to enunciate and articulate correctly, (12) curiosity, interest, anticipation, (13) the desire for reading and an appreciation for the content of books.

She qualifies this list by saying, "although these are positive factors in reading readiness, they vary with each child and all are not necessary prerequisites to reading."

Wright<sup>2</sup> says a child's readiness for systematic reading is influenced by many factors, of which, physical conditions,

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<sup>1</sup>Margaret A. Stanger, and Donahue, Ellen K. Prediction and Prevention of Reading Difficulties. Oxford University Press, 1937. p. 19.

<sup>2</sup>W. W. Wright. "Reading Readiness: A Prognostic Study." Bulletin of the School of Education. Bureau of Cooperative Research, Indiana University, Bloomington, 1936. p. 43.

mental abilities, personal qualities, and experience background are the more important ones.

Morphett and Washburne<sup>1</sup> say,

Reading readiness means the maturation of all the mental, physical and emotional factors involved in the reading process. Regardless of the chronological age of the child, the point at which the child's growth and development have brought about proper maturation of these factors should be the point at which the reading process begins.

Murphy<sup>2</sup> defines reading readiness as...the development of skills necessary so that the child may learn to read without confusion.

Steinback,<sup>3</sup> in studying the relationship between reading achievement and readiness factors in three hundred grade one pupils, found no single factor of primary importance but concludes "that these traits are positively correlated and mutually related".

The most striking facts that have been brought out in readiness surveys of school entrants seem to be (1) the ex-

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<sup>1</sup>Mabel V. Morphett and Washburne, Carleton. "When Should Children Begin to Read?" Elementary School Journal 31: 496-503; March 1931.

<sup>2</sup>Helen A. Murphy. "An Evaluation of the Effect of Specific Training in Auditory and Visual Discrimination of Beginning Reading." Unpublished Ed.D. Thesis, Boston University School of Education, 1943.

<sup>3</sup>Sister Mary Nila Steinback. "An Experimental Study of Progress in First Grade Reading." The Catholic University of America Educational Research Monographs XII, No. 2, Washington D. C.: The Catholic Educational Press, 1940. p. 118.



tremely wide range of ability found in any typical entering group, and (2) the relative immaturity of a large proportion of the entering population for undertaking the conventional first grade program.

Smith and Jensen<sup>1</sup> state that,

Here and there educators, psychologists, medical men, and other authorities are advising postponement of reading, suggesting six years and six months up to as late as the tenth year as the proper age for beginning reading and claiming that children will reach maturity with no loss and much gain.

They further claim that "only the expert can realize the coordinations of mental, physical, and emotional factors necessary for accomplishment."

Hildreth<sup>2</sup> lists the following as a possible guide in answering the question "How do we know when a child is ready for school?"

If he has mentality and understanding of language typical of most six year olds, if he is able to comprehend and follow simple instructions, has made normal progress in motor coordination, beyond the "baby stage" in emotional control, achieved good physical development, has a small stock of information about common everyday things in his environment, and he shows a healthy curiosity for new knowledge.

It is evident that a large body of information has been collected about reading readiness. Most writers agree that it

<sup>1</sup>C. A. Smith and Jensen, Myrtle. "Educational, Psychological and Physiological Factors in Reading Readiness." Elementary School Journal 36: 583-594; April and May 1936.

<sup>2</sup>Gertrude H. Hildreth. "Readiness for First Grade." National Parent Teacher 40: 7-9; March 1946.

is a complex process depending upon (1) physical factors, (2) mental factors, (3) social-emotional factors, and (4) psychological factors.

Kopel's<sup>1</sup> summarization of research data indicates that factors connected with reading readiness may include intelligence, informal reading performance, health and physical status, emotional and social growth, language usage, and general breadth of experience.

### Intelligence

Intelligence, like reading readiness, has many definitions. Thurstone<sup>2</sup> says, "Intelligence may be defined as the composite of abilities for acquiring knowledge of various types.

Binet<sup>3</sup> defined intelligence in terms of a trinitarian concept: "(1) the capacity to think along a definite direction, (2) to make adaptations to a given end, (3) to criticize solutions."

Freeman<sup>4</sup> lists three concepts of intelligence: "(1) the organic, (2) the social, (3) the psychological or behavioristic,

<sup>1</sup>David Kopel. "Reading Readiness: Its Determination and Use." Teachers College Journal 13: 64-70; January 1942.

<sup>2</sup>L. L. Thurstone and Thurstone, T. G. Examiner Manual for Tests of Primary Mental Abilities for Ages 5-6. Chicago: Science Research Associates, 1946. p. ii.

<sup>3</sup>Terman and Merrill. Revised Stanford-Binet Scale. Boston: Houghton Mifflin Company.

<sup>4</sup>Frank N. Freeman. Mental Tests: Their History, Principles and Applications, (Revised Edition). Boston: Houghton Mifflin Company, 1939. p. 248.

the third being the only one of direct interest to intelligence testers. The others he calls 'factors' in intelligence.

For the Stanford revision of the Binet-Simon Scale, Terman<sup>1</sup> defined intelligence as "the ability to do abstract thinking". He relied upon three criteria of intelligence, namely, age increase, coherency, and world success.

"Intellect in general," says Thorndike,<sup>2</sup> "is the power of good responses from the point of view of truth or fact."

Dearborn's<sup>3</sup> definition is "...the capacity to learn or profit by experience."

Pintner<sup>4</sup> thinks of intelligence as the ability of the individual to adapt adequately to new situations.

According to Deputy<sup>5</sup> pupils at the same intelligence level do not advance equally.

The evidence cited indicates that although there is no agreement among psychologists regarding an exact definition or the exact nature of the combination of abilities known as intelligence, there is agreement that intelligence is not a

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<sup>1</sup>Symposium. "Intelligence and Its Measurement." Journal of Educational Psychology 21: 123-147; March and April 1921.

<sup>2</sup>Ibid., p. 123-147, 195-216.

<sup>3</sup>Ibid.

<sup>4</sup>Ibid.

<sup>5</sup>E. C. Deputy. "Predicting First Grade Reading Achievement. A Study in Reading Readiness." Teachers College Contribution to Education, No. 426. Columbia University, New York. p. 2.

unitary trait but a theoretical composite whose elements can be tested, and that individuals vary greatly in the amount and quality they possess.

### Mental Age

The mental age is a valuable measure of intelligence because it is used as a standard of mental maturity for purposes of classification. The mental age is a pupil's score on a general intelligence test interpreted in terms of chronological age.

For some time the problem of determining the optimum or necessary mental age for success in school work has been under investigation.

"Of the three measures of intelligence--mental age, average of the mental and chronological ages, and intelligent quotient," Morphett and Washburne<sup>1</sup> contend that, "mental age shows the greatest degree of relationship--although the differences are slight."

Dean<sup>2</sup> experimenting with readiness tests and mental age, found that the relation of mental age to reading achievement is .62, while readiness tests and achievement showed correlation of .59, therefore, mental age is a better predictor than readiness scores.

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<sup>1</sup>Mabel V. Morphett and Washburne, Carleton. "When Should Children Begin to Read?" Elementary School Journal 31: 496-503; March 1931.

<sup>2</sup>C. P. Dean. "Predicting First Grade Reading Achievement." Elementary School Journal 39: 609-16; April 1939.

Harrison<sup>1</sup> reports that although an adequate mental age alone does not insure reading success, a mental age of at least six years seems necessary to make success probable and that a mental age of six years and six months make success more certain.

Rosebrook<sup>2</sup> accepted it as fact that "no child should be expected to learn to read until he has attained a mental age of six years, six months to seven years. The greatest progress ...is made after a child has reached this mental age."

Davidson<sup>3</sup> reported success in reading attainment of mentally four year old children.

Roguse<sup>4</sup> concluded that a five year mental age is sufficient for success.

Gates<sup>5</sup> assembled data on the relations between mental age and success in learning to read in grade one in four groups

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<sup>1</sup>M. Lucille Harrison. "Reading Readiness (revised and enlarged). Boston: Houghton Mifflin Company, 1939. p. 8.

<sup>2</sup>Rosebrook, Wilda. "Preventing Reading Deficiency." Elementary School Journal 36: 276-280; March 1935.

<sup>3</sup>H. P. Davidson. "An Experimental Study of Bright, Average, and Dull Children at the Four Year Mental Level." Genetic Psychology Monographs, 9, Nos. 3 and 4, 1931.

<sup>4</sup>Roguse, F. W. "Qualitative and Quantitative Achievements in First Grade Reading." Teachers College Record 32: 424-426; February 1931.

<sup>5</sup>Arthur I. Gates. "The Necessary Mental Age for Beginning Reading." Elementary School Journal 37: 497-508; May 1937.

which were taught by appreciably different methods and materials. In the first group, a mental age of five years was sufficient; in the second group, it was a half year higher; the third group required a mental age of about six years; in the fourth group, children with a mental age of six years and five months fared none too well and some of those with mental ages of seven years or above had difficulty.

"Children of the same mental age," says Hildreth<sup>1</sup> "still vary widely in potentiality for learning. Of three children with a mental age of six, one may learn very rapidly, one at an average pace, and the third very slowly."

From many research findings, the conclusions may be reached that mental ages of less than six years may handicap children and that they may be slower in mastering the reading rudiments, than those who have more mental maturity. It further reveals that no one mental age is a guarantee of successful achievement.

### Personality

"Research shows a close relationship between learning difficulties and personality adjustments," states Anderson.<sup>2</sup>

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<sup>1</sup>Gertrude H. Hildreth. Readiness for School Beginners. New York: World Book Company, 1950. p. 19-20.

<sup>2</sup>John E. Anderson. "The Relation of Emotional Behavior to Learning." Psychology of Learning, Forty-First Yearbook, Part II, National Society for the Study of Education. Public School Publishing Company, 1942.

Peck and McGlothlin<sup>1</sup> studied the correlation between achievement and other factors and found that breadth of information, readiness scores, mental age, and personality ratings show closest correlation to reading success with I. Q. and socio-economic status next.

"Personality was at one time thought to be largely, if not entirely the result of biological inheritance. However, most authorities today," states Olson,<sup>2</sup> "prefer the view that it is the resultant of both hereditary and environmental factors."

Since total personality often appears too complex for measurement or experimental purposes, much effort has been expended in breaking it up into elements which can be more easily studied. Instead of working with types of complex wholes, most investigators have applied themselves to the study of "traits". A trait is usually regarded as a determining tendency or readiness to response within the individual which gives a coherence to his behavior in many situations. Many have argued that personality is a compound of specific habits or learned responses to specific situations. It is highly debatable whether any trait exists in independence of other traits. The task of isolating and naming traits with sufficient precision for scientific use in personality study is a difficult one.

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<sup>1</sup>Leigh Peck and McGlothlin, L. E. "Children's Information and Success in First Grade Reading." Journal of Educational Psychology 21: 653-654; December 1940.

<sup>2</sup>Willard C. Olson. "Personality." Encyclopedia of Educational Research. New York: The Macmillan Company, 1941. p. 786.

A trait is generally described by psychologists as any relatively permanent and distinctive mode of behavior. It amounts to a social attitude; it is fairly consistent thinking and acting in accordance with some social standard or ideal, is the opinion of Gates<sup>1</sup> and others.

Shaffer<sup>2</sup> states that "personality traits of an individual are his persistent habits toward making certain types of adjustment rather than other kinds."

Traxler<sup>3</sup> considers the term to include the "sum total of an individual's behavior."

Personality as observed in the present has its roots in the past and is in continual process of 'becoming'. Since personality develops in a cultural field of forces, the family, school, and other associates are powerful influences in its shaping. There is urgent need for long time studies of individuals in various cultures to determine the educational and cultural influences which may be consciously manipulated for the desired type of personal growth.

An inspection of the research reveals common elements either expressed or implied.

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<sup>1</sup>Gates, Jersild, McConnell and Challman. Educational Psychology. New York: Macmillan Company, 1942. p. 400.

<sup>2</sup>Laurance F. Shaffer. The Psychology of Adjustment. Boston: Houghton Mifflin Company, 1936. p. 132.

<sup>3</sup>Arthur E. Traxler. "The Use of Tests and Rating Devices in the Appraisal of Personality." Educational Records Bulletin No. 23. New York: Educational Records Bureau, March 1938.p.4.



1. Each human being is first an individual by inheritance, and then becomes a personality by learning in a social world.
2. Personality refers to one's total integrated behavior, and not some particular aspect.
3. The word "personality" stands for a concept which of course exists in the minds of others.
4. Personality does not refer to something static, such as size or color, but to the totality or unity of one's actions.
5. Personality does not merely unfold; a person uses his capacities to make adaptations in the social world.

#### Teacher Appraisal

Teacher judgment is an essential aspect of readiness appraisal; it is somewhat more effective than either mental tests or readiness tests in predicting readiness. Kottmeyer<sup>1</sup> reports a total prediction accuracy of 71.4 per cent for teachers as compared with 66.6 per cent for a readiness test and 63.3 per cent for a mental test.

Hildreth<sup>2</sup> reports in her study on child growth,

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<sup>1</sup>William Kottmeyer. "Readiness for Reading." Elementary School Journal 34: 355-66; October 1947.

<sup>2</sup>Gertrude H. Hildreth. Child Growth Through Education. New York: Ronald Press Company, 1948. p. 340-346.

The teacher is best qualified to size up the pupils, not only as individuals but as members of a group, and to record systematically all relevant facts.... Teacher's observations are better systematized and tend to be more objective when ratings are in terms of uniform check lists.

Teacher-pupil ratings have advantages, also. When a pupil attempts to rate his own growth, his attention is called to standards of desirable behavior, the contrast between his former and his present behavior, the extent of growth he has achieved, and the prospect of growth in the future.

A summary of the above research seems to indicate the extent and complexity of factors contributing to the success or failure of school entrants and that no one factor can be isolated and made responsible for that success or failure. Evidence suggests that chronological age is the least important in predicting successful school progress and personality adjustment. Intelligence, mental age, and emotional factors are important in prognosis of success but that all are affected by background, and potentiality for learning. The research also shows that although children have some traits in common, each child will have his own individual characteristics. Their backgrounds are quite diverse, and they will show a wide diversity in personal traits, in learning ability and in pre-school achievement.

Therefore, this study is an attempt to discover the achievement and personality adjustment of underage children compared with children admitted at the required age.

CHAPTER II

PLAN OF THE STUDY

## CHAPTER II

## PLAN OF THE STUDY

Definition of Terms

The expression underage children as used in this study refers to kindergarten entrants who were chronologically under four years and nine months, but who were tested and found to have a mental age of five or more. Underage children and tested children are synonymous terms.

The expression required age children in this study means the children who were four years and nine months chronologically, as of October first, the year of entry into kindergarten. Required age children and nontested children are synonymous terms.

The purpose of this study is to compare the academic achievement and social progress of children admitted to kindergarten under age with that of children admitted at a required chronological age.

This study required standard records and other information concerning a large number of children. A well organized Child Placement Department in a large Metropolitan Community contained the necessary records.

From the three hundred children tested for entry to kindergarten in the years 1940-41 and 1941-42, one hundred fourteen boys and girls had completed the eighth grade in the

community. These children were selected for the study. A similar number of children from the same schools who were admitted at the required chronological age were also selected.

The testing program for the community includes a Kuhlman Anderson Test<sup>1</sup> in grade five and a Metropolitan Achievement Test in grades two through eight.

Separate record sheets are on file for every class listing the name, sex, grade, birthdate, chronological age, mental age, I. Q., handedness, date of test, and achievement scores in reading, arithmetic, language, spelling, and total average.

From these record sheets of the Kuhlman Anderson Tests given in grade five, the birth date, chronological age, mental age, and I. Q. of each underage child was recorded on the data sheets, by schools.

Each underage child was paired with a child of required age of the same sex, mental age and school. If there was a difference in mental age, the child with the nearest I. Q. was selected. The one hundred fourteen underage children and one hundred fourteen children of required age total the two hundred twenty-eight children of this study.

From the Metropolitan Achievement Test<sup>2</sup> records of grade eight, the reading average, arithmetic average, and total average was taken and recorded on the data sheets.

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<sup>1</sup>Kuhlman Anderson Intelligence Test. Minneapolis, Minnesota: Educational Test Bureau.

<sup>2</sup>Metropolitan Achievement Test. Boston: World Book Company.

On file in the Guidance Office at the High School, are personality rating charts for each eighth grade graduate. The pupils rate themselves first, and then the seventh and eighth grade teachers confer with the principal in rating each of the ten traits of personality. The numerical rating of each child was added to the data sheets.

The graphic rating scale was developed by the Director of Child Placement. It was originally devised to aid in studying the problems of maladjustment. It has been revised twice with the assistance of the Counseling Committee, school principals, and house masters of the high school. At present it is repeated in the third year of high school.

A copy of the rating sheet follows.

CHAPTER III

ANALYSIS OF DATA

## CHAPTER III

### ANALYSIS OF DATA

When is a child ready to enter school? The many contrasts in growth and development continue to define some important administrative problems.

A review of research indicates two approaches. The first one is allowing children to enter school at a required chronological age. The second one is that of careful selection of entrants by testing. The criterion for any approach, however, should be the effect it has upon the children.

Therefore, the data of this study was analyzed to discover how tested children compare with children of required chronological age in achievement in:

1. Reading
2. Arithmetic
3. Total Average
4. Personality Development

Table I shows the distribution of chronological ages, the mean, and standard deviation of the 228 children in this study.



TABLE I  
DISTRIBUTION OF CHRONOLOGICAL AGES

Chronological Age Distribution		
Age	Tested	Nontested
Yr.-Mo.	f	f
11 - 1		1
11 - 0		0
10 -11		0
10 -10	1	1
10 - 9	0	1
10 - 8	1	5
10 - 7	0	7
10 - 6	0	12
10 - 5	0	10
10 - 4	1	16
10 - 3	1	14
10 - 2	0	13
10 - 1	1	22
10 - 0	1	12
9 -11	12	
9 -10	26	
9 - 9	15	
9 - 8	17	
9 - 7	17	
9 - 6	7	
9 - 5	8	
9 - 4	4	
9 - 3	2	
Number	114	114
Mean	9.9	10.4
S.D.	2.7	2.43

The mean chronological age of the tested group was 9.9 compared with 10.4 for the nontested group.

The largest number of children in the tested group are between nine years, four months and nine years, eleven months and those of the nontested group between ten years and ten years, eight months.

Table II shows the distribution of mental ages, the mean, and the standard deviation.

TABLE II  
DISTRIBUTION OF MENTAL AGES

Mental Age Distribution			
Age		Tested	Nontested
From	To	f	f
13- 8	14- 0	1	1
13- 3	13- 7	2	2
12-10	13- 2	4	5
12- 5	12- 9	7	6
12- 0	12- 4	11	22
11- 7	11-11	20	16
11- 2	11- 6	38	29
10- 9	11- 1	15	9
10- 4	10- 8	9	10
9-11	10- 3	2	12
9- 6	9-10	5	2
Total Number		114	114
Mean		11.4	11.5
S. D.		8.35	10.45

Eighty per cent of the children in each group fell between the ages of ten years, four months and twelve years, four months mentally. The slight difference is in favor of the nontested children.

Table III shows the distribution of I. Q.'s, the mean, and standard deviation of both groups.

TABLE III  
DISTRIBUTION OF I. Q.'S

Distribution of I. Q.'s		
I. Q.	Tested	Nontested
Range	f	f
141 - 143	1	
138 - 140	0	
135 - 137	4	
132 - 134	1	
129 - 131	7	1
126 - 128	5	6
123 - 125	8	2
120 - 122	27	12
117 - 119	20	17
114 - 116	15	19
111 - 113	7	20
108 - 110	4	14
105 - 107	6	9
102 - 104	2	3
99 - 101	2	5
96 - 98	5	6
Number	114	114
Mean	118.9	113.5
S. D.	8.82	7.44

The tested children have samplings higher than the required age group, but about 80 per cent of both groups range between 105 and 125. A larger group of required age children fall below 105.

Table IV show the comparison of reading achievement of both groups.

TABLE IV  
COMPARISON OF READING ACHIEVEMENT

Group	No.	Mean	S.D.	S.E. <sub>m</sub>	Diff. <sub>m<sub>1</sub>m<sub>2</sub></sub>	S.E. Dif.	C.R.
Tested	114	9.8	13.20	1.24	0.3	1.83	.16
Nontested	114	10.1	14.30	1.35			

The mean reading grade of the tested children was 9.8 compared with 10.1 of the nontested children. The critical ratio of .16 shows the difference is not statistically significant.

Table V shows the arithmetic achievement of both groups.

TABLE V  
COMPARISON OF ARITHMETIC ACHIEVEMENT

Group	No.	Mean	S.D.	S.E. <sub>m</sub>	Diff. <sub>m<sub>1</sub>m<sub>2</sub></sub>	S.E. Dif.	C.R.
Tested	114	9.2	12.30	1.16	.00		
Nontested	114	9.2	12.25	1.15			

The mean scores were exactly the same for both groups.

Table VI shows the total average achievement of both groups.

TABLE VI  
COMPARISON TOTAL AVERAGE ACHIEVEMENT

Group	No.	Mean	S.D.	S.E. <sub>m</sub>	Diff. <sub>m<sub>1</sub>m<sub>2</sub></sub>	S.E. Dif.	C.R.
Tested	114	9.2	11.00	1.04	.3	1.94	.15
Nontested	114	9.5	11.28	1.64			

The mean total average achievement of the tested children was 9.2 compared with 9.5 of the nontest children. The difference is not significant.

Table VII shows the rating of both groups in Attention, personality trait number one.

TABLE VII  
COMPARATIVE RATING OF ATTENTION

Group	No.	Mean	S.D.	S.E. <sub>m</sub>	Diff. <sub>m<sub>1</sub>m<sub>2</sub></sub>	S.E. Dif.	C.R.
Tested	114	67.5	18.1	1.7	.1	2.58	.04
Nontested	114	67.4	20.6	1.94			

The mean rating for the tested children was 67.5 compared with 67.4 for the nontested children. The critical ratio shows the difference is not significant.

Table VIII shows the rating of both groups in Work Habits, personality trait number two.

TABLE VIII  
COMPARATIVE RATING OF WORK HABITS

Group	No.	Mean	S.D.	S.E. <sub>m</sub>	Diff. <sub>m<sub>1</sub>m<sub>2</sub></sub>	S.E. <sub>d</sub>	G.R.
Tested	114	74.5	16.4	1.54	.8	2.31	.34
Nontested	114	73.7	18.4	1.73			

The mean rating of the tested children was 74.5 compared with 73.7 of the nontested children. The critical ratio shows the difference is not statistically significant.

Table IX shows the rating of both groups in Purposefulness, personality trait number three.

TABLE IX  
COMPARATIVE RATING OF PURPOSEFULNESS

Group	No.	Mean	S.D.	S.E. <sub>m</sub>	Diff. <sub>m<sub>1</sub>m<sub>2</sub></sub>	S.E. <sub>d</sub>	G.R.
Tested	114	74.2	19.2	1.81	.5	2.55	.19
Nontested	114	73.7	19.1	1.80			

The mean rating of the tested children was 74.2 compared with 73.7 of the nontested children. The critical ratio shows the difference is not statistically significant.

Table X shows the rating of both groups in Appearance, personality trait number four.

TABLE X  
COMPARATIVE RATING OF APPEARANCE

Group	No.	Mean	S.D.	S.E. <sub>m<sub>1</sub>m<sub>2</sub></sub>	Diff.	S.E. <sub>d</sub>	C.R.
Tested	114	85	15	1.41	1.3	1.93	.67
Nontested	114	86.3	14	1.32			

The mean rating of the tested children was 85 compared with 86.3 of the nontested children. The critical ratio shows the difference is not statistically significant.

Table XI shows the rating of both groups in Emotional Stability, personality trait number five.

TABLE XI  
COMPARISON OF EMOTIONAL STABILITY RATING

Group	No.	Mean	S.D.	S.E. <sub>m<sub>1</sub>m<sub>2</sub></sub>	Diff.	S.E. <sub>d</sub>	C.R.
Tested	114	70.7	16.5	1.55	2.7	2.35	1.15
Nontested	114	73.4	18.8	1.77			

The mean rating of the tested children was 70.7 compared with 73.4 for the nontested children. The critical ratio shows the difference is not significant. There are 65 chances in one hundred that the difference is a true difference in favor of the nontested group.

Table XII shows the rating of both groups in Self Confidence, personality trait number six.

TABLE XII  
COMPARISON OF RATING IN SELF CONFIDENCE

Group	No.	Mean	S.D.	S.E. <sub>m<sub>1</sub>m<sub>2</sub></sub>	Diff.	S.E. <sub>d</sub>	C.R.
Tested	114	67.8	15.7	1.48	7.4	2.01	3.13
Nontested	114	75.2	14.6	1.37			

The mean rating of the tested children was 67.8 compared with 75.2 for the nontested children. The critical ratio of 3.13 shows this is a true difference in favor of the nontested group.

Table XIII shows the rating of both groups in Social Poise, personality trait number seven.

TABLE XIII  
COMPARISON OF RATING IN SOCIAL POISE

Group	No.	Mean	S.D.	S.E. <sub>m<sub>1</sub>m<sub>2</sub></sub>	Diff.	S.E. <sub>d</sub>	C.R.
Tested	114	72.5	14.6	1.37	4.1	1.95	2.10
Nontested	114	76.6	14.9	1.4			

The mean rating of the tested children was 72.5 compared with 76.6 for the nontested children. The critical ratio of



2.10 shows the difference is not significant. There are 96 chances in one hundred that the difference is a true difference in favor of the nontested group.

Table XIV shows the rating of both groups in Popularity, personality trait number eight.

TABLE XIV  
COMPARISON OF RATING IN POPULARITY

Group	No.	Mean	S. D.	S.E. <sub>m<sub>1</sub>m<sub>2</sub></sub>	Diff.	S.E. <sub>d</sub>	C.R.
Tested	114	71.4	13.1	1.23	4.7	1.9	2.47
Nontested	114	76.1	15.5	1.46			

The mean rating of the tested children was 71.4 compared with 76.1 for the nontested children. The critical ratio shows the difference is not significant. There are 98 chances in one hundred that the difference is a true difference in favor of the nontested group.

Table XV shows the rating of both groups in Leadership, personality trait number nine.

TABLE XV  
COMPARISON OF RATING IN LEADERSHIP

Group	No.	Mean	S.D.	S.E. $_{m_1m_2}$	Diff.	S.E. $_d$	C.R.
Tested	114	65.8	16.6	1.56	2.2	2.37	.96
Nontested	114	68	19	1.79			

The mean rating of the tested children was 65.8 compared to 68 for the nontested children. The critical ratio of .96 shows the difference is not significant. There are 66 chances in one hundred that the difference is a true difference in favor of the nontested group.

Table XVI shows the rating of both groups in School Citizenship, personality trait number ten.

TABLE XVI  
COMPARISON OF RATING IN SCHOOL CITIZENSHIP

Group	No.	Mean	S.D.	S.E. $_{m_1m_2}$	Diff.	S.E. $_d$	C.R.
Tested	114	79.8	15.4	1.45	.8	1.46	.55
Nontested	114	79.0	18.0	1.7			

The mean rating of the tested children was 79.8 compared with 79 for the nontested children. The critical ratio shows the difference is not statistically significant.

CHAPTER IV

SUMMARY AND CONCLUSIONS

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The purpose of this study was to compare achievement and personality development of children admitted on test results with that of children admitted at the required chronological age.

The achievement data was secured from the results of the Metropolitan Achievement Test given in grade eight. The data on personality development was obtained from the composite rating charts made out at the end of grade eight.

From the data obtained, the following conclusions are drawn:

1. There seems to be little difference between the two groups in achievement. The difference tends to favor the older group.
  - a. The difference of .3 in the means of reading achievement is not significant, but favors the nontested group.
  - b. There is no difference in the arithmetic achievement.
  - c. The difference of .3 in means of total achievement is not significant, but favors the nontested group.
2. The difference in the traits of Attention, Work Habits, Purposefulness, and School Citizenship is

slight but favors the tested children. The difference in the other six traits of Appearance, Emotional Stability, Self Confidence, Social Poise, Popularity, and Leadership favors the nontested group.

- a. The difference in rating of Attention is .1 in favor of the tested children.
- b. The difference in rating of Work Habits is .8 in favor of the tested children.
- c. The difference in rating of Purposefulness is .5 in favor of the tested children.
- d. The difference in rating of Appearance is 1.3 in favor of the nontested children.
- e. The difference in rating of Emotional Stability is 2.7 in favor of the nontested children.
- f. The difference in rating of Self Confidence is 7.4 in favor of the nontested children.
- g. The difference in rating of Social Poise is 4.1 in favor of the nontested children.
- h. The difference in rating of Popularity is 4.7 in favor of the nontested children.
- i. The difference in rating of Leadership is 2.2 in favor of the nontested children.
- j. The difference in rating of School Citizenship is .8 in favor of the tested children.

It is evident that I.Q. and mental age are extremely important factors in revealing and predicting a child's chances for success in school work.

A study of the results of the complete data reveals that it is reasonable to expect normal academic progress and social adjustment from the underage children who are admitted to school by test, providing they are physically mature.

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