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# An Evaluation of the Early Entrance Program in the Highline School District King County, Washington

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AN EVALUATION OF THE EARLY ENTRANCE PROGRAM  
IN THE HIGHLINE SCHOOL DISTRICT  
KING COUNTY, WASHINGTON

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A Thesis  
Presented to  
the Faculty of the School of Education  
Central Washington State College

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Education

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by  
W. Keith Davis  
November, 1965

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APPROVED FOR THE GRADUATE FACULTY

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## CHAPTER I

### STATEMENT OF THE PROBLEM AND

### DEFINITION OF TERMS

This study is an attempt to determine whether or not the early entrance program as conducted by the Highline School District, King County, Washington, is achieving its purpose of selecting students who will profit from early admission.

In 1949 the Highline Board of Directors changed the cut-off date, by which time all entering first graders should be six years old, from November 15th to September 15th. The new date became effective in September, 1951. The earlier cut-off date was selected because the educators concerned felt it to be more compatible with good educational practice than the November date.

Many parents felt that the earlier cut-off date was not reasonable, so in 1959 R. Vance Hall (23) undertook a study of retentions of all students enrolled in grades one through six during the 1959-60 school year. The evidence of satisfactory scholastic achievement in favor of students at least six years, six months of age at entrance, as compared to those of less than six years, six months, was most convincing.

As a result of this study and other evidence in favor of an early cut-off date, the Board of Directors retained the September 15th birth-date deadline as district policy.



At that time, the tremendous explosion of knowledge that developed made it evident that longer years of schooling might become necessary to acquire an adequate education. With this fact in mind, and to accommodate those parents with precocious children, the Highline Board of Directors adopted the following policy (45:5111D).

On April 12, 1961, the school board revised the first grade entrance policy to provide for the admission of exceptionally bright and mature youngsters whose birthdates fall between September 15 and November 15 under certain conditions as set forth below:

1. The Binet Test of Intelligence be given by a qualified psychologist, with the child receiving an I.Q. score of at least 125.
2. The Metropolitan Reading Readiness Test be given - with a "Superior" rating.

If the child fails to meet the standards of these two tests, he need not be tested further. However, if he meets the above standards, he is eligible to proceed with the following.

3. A projective test be given by a qualified psychologist who will gather data relating to the child's physical, social, emotional, and cultural maturity.

The Department of Psychological Services, or private psychologists, shall provide the above information to the First Grade Entrance Committee, consisting of an elementary school principal, the director of elementary curriculum, and the assistant superintendent in charge of general administration, who will evaluate the information gathered and determine whether the child is eligible to enter the first grade. The decision of this committee shall be final.

Public notice of the new program was given through the local newspapers, and testing of candidates was begun in August, 1961. The first group qualifying under the program consisted of twenty-three youngsters, girls and boys, who were enrolled in grade one in the schools in

their respective service areas. Twenty-two pupils were admitted in September, 1963.

This study was begun in February, 1964, when those pupils who entered under the early-entrance program were enrolled in grades one, two, and three. The purpose of the study was to determine whether the total program was doing what it was designed to do: to give those students who were declared eligible for the program a sound and rewarding educational experience.

#### I. LIMITATIONS OF THE STUDY

The investigation was limited to a study and analysis of: (1) subjective teacher ratings of the sixty-two enrollees in the Highline School District, Seattle, Washington, or in other districts to which a pupil had transferred; and (2) data available in the permanent pupil records of school districts in which the students were enrolled.

#### II. DEFINITION OF TERMS

Early-entrance program. A program established by the Board of Directors, Highline School District, King County, Washington, to provide for the admission of exceptionally bright and mature children whose birth-dates fell between September 15 and November 15, under certain conditions prescribed by the Board of Directors.

Early entrant. A child whose sixth birthday fell between Septem-

ber 15 and November 15 who enrolled in a first grade in Highline School District after having been declared eligible under regulations specified by the Board of Directors.

A follow-up study was made, using an inventory and rating sheet directed to the teacher of each student in the Highline School District, or in the school district to which the student had transferred. Each teacher was asked to supply certain data from the pupil's permanent record folder, as well as to make his own assessment of the child's academic progress and personal characteristics. The data was treated separately for the boys and the girls except when comparing the combined group with the district norms.

The study compared the achievement of the students in the areas of reading and arithmetic with the achievement of their classmates, and with the district norms on standardized tests. Comparisons were made between achievement and personality traits to determine if those students rated low in personality traits were also below average or low in academic achievement.

## CHAPTER II

### REVIEW OF RELATED LITERATURE

For many decades much concern and controversy has revolved around the correct age at which a child should start his formal schooling. K. R. Cominsky (13:24-25), in writing of the early schools of Dartmouth, Massachusetts, reported that in 1839, eighty-six of 786 children enrolled were under four years of age. In one class of thirty pupils in 1842, three pupils were only two years old and seven pupils were four years old. He added that it was not until 1909 that six years became the minimum starting age.

L. W. Cole (11:418-19) was one of the earliest of the proponents for using mental age rather than chronological age as the determinant of starting age. In 1919 he advocated the enrollment of the five-year-old children of soldiers, as he felt that these youngsters might have their later schooling cut short. Starting at age five would assure them of an extra year of school.

Cole used the Binet Scale (Terman's Revision) to show that of the thirty-five five-year-olds in one first grade class he tested, eleven were doing superior work, twelve were doing average work, and ten were doing poor work.

In 1952 H. W. Heinz (27:318-21) published a study showing that the first grade entrance age was five years and eight months in fifteen states. Next in order of frequency were: seven states, five years, nine months;

six states, five years, ten months; six states, six years; two states, not under five years; one state, five years, three months, to six years.

More recent than the Heinz report was one published by the National Education Association (43:13-15) in 1959. Information was gathered from all urban districts of over 100,000 students, four districts having between 2,500 and 100,000 students and a selected group of county and suburban school systems. This report indicated a wide variety of starting ages varying from no established minimum to six years. The report stated that when comparisons were made with earlier surveys, a noticeable trend toward a higher minimum starting age was evident.

One of the most recent surveys on starting age was done in 1963, again by the National Education Association (44:77-78). Questionnaires were sent to all districts enrolling 12,000 or more pupils. Replies were received from 325 of these. Of this number, nearly seventy per cent of the reporting systems required that entering pupils be six years of age on or before December first. Of the 325 districts, approximately twenty-five per cent required that entering children be five years, eleven months or older.

Nearly one-half of the responding school systems reported that they would make exceptions to their established policy for transfer pupils or children with superior mental and social maturity.

This survey also reported a continuing trend toward raising minimum ages of entering first grade and kindergarten pupils.

Pertinent to this paper is a report submitted to the Puget Sound

League Superintendents' Association by Robert Burgess (8:1) in 1956. Questionnaires were sent to all school superintendents in the state of Washington. Three hundred and forty-five school administrators responded, covering 52,535 first grade pupils out of 53,234 enrolled in the state as of October 1, 1955. Answers to the question, "On or before what date must a first grade pupil be six years of age to be eligible to enroll in your school system?", revealed that such dates varied from the first day of school to January 1st. One district reported it had no established date.

A later interview with Robert Burgess, Assistant Superintendent, Highline Public Schools, revealed that although three King County Schools had advanced their cut-off date, the extremes of range continued to persist.

Though these studies indicated a trend toward raising the chronological age and giving consideration to mental age as one criterion for school entrance, one could see this was occurring slowly, and uniformity was decidedly lacking from one school district to another across the nation as well as in the state of Washington.

As some districts advanced their entrance ages, pressure was brought to bear by parents on some school people to make exceptions for certain pupils, or to move the entrance age requirement to a later date. Some argued that the regulations were discriminating against some students. Several writers, aware of these criticisms, began research to determine the reasons of parents who desired formal schooling for their children at

an early age.

Ruth Strickland and Phyllis Plichta (48:4-12) listed these reasons: (1) desire to get children started on education; (2) desire for association with other children; (3) cramped housing conditions; (4) ambitious parents who have a precocious child and want recognition for themselves.

L. B. Carter's 9:91-103) list included: (1) almost six, why delay? (2) parents' belief that child is accelerated for his age; (3) better transportation facilities are available than formerly; (4) mother is working; (5) no kindergarten available; (6) inadequate living conditions and facilities for play at home.

Jack Birch (7:84-87) cited the advantages from the viewpoint of the parents as an opportunity to enter college early, and to have an earlier marriage.

Educators have long recognized that when dealing with the total school population, a chronological age of less than six years is unrealistic. Volumes of documental research are available to attest to this fact.

Although most of this material did not pertain to this study of a selected school population, many of the reasons the researchers advance for their conclusion did pertain.

Hildreth's (28:22-27) contention was that:

...children tend to fail if they have a mental age of less than six years and four months at entrance. Only the brighter children and those who are nearing six and a half by opening of school in

September make good progress with the traditional first grade program. Slow learners and those who are much younger and no more than normally bright have a difficult time.

Young children who are slow learners should certainly not be in a regular first grade, nor should bright young children who are glib with the "abc's" and "counting to ten" but are poor adjustment risks in terms of social and emotional behavior.

Estelle Hansman (26:25-26) corroborated Hildreth's thinking by stating:

...children under six years of age chronologically and mentally have practically no success in beginning school work...it has been proved that a mental age of six years and four months may be taken as a safe place for children to begin.

Margaret Ammons and John Goodlad (1:21-26), in their study of the research of current practice regarding school entrance and of the effect of early entrance on achievement, found that: (1) no saving in time is accomplished and more problems are encountered if the average child is admitted early; (2) bright children carefully screened are good risks for entering school several months earlier than the minimum age; (3) bright children entered early may have problems in other areas later.

R. S. Hampleman (25:331-34) made a study to determine whether pupils who started school at the age of six years, four months or more, fared better in the sixth grade than those who began their schooling before reaching that age. Hampleman's conclusions bear out the findings of writers cited previously. He stated (1) children seem to have a better chance in school if they start later; (2) those with a higher intelligence quotient have a better chance if they do start earlier; (3) those with an intelligence quotient below one hundred have little chance if



they begin school before they are six years and four months old.

In 1959-60 Hall (23:Chap. III) made a study in the Highline School District to determine the effect of chronological age and success in school, using a history of retentions as the basis for his study.

At the time of the study there were 6,410 boys and 6,352 girls in the six elementary grades of the thirty schools in the districts. Of the boys, 586 had been retained, and of the girls, 215 had been retained. The combined total of 801 retentions represented 6.3 per cent of the total school population in grades one to six. For purposes of comparison, Hall divided the boys and girls into underage (students less than six years, six months of age at entrance into grade one), and overage (students six years, six months of age or older at entrance into grade one).

The underage group of boys represented 77.9 per cent of the retentions for their sex as compared to 22.1 per cent for the overage boys. For the girls the underage contributed eighty per cent and the overage twenty per cent.

In addition to his study of retentions, Hall also studied the achievement scores of the groups previously indicated. At this time the Science Research Associates Achievement Series, Form A, was administered to all third and sixth grade pupils in the Highline District as a part of the standard testing program in the elementary schools of the system. Using Tate's Table of Random Numbers, ten schools were selected which yielded scores for 607 third-grade pupils and 556 sixth-grade pupils. In

his summary of this portion of his study, Hall noted that: (1) girls achieved at a higher level than boys, particularly in reading and language arts; (2) overage girls and boys achieved at a higher level than the underaged of their sex; (3) the overage girls achieved at the highest level of all four groups; (4) the underage boys achieved at a lower level than any other group; in some areas they were two years behind the average girls; (5) the difference in achievement increased from the third to the sixth grade.

Hall's study was influential in the decision of the board and administration to maintain September 15th as the date by which a youngster must be six years old to be eligible to enter the first grade rather than to set a later date which would coincide with the dates of neighboring districts.

In commenting on his study for a national journal, Hall (24:347-51) wrote:

In reviewing all available research relating chronological age to school achievement, I found that...first, the older a pupil was at entrance, the greater his chances of success academically, socially, and emotionally; second, the higher the mental age at school entrance, the better the chances of success; third, factors other than age and intelligence played a role in determining success; fourth, the pupils who entered early on the basis of intelligence or mental-age tests achieved above the level of those who were not allowed to enter early; fifth, bright children who entered early had more than the average number of social and emotional problems in secondary school.

In their review of admission practices for the Encyclopedia of Educational Research, Harold G. Shane and J. Z. Polychrones (45:425-26)

stated:

In summary, admission practices probably can be simplified, improved or facilitated by: (a) the establishment of more kindergartens which provide early experience; (b) the selective admission of children who are as much as two months below the normal chronological entrance age but with a mental age two or more months above their chronological age, and who are in good health and physically mature; and (c) parent education designed to reduce emotional attitudes toward normal variations in mental age which would permit some pupils, particularly girls, to enter school sooner than other students of the same chronological age.

The studies of recognized authorities just reviewed were consistent in their findings on several points that have certain implications particularly pertinent to this paper, namely: (1) that a mental age of at least six years, four months, was necessary for successful achievement in grade one; (2) that younger children of superior mental ability were good educational risks; (3) that factors other than age and intelligence played an important part as determinants of success.

When a selected school population was considered, several questions arose: who were these children? what were their traits and characteristics? what proportion of the total school population do they contribute?

Lewis Terman (49:Chap. V) said that children in the 120 to 140 intelligence quotient range should be considered to be of "very superior intelligence", and those in the 140 and above range should be considered "near genius, or genius".

Carter (9:91-103), in his review of literature concerned with

mentally superior individuals, reported that the term "gifted children" has traditionally been applied to those of superior intelligence as measured by standard psychological tests. He further explained that since the term is quantitative and does not imply any particular level, cut-off points may be established as matters of convenience. He reported that different researchers used cut-off points ranging from an intelligence quotient of 110 to 140.

Lloyd M. Dunn (17:193) conducted studies of intelligence using Stanford-Binet intellectual levels, and determined that children with an intelligence quotient of 125 or above comprise but five to seven per cent of the total school population in the average community.

Norma Cutts and Nicholas Moseby (16:32) stated that:

A pupil with an I.Q. of 125 has a mental age twenty-five per cent greater than his chronological age. That is, when his chronological age is six years, his mental age is seven and one-half, or one year and six months greater than his chronological age.

It was mentioned earlier that factors other than age and intelligence are determiners of readiness for a successful educational experience for children.

Emmett A. Betts (5:120) summarized his thinking on this aspect when he wrote:

Since reading is largely a "thinking" process, it follows that mental maturity is a primary factor in reading ability. A child of low mental ability is not likely to succeed with typical reading activities because he has very little to take to the printed page. On the other hand, some children with normal or superior intelligence do not succeed with reading activities. It does appear that mental maturity is essential

in dealing with reading, but that mental maturity does not insure success.

Earlier in this chapter it was recorded that several authors remarked that social, emotional, and physical maturity were necessary for successful school achievement.

Norma Oak-Bruce (39:312-16) listed other factors that can cause a lack of school readiness. She contended that some children lack group experiences, and that they do not get normal conversation and vocabulary experiences at home. Negative attitudes, false conceptions of what will happen in school, poor eyesight, serious hearing loss, poor nutrition, a critical attitude toward school by parents, and older sibling attitudes which cause fear can all play a role in determining readiness for school.

The obvious question at this juncture seemed to the writer to be: What can be expected of mentally superior students, as regards personal traits, when they are compared to the normal school population?

For the purposes of this paper, the writings of Jordan (30:Chap. II) would seem most appropriate, as he uses an intelligence quotient of 130 as his cut-off point. He also cautioned that there are "no gaps between the gifted and the normals".

In the chapter devoted to the gifted, Jordan explored the mental, physical, social, and emotional traits of this group as well as their interests and social and emotional development.

In discussing the physical characteristics of the mentally superior, Jordan wrote that the gifted, as a group, are above the average for

American-born children in physical growth, height, and weight.

Concerning the mental traits of this group, Jordan observed that they are superior in all those traits which enter into intelligence. They learn more rapidly, and because of their greater capacities to perceive relations, assimilate and understand more of what they read. Even more important educationally was the ability of the superior students to make abstractions and generalizations, for this, said Jordan, "is the very essence of the capacity for learning". The author also commented that these children scored high in tests of word knowledge. This is consistent with the fact that the abilities to abstract and generalize are dependent upon the mastery of words. Jordan cautioned against assuming that the superior student would surpass the average student in every subject area. There was considerable overlapping, particularly in the areas of handwriting, spelling, the manual arts, and music.

In a discussion of interests, Jordan presented a table comparing a group of superior students and a control group of average youngsters. This table revealed that superior students indicated a much greater interest than the controls in science, history, English, and mathematics; about the same degree of interest as the normal in music, language, and commercial work, but less interest on the part of the superior students in manual work and drawing.

Jordan obtained estimates from both teachers and parents on personality traits that showed the superior students are equal to or ahead of the normal group in all of the traits estimated. The gifted proved to be

definitely superior in self-confidence, sense of humor, desire to excel, truthfulness, desire to know, originality, common sense, and in general intelligence.

Commenting on the emotional and social development, Jordan remarked that the brilliant or gifted "become well or poorly adapted according to their environmental stimulation". If much is made of such a child's abilities, to quote the author,

...that youngster is a genius indeed who does not come to feel that the whole world revolves for his particular pleasure.

On the other hand if he received his proportionate share of praise and affection in the home, and if his family and teachers have insisted on a well-rounded physical, personal, and emotional development, the brilliant student is more apt to be a leader among his fellows and a delightful person to know.

Jordan concluded his remarks by stating:

To sum up: The gifted are a great deal ahead in intellectual and volitional traits, somewhat ahead in emotional, moral, and physical, and only slightly ahead in social traits. The superiority of the gifted, then, is a general and not a particular one.

Although the above generalizations are Jordan's own, it was clearly apparent that he made every effort to substantiate his findings by drawing upon the research of other recognized authorities for corroboration in every topic discussed.

It became evident that children selected for early admission must be most carefully screened if their educational experience is to be a rewarding one.

It also became evident that the attitudes of school administrators regarding selective admissions, and the policies and practices used by them in initiating such programs, must be explored.

Dr. L. V. Granville (22:33), Superintendent of Schools in Salinas, California, stated his position vigorously when he remarked:

The calendar age of children is a costly bungling basis for admission to the first grade. Too often it is the only criterion considered. By ignoring mental and social maturity and readiness for formal education, millions in tax funds are being diverted annually for baby-sitting.

Sophisticated developments in testing and measuring are put to little use in screening children for school admission. Certainly there are practical means of determining when children are ready to accept formal education, thus eliminating the frivolity of making schools ready for children.

Some districts are enjoying the benefits of a sophisticated admission policy, but archaic statutes stand in the way of the great majority.

It's difficult to tell parents their six-year old is not ready for school--but can we afford not to do it? Similarly can we afford to waste the intelligence of a child who is ready for formal education early, but who must mark time because of foolish regulations?

Granville's attitudes were strongly supported a short time later when Robert M. Finley (19:34), Superintendent of Schools, Barrington, Illinois, stated:

Since when should we, as professional educators with all our modern techniques and experience, rely on the chronological age of the child for the determination as to whether or not this child should begin school? Really, we are saying that this child is ready or not ready for school based on how long he has been on earth, and for no other reason.

This administrative convenience has absolutely no educa-



tional basis for the youngster in school.

Although Granville and Finley were most positive in their attitudes it is not to be construed that all administrators shared their opinions even though the majority did.

Because of a widespread interest in mental age as a criterion for admission to kindergarten or first grade, a forty-eight state survey was made by a professional journal in 1955 to determine the attitudes on the subject.

In answer to the question which follows, 52.9 per cent replied yes and 47.1 per cent replied no:

Would you favor entrance into the first year of your schools (either kindergarten or first grade) on the basis of mental age and physical and emotional maturity, as determined by standardized tests, rather than chronological age? (41:13-15)

In 1959, using information from a National Education Association (43:13-15) project mentioned above, Thomas C. Rowland and Calvin C. Nelson (42:18-23) sent questionnaires to fifty-seven districts which indicated they had flexible admission policies. Replies were received from thirty-six school systems where such policies were in effect for admission of pupils to first grade even though their birthdates fell after the district cut-off date. The age range for admission extended from five years, five months, to six years.

Of the districts reporting, ninety per cent used individual psychological examinations as their primary screening device. The Stanford-Binet Scale was used by seventy-two per cent of these districts.

In response to a question eliciting reactions of people involved in the programs, eighty-eight per cent reported satisfaction on the part of teachers and administrators, and that parent satisfaction was general.

Most causes for dissatisfaction were attributed to inadequate evaluation of the candidate. These dissatisfactions were most notable in districts which had recently initiated early entrance programs and lacked experience factors in making their evaluations.

The authors concluded their report by stating:

School districts where the programs are adequate and the patrons are generally pleased provide evidence that flexible admission programs can be successful. These districts are paving the way for an educational program based on the needs of today's children, not on the preconceptions of adults preoccupied with their own needs and the schools of their childhood.

The use of mental age as a criterion for early admittance to school has been given much attention since James Hobson's (29:312-321) ten-year study of the program in the schools of Brookline, Massachusetts was released. Hobson recorded teachers' marks and standardized test scores of all kindergarten and first grade pupils for a period of ten years. He also made a grade by grade record of two classes that entered kindergarten in 1933 and 1934. One group of 210 who were from four years, three months to four years, nine months old had been admitted early to kindergarten when tests showed a mental age of four years, ten months or more. The other 145 were admitted if they were aged four years, nine months or more on October first. His results showed: (1) in kindergarten, the underaged group had a lower percentage of retentions and "A" marks;

(2) in grades one to eight they had a lower percentage of retentions and a higher percentage of "A" marks; (3) the underaged held an advantage in marks and percentage of failures at all levels for the year 1942-43; (4) underage children who transferred into the district from other schools rated higher than the average age group.

As a result of this study, Hobson recommended: (1) that all pupils four years and four months to four years and nine months of age by October first be admitted to kindergarten if they had a mental age of at least four years, ten months; (2) those pupils five years and four months to five years and nine months of age by October first be admitted to first grade if they had a mental age of five years and ten months; (3) that a medical doctor concur that a pupil was ready to enter after an examination.

At a later date Hobson revised the mental age requirements to five years, two months, for kindergarten and six years, two months, for first grade. Reasons for and the date of changes were not given.

In summarizing the result of his study Hobson wrote:

Experience has shown not only that these selected underage children are superior academically, but that they can not be distinguished physically after the kindergarten year, if then. Not only do they have fewer academic difficulties, as is to be expected, but they are less often referred to the school officials for emotional, social, and other personality adjustments.

H. R. Cone (14:46-47) in 1955, and B. R. McCandless (33:370-75) in 1957, published articles on the early admission practices of the Brookline Schools and concurred with Hobson's studies. In his article,

McCandless stated that:

...moderate early admission for bright children according to carefully selected criteria does offer advantages for the children concerned.

Jack Birch (7:84-87) found that forty-three boys and girls admitted early to the Pittsburgh schools achieved very well. These children were admitted on the basis of psychological, physical, and mental examinations with an intelligence quotient of 130 considered advisable but not mandatory.

Birch stressed the advantage of this type of acceleration, which gives a child six instead of five years in the elementary school as compared to "skipping".

He noted that those children who did not do as well as expected in grade one showed improvement and were doing better in grade two or grade three.

Birch concluded that early admission of mentally advanced children to first grade is a very promising educational procedure in the general category of provisions for acceleration in age-grade placement, if practiced in accordance with proper screening measures.

In a very recent study, Birch, in collaboration with W. J. Tisdall and David Barney (6:7-9) describes an early admission program in the Warren, Pennsylvania schools wherein selected students were admitted to kindergarten. Selective instruments were the Stanford-Binet Scale and the Goodenough Draw-a-Man Test. These children were also checked for behavior patterns and for social and emotional maturity. The first group

of nineteen selectees was admitted in the fall of 1962. All but one of the group were progressing satisfactorily at that writing. The one exception was from a broken and unstable home, admitted with this fact known with the hope that school experience would ameliorate her situation.

Of the eleven admitted early for the 1963-64 school year, all were progressing satisfactorily.

Concerning this program the authors wrote:

The Warren project demonstrates that early admission to school for able children is one of the essential elements in sound policy of admission to, and progression through school. Arbitrary admission ages are as much a barrier to flexibility as arbitrary age-grade promotions and static curriculums.

The writer of this paper felt the foregoing generalization a very broad one to make in light of the limiting factors of number of subjects and time of operation of the program.

F. W. Thomson (50:274-79), interested in early admittance programs, made a study of some of these and stated his views as follows:

Acceleration procedures at the elementary level sometimes involve allowing gifted and moderately-gifted children to enter school at an earlier age than the average children. The strict chronological age requirement of six years for all first graders has nothing to recommend it from a research or rational viewpoint--it does not take into account the wide range of intellectual differences among six-year olds. Early admittance programs in Massachusetts, Pennsylvania, and Nebraska have shown consistently favorable results. Pupils in these programs are successful in achievement and social acceptance at the end of the primary grades.

Another recent report of an early admittance program was that written by William S. Corliss (15:12-13), Director of Elementary Education, Wayzata Public Schools, Wayzata, Minnesota.

In describing the screening of pupils for early admission, Corliss listed these factors: (1) the intelligence of the child; (2) mental age of the child at the entrance cut-off date; (3) social maturity score obtained; (4) brothers and sisters in school presently, or members of the family soon to be in school; (5) general attitude of the parents and the general atmosphere of the home; (6) evaluation of these factors with the actual conditions in the school, community, and program of studies.

Unfortunately Corliss did not give the intelligence quotient and mental age requirements.

In summation, Corliss wrote:

From the experience of the Wayzata Elementary Schools we have been able to establish certain generalizations about these children: they learn more and faster than the average student; they adjust quickly and with no evidence of maladjustment, and they furnish a real incentive to classmates who are almost as bright as they are.

In assessing the findings of the studies of specific early admissions programs, two questions came to the writer's mind: when the authors spoke of pupils making "satisfactory progress" by what standards did they make their judgments, and compared to which portion of the school population? In answer to the first question, no standards were offered. In answer to the second, if any comparisons were made they were with the average child. No comparisons were ever made with children of superior ability who did not request early entrance.

A fortunate happenstance recently made available to the writer an unpublished report distributed to certain members of the Colorado

Education Association (37) that shed some light on the questions posed above. This is actually a series of reports submitted by various professional groups and agencies. From these certain pertinent points were gleaned.

The Denver Classroom Teachers' Association submitted a survey based on the cumulative records of a sampling of pupils from six Denver junior high schools. Pertinent points were: (1) children of very superior ability had the greatest success if they entered school at the age of six years, four months, or six years, three months; (2) the child of very superior ability may gain from entering school at an earlier age if he comes from a good home background; (3) there was no appreciable difference in personal social rating due to the age factor except in one area, the ability to work independently--the older children were scored highest.

The report of the Department of Research and Planning, Jefferson County Public Schools, contributed the following points: (1) children who were eligible for early entrance testing but voluntarily waited a year, achieved according to their intellectual potential at a higher academic level through the first three grades (when adjustments were made for mental ability) than children who were admitted early by scoring 120 or above on an intelligence test; (2) among the early entrants, girls generally received higher school adjustment ratings by teachers than boys; (3) girls admitted early generally achieved at higher academic levels according to their intellectual potential than boys admitted early through

the first three years of school.

The studies reviewed above offer ample evidence that: (1) children of an intelligence quotient of 125 or above possess the mental ability to compete successfully with children of average intelligence even though they may be up to one year younger than the average child; (2) when allowed to enter school early on the basis of adequate screening procedures these children have demonstrated their ability to outperform their average classmates; (3) it should not be assumed that these superior individuals would not have performed at a higher level if their entrance to school had been delayed one year; (4) several programs offering early admission have operated to the satisfaction of parents and educators; (5) that an early admission program designed to follow the foregoing precepts should meet with complete success.

Much material has been written and numerous studies made concerning the varying school success of boys and girls. Although sex was not considered in screening candidates for early entrance in the Highline District, it seemed advisable to incorporate a few brief statements of some authorities--often conflicting--into this study.

Emmett A. Betts (5:29) stated:

Boys comprise from sixty to eighty per cent of the retarded reading population. Although the problem of sex differences is not fully understood, observations and data indicate...on the grand average girls mature earlier than boys in certain functions involving reading.

Further in his book, Betts (p. 137) observed:

In general, sex differences are found in the language develop-



ment of preschool children and in first-grade entrants...In the elementary school, girls excel boys in written composition, spelling, and speed and quality of handwriting.

In 1953, Donald Durrell and Helen A. Murphy (18:559) corroborated Betts' statement when they wrote:

Sex differences in reading achievement generally show findings favoring girls. Reading clinics generally have a preponderance of boys, sometimes showing a ratio as high as ten boys to one girl.

Concerning sex differences in the elementary grades, Olson (40:134) noted that, on the average, girls are better than boys in reading comprehension, vocabulary, and basic language skills. Boys are superior to girls in the areas of science and arithmetic.

Fred T. Tyler (51:685), writing in the Encyclopedia of Educational Research, stated:

The evidence from numerous studies of sex differences in school achievement is remarkably consistent in one respect: girls are assigned higher grades by their teachers than boys are.

Later he wrote:

Girls also tend to show general superiority on standardized achievement tests, although to a lesser extent than on teachers' grades. The direction of sex differences, however, varies with specific tests. For example, girls excel in the area of the language arts, boys in arithmetical reasoning and science. The mean differences between the sexes are often quite small, and the overlap between the distributions for the two sexes is typically extensive.

Frank R. Pauly (41:29-31), who has done extensive research on sex differences in achievement, strongly contended that in the elementary grades the superiority of girls over boys is due almost entirely to the slower maturation of boys. Pauly made studies in 1934-35 that revealed

that 68.5 per cent of those in the slow learner classes in Tulsa, Oklahoma, were boys. By 1951, he found that almost seventy-five per cent were boys. Other studies by Pauly in 1945 and 1949 involved 28,160 and 30,446 pupils respectively. These studies showed that the mean age of girls was below that of boys at every grade level, yet the girls had higher scores on both reading and arithmetic tests.

Pauly felt so vigorously about this difference in maturation that he strongly recommended that educational and mental test norms should be developed for each sex, and that the school entrance age should be from three to six months higher for boys than for girls.

W. W. Clark (10:73-76) disagreed sharply with Pauly and his supporters, however. In rebuttal he did an extensive study beginning with scores obtained from 69,354 boys and girls from 341 school districts in forty-eight states. These were separated into eighteen geographical areas and four community-sized categories. From these, through random sampling techniques, seventy-five boys and seventy-five girls were selected, representing some seventy-five different cities and school systems. Pupils were matched so that age, grade, and mental ability were equated.

Clark made these observations in his summary, stating that (1) sex differences in the area of general intelligence do not exist, hence there is no need to have mental age norms for each sex; (2) differences in achievement in the basic skills of reading and arithmetic do not exist; (3) significant sex differences do exist in the area of language; (4) that

educators must deal with individual differences in students irrespective of the sex of the pupil.

As a result of a study made in 1957, Arthur I. Gates (21:431-34) offers still another perspective in the matter of sex differences. Gates studied the scores made by 6,646 boys and 6,468 girls on tests of reading speed, vocabulary, and comprehension. These pupils represented twelve school districts in ten states, and were selected as being typical of the nation's school population.

Gates found that girls were superior to boys in both speed and vocabulary by about 0.2 reading grade in grades three and four, by about 0.3 in grades five and six and about 0.4 in grades seven and eight. The corresponding figures for comprehension were 0.2, 0.3, and 0.2.

Gates' summation of his findings was:

...the findings have some bearing on several of the many explanations of the facts, strongly confirmed by this study, that on the average girls' reading abilities excel boys'.

The usual explanation for the girls' superiority in reading is that they mature earlier. This explanation seems unlikely, for the superiority of the girls appears to be, on the whole, as great in the upper grades as in the lower...

The present data suggest an environmental rather than a hereditary explanation. It is possible that more girls than boys pursue a kind of life in which more respect, more incentives, and more opportunities for reading appear earlier and persist longer. Contrariwise, more boys than girls may find little or no early need for learning to read. Then boys fall behind the girls at the beginning, and a relatively large number of them remain in the conspicuously poor reading group throughout the grades.

Irving H. Balow (3:303-6), a professor of educational psychology

at the University of California at Los Angeles, in 1962 conducted a study in a middle class suburb of St. Paul, Minnesota, using as his subjects 151 boys, and 151 girls in grade one. Gates Reading Readiness Tests were administered during the second and third weeks of school, Lorge-Thorndike Intelligence Tests in December, and Gates Primary Reading Tests in May.

Balow wrote that: (1) finding significant differences between sexes in achievement and non-significant differences between them in intelligence is consistent with the previous research in this area; (2) finding significant differences between the sexes in readiness test scores adds to the evidence that girls come to school better prepared for formal reading instruction than do boys,...in tests where readiness levels were held constant, the sex differences in achievement disappeared or became too small to be significant. From this Balow concluded that the differences in readiness as measured by the Gates Reading Readiness Tests account for the significantly higher reading achievement of girls in the first grade.

Walter B. Waetjen (52:12-14) offered some additional factors to be considered regarding sex differences when he wrote:

Boys have a higher metabolic rate than girls, and this may cause more overt behavior on the part of boys as well as account for their lesser attention span.

Also girls are more sensitive to human relationships than boys and are anxious to please. This trait is reflected in better quality school work.

Girls verbalize earlier and more than boys. Since thinking is dependent upon the use of language, it seems to follow that better thinking and learning ensues for the person who has

greater language skills.

Maurice Freehill (20:Chap. II), in his book on the gifted, pointed out that in very superior children the supremacy of the girls in verbal and linguistic ability is conspicuous. He also mentioned that these girls outperform boys in skills involving memory and mental imagery.

Superior boys excel in science, numerical reasoning, mechanical aptitudes, and arithmetic computation.

Freehill also noted that even though there is a greater expectancy for superior mental capacity among boys, that able girls are more easily identified than are able boys.

Although the studies reviewed contain some contradictions about the influence of sex differences, some generalities may be justified: (1) that girls tend to perform slightly better than boys of comparable mental ability because of language superiority; (2) that in early entrance examinations we can expect that the larger number of youngsters receiving early admissions will be girls.

## CHAPTER III

### THE STUDY

To be accepted for early entrance into the first grade in the Highline School District, King County, Washington, a child must undergo a thorough screening designed to assure, as nearly as possible, the selection of only those children who would profit from early admission to formal education.

The Stanford-Binet Intelligence Scale, Form L-M (47) and the Metropolitan Readiness Test, Form S (35) are administered to each candidate. The individual must score an intelligence quotient of 125 on the Stanford-Binet and a rating of superior on the Metropolitan to be eligible for further screening. Those youngsters who pass these requirements are then interviewed at length by the same examining psychologists who administered the tests. Both parents are then brought in for lengthy interviews. Much weight is given to these interviews, as they reveal attitudes and interests of both child and parents that may have a strong bearing on the success of the child in a school experience.

At any time during this second stage of the screening process the examining school psychologist may administer other tests which may, in his opinion, help him to make a judgment in accepting or rejecting an applicant. The Bender Visual Motor Gestalt Test (4) and the Columbia Mental Maturity Scale (12) are frequently used. The examiner may see a child or parents as many times as is necessary to make a final decision.

When the screening process is brought to a close, Psychological Services forwards the information concerning each child to the Early Entrance Committee, which is composed of an elementary principal, the director of elementary curriculum, and the assistant superintendent in charge of general administration. It is the duty and the responsibility of this committee to evaluate the recommendations and information from the examining psychologists, and to determine whether or not each candidate will be accepted into the first grade. At the time of acceptance, a physical examination by a doctor is requested but is not mandatory.

Each child accepted for the program is then assigned to a first grade class by the principal of the school in his particular service area.

At the time this follow-up study was begun, sixty-two pupils, forty-four girls and eighteen boys, were enrolled in grades one, two, and three in twenty-five schools in the Highline School District, one parochial school in the Highline area, and in three other school districts in Washington and California.

In order to gather the necessary data, an inventory and rating sheet, accompanied by a letter of explanation, was sent to each teacher having one of these early entrance children in class.

The data for each sex relating to the success or lack of success of the early entrants in this program consist of subjective ratings of each pupil by his classroom teacher in achievement in reading and arithmetic and on personality traits. These teachers also supplied informa-

tion available in the pupils' permanent record folders. All ratings are for the 1963-64 school year only. Teachers were requested to evaluate their students according to their standards of achievement expected for the grade level. Ample time was allowed for the return of the rating sheet so that the teachers concerned could be as objective as possible in their assessments of the children.

A six-point rating scale was used in rating achievement in reading and arithmetic rather than the five-point scale ordinarily used in elementary schools. The middle forty per cent that is commonly designated as "average" or "C" was arbitrarily divided into the "upper middle twenty per cent" and the "lower middle twenty per cent". This division was made so that the teachers were forced to make finer judgments and place each child in the upper or lower fifty per cent of his grade level in achievement. The rating scale and numerical equivalents are:

<u>Rating Scale</u>		<u>Numerical Equivalents</u>
High	(top 10%)	1
Above average	(next 20%)	2
Average	(upper middle 20%)	3
	(lower middle 20%)	4
Below average	(next 20%)	5
Low	(lowest 10%)	6



The rating scale for social, emotional, and physical characteristics was:

<u>Rating Scale</u>	<u>Numerical Equivalents</u>
High	1
Average	2
Low	3

The numerical ratings were used for discussion purposes here as they were more easily interpreted and were also used for computing the means.

No program of special testing was provided as a follow-up for early entrance pupils. However, percentile rankings were requested for the group tests that these children took as a part of the routine testing program of the Highline School District. These tests were: the Metropolitan Readiness Test, Form R (35) administered in early October of each year to all first grades; the Lorge-Thorndike Intelligence Test, Level 2, Form A (32) administered to all second grades in mid-November of each year; the Metropolitan Achievement Test, Elementary Battery, Form A (34) administered in mid-January of each year to all third grades. Out-of-district test scores were accepted only if they were identical and given at the same time of the year. The percentile rankings achieved by the early entrants were given here for purposes of comparison only.

Space was provided on the rating sheet to allow teachers to make comments. This was optional with each teacher and no suggestions were

made as to type of comment.

Table I shows the number and per cent of students, by sex, on each point of the rating scale for achievement in reading and arithmetic. It is interesting to note that although more girls than boys received ratings of one and two for reading achievement, 88.8 per cent of the boys were in the top fifty per cent as compared to 88.6 per cent of the girls.

The opposite is true for arithmetic achievement. More boys than girls were found to have ratings of one and two, but 86.4 per cent of the girls were in the upper fifty per cent, as compared to 83.3 per cent of the boys.

Of the five girls who rated in the lower fifty per cent in reading, four of them also scored in the lower fifty per cent in arithmetic.

Of the six girls who rated in the lower fifty per cent in arithmetic, four were also in the lower fifty per cent in reading. One of these six received a rating of one in reading, and the other received a rating of three in reading.

Using the six-point scale for computation, the reading mean for the girls was 1.88, which placed the early entrance girls in the upper thirty per cent of grade level.

The arithmetic mean was 2.41, which placed the early entrance girls at the upper forty per cent of grade level.

TABLE I

RATINGS BY TEACHERS OF ACHIEVEMENT IN READING AND  
ARITHMETIC FOR FORTY-FOUR GIRLS AND EIGHTEEN  
BOYS IN THE EARLY ENTRANCE PROGRAM

Rating by Teacher		R E A D I N G				A R I T H M E T I C			
		GIRLS		BOYS		GIRLS		BOYS	
Numerical Equivalent	Percentage Rating in Class	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
1	Top 10 per cent	22	50.0	6	33.3	12	27.3	7	38.8
2	Next 20 per cent	13	29.5	5	27.75	14	31.8	6	33.3
3	Upper Middle 20 per cent	4	9.1	5	27.75	12	27.3	2	11.2
4	Lower Middle 20 per cent	4	9.1	1	5.6	4	9.1	1	5.6
5	Next 20 per cent			1	5.6	2	4.5	2	11.2
6	Low 10 per cent	1	2.3						
Totals		44	100	18	100	44	100	18	100.1
Means			1.88		2.22		2.41		2.17

Seven girls accounted for all eleven of the ratings in the lower fifty per cent of grade level.

It should be pointed out that one girl who rated six in reading also received a rating of five in arithmetic. When screened for early admission in August, 1961, this girl scaled 132 on the Stanford-Binet and "superior" on her Metropolitan Readiness Test. By the time school started in September the parents had separated and the girl had become very emotionally involved. This girl failed to perform well as a first or second grader and at the time this study was begun, she was a third grader and still not performing well. Little effective help has been given this girl by any school district personnel because of the attitude of the parent who has custody of her.

Four boys account for all ratings for their sex in reading and arithmetic achievement that fell into the lower fifty per cent of grade level. Only one boy was in the lower fifty per cent in both areas, with a rating of five in reading and arithmetic. Another of these four rated four in reading and two in arithmetic. The other two both scored three in reading, one with a four in arithmetic and the other, a five. The boy rating five in both achievement areas was described as being very tense and having a short attention span. He was in the first grade at the time.

The mean scores for the boys were 2.22 in reading, and 2.17 in arithmetic.

When the means for boys and girls were compared, the girls were

found to score higher in reading and the boys higher in arithmetic. When the means for total achievement were computed, the girls scored 2.14 and the boys 2.19. This is only five per cent of one rating point, a very slight advantage for the girls. These findings are in accord with the consensus expressed by the authors of the literature reviewed in Chapter II.

Tables II and III, pages 39 and 40, show that no girls were considered to be poorly adjusted socially, and only one boy fell into this category. This boy was also rated as being emotionally poorly adjusted by his teacher. He was described as being resentful of authority and very quarrelsome and aggressive toward his classmates. Undoubtedly these social attitudes worked against him but he still received a rating of one in reading and two in arithmetic.

Fifty-seven per cent of the girls rated one in social adjustment compared to thirty-nine per cent of the boys. Forty-three per cent of the girls rated two, as against 55.5 per cent of the boys.

The ratings of emotional traits shown in Tables II and III revealed that two girls and three boys were considered to be poorly adjusted in this characteristic. One girl, discussed earlier in this chapter, had correspondingly low ratings in reading and arithmetic. The other girl rated two in reading and one in arithmetic. This girl was described by her teacher as having a short attention span and poor patterns of general behavior. It was apparent that this girl's failings did not have a strongly negative effect on her school achievement.

TABLE II

A COMPARISON OF TEACHER RATINGS OF GIRLS AND BOYS  
WITH ACHIEVEMENT IN READING

RATINGS OF SOCIAL, EMOTIONAL, AND PHYSICAL  
CHARACTERISTICS

ACHIEVEMENT RATINGS	GIRLS									BOYS									COMBINED GROUPS								
	Social			Emotional			Physical			Social			Emotional			Physical			Soc.			Emot.			Phys.		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	17	5	0	16	6	0	14	8	0	4	1	1	5	0	1	4	2	0	21	6	1	21	6	1	18	10	0
	5	7	0	6	6	1	3	10	0	1	4	0	1	3	1	1	4	0	6	11	0	7	9	2	4	14	0
	2	3	0	0	4	0	3	1	0	2	3	0	2	3	0	3	2	0	4	6	0	2	7	0	6	3	0
	1	3	0	0	4	0	0	4	0	0	1	0	0	1	0	0	1	0	1	3	0	0	5	0	0	5	0
	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	1	0	1	0
	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0
Totals	25	19	0	22	20	2	20	24	0	7	10	1	8	7	3	8	10	0	32	28	1	30	27	5	28	34	0

NOTE: This Table should be read as follows: Seventeen girls who scored one (1) in Reading also scored one (1) in Social Traits.

TABLE III

A COMPARISON OF TEACHER RATINGS OF GIRLS AND BOYS  
WITH ACHIEVEMENT IN ARITHMETIC

		RATINGS OF SOCIAL, EMOTIONAL, AND PHYSICAL CHARACTERISTICS																										
		GIRLS									BOYS									COMBINED GROUPS								
		Social			Emotional			Physical			Social			Emotional			Physical			Soc.			Emot.			Phys.		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
ACHIEVEMENT RATINGS	1	9	3	0	9	2	1	8	4	0	4	3	0	5	2	0	5	2	0	13	6	0	14	4	1	13	6	0
	2	10	4	0	9	5	0	8	6	0	1	4	1	1	3	2	2	4	0	11	8	1	10	8	2	10	10	0
	3	5	7	0	4	8	0	3	9	0	1	1	0	1	1	0	0	2	0	6	8	0	5	9	0	3	11	0
	4	1	3	0	0	4	0	0	4	0	0	1	0	0	1	0	1	0	0	1	4	0	0	5	0	1	4	0
	5	0	2	0	0	1	1	1	1	0	1	1	0	1	0	1	0	2	0	1	3	0	1	1	2	1	3	0
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	25	19	0	22	20	2	20	24	0	7	10	1	8	7	3	8	10	0	32	29	1	30	27	5	28	34	0	

NOTE: This Table should be read as follows: Nine girls who scored one (1) in Arithmetic also scored one (1) in Social Traits.

Of the three boys having a low rating in emotional characteristics, one was described earlier in the discussion of social traits.

The remaining two boys, both in first grade, were described as showing improvement. One was described as being very tense and as having a short attention span. His academic rating was five in both reading and arithmetic. The other boy was described by his teacher as being a "loner", choosing to stay to himself in the classroom and on the playground. He was also described as having some hearing loss. During his preschool years this loss was quite acute, but had been partially restored by surgery. The writer of this paper has had a hard-of-hearing class housed in his building and found that young people who suffered from a hearing loss in their early years entered into group activities only after considerable encouragement. Perhaps this point was overlooked by the teacher of the boy discussed here. This boy earned ratings of two in both reading and arithmetic in spite of his handicap. At the time of school entry this boy's hearing loss was not acute enough to qualify him for the hard-of-hearing class.

Fifty per cent of the girls were rated one in emotional characteristics, 45.5 per cent were rated two, and four and one-half per cent were rated three or lower.

Two girls and three boys accounted for all ratings of three or lower in ratings on personal characteristics. This is 8.06 per cent of the total group of sixty-two pupils. Contrasted to this, eleven girls and four boys rated two or higher on all three of the personal character-



istics and almost ninety-two per cent of the total group was rated as average or above average on total characteristics.

Only the one case of social and emotional maladjustment discussed earlier in this chapter was considered serious enough to be referred by a classroom teacher to Psychological Services.

Tables II and III reveal that all girls and boys in this study were considered to be physically able to compete with their classmates. About forty-five per cent of both girls and boys rated one, and about fifty-five per cent rated two in physical characteristics. The fact that no pupil rated three and the relatively high percentage of boys and girls who rated one seemed to confirm the claims of several authors who contended that superior children do mature more quickly physically than children of a lesser mentality.

The generally high rating received by the large majority of both girls and boys is indicative of a high degree of mental ability and social, emotional, and physical maturity for the total group of sixty-two youngsters.

The summary of standardized tests results that follow were placed here for purposes of comparison only. They did not have any bearing on the ratings for achievement or personal traits in the foregoing discussion.

Scores on the Metropolitan Readiness Tests were available for forty-three girls and fourteen boys. The scores were as follows:

<u>Rating</u>	<u>No. of Girls</u>	<u>No. of Boys</u>
Superior	17	4
High Normal	24	8
Average	2	1
Low Normal	0	1
Poor Risk	0	0

All but one of the total groups having scores for this test scored at or above the level which is indicative of success in the first grade. The one boy who scored "low normal" was rated by his teacher at five in reading and arithmetic.

The Lorge-Thorndike Intelligence Test is administered to all second grades in the Highline School District in early November of each year. Scores on this test were available for twenty-eight out of a possible thirty girls, and for nine out of a possible eleven boys. Scores were based on district norms for the Highline School District.

As shown in Table IV, page 44, scores for girls ranged from the ninety-ninth percentile (four girls) down to the fourth percentile. A total of three girls failed to score above the fiftieth percentile. However, 67.9 per cent of the girls scored in the upper quartile.

The range for the boys was from the ninety-seventh percentile to the fifty-fourth percentile. All boys scored higher than the norm for the district, and 67.7 per cent scored in the upper quartile.

The Metropolitan Achievement Test is administered to all third

TABLE IV

PERCENTILE RANKINGS OF TWENTY-EIGHT GIRLS  
AND NINE BOYS ON THE LORGE-THORNDIKE  
INTELLIGENCE TEST GIVEN IN  
GRADE TWO

Percentile Rank	No. of Girls	No. of Boys	Percentile Rank	No. of Girls	No. of Boys
95-99	8	1	45-49	1	0
90-94	1	2	40-44	0	0
85-89	2	1	35-39	1	0
80-84	6	0	30-34	0	0
75-79	2	2	25-29	0	0
70-74	2	0	20-24	0	0
65-69	2	0	15-19	0	0
60-64	1	0	10-14	0	0
55-59	1	2	5-9	0	0
50-54	0	1	0-4	1	0

grades in the Highline School District in mid-January of each year. Norms used here were district norms which exceed national norms for this test in all areas except arithmetic computation. At the time data were gathered for this study, fifteen girls and five boys among the early entrants were in the third grade. Percentile rankings for this test were available for all but one boy who had moved to California.

Table V, page 46, showed that ranges in reading achievement for the girls was from the ninety-eighth percentile to the ninth percentile in word knowledge, and from the ninety-ninth percentile to the twenty-seventh percentile in comprehension. Eleven girls, or 73.3 per cent, were in the upper quartile in word knowledge and 67.7 per cent were in the upper quartile in comprehension.

Ranges for the boys were from the ninety-eighth percentile to the sixty-eighth percentile in word knowledge and from the ninety-ninth to the sixty-fourth percentiles in comprehension. In each category three boys, or seventy-five per cent were in the upper quartile, and none was lower than the sixty-fourth percentile.

Arithmetic ranges for the girls were from the ninety-eighth percentile to the thirty-first percentile in computation and from the ninety-fourth to the sixty-fourth percentiles in problem solving. Fifty per cent of the boys were in the upper quartile in computation and twenty-five per cent in the upper quartile in problem solving.

All scores below the fiftieth percentile on this test were made by girls.



The three tests discussed show wide limits of range, but the multitude of factors that may influence the performance of a child on any given day are too well known to warrant discussion here.

In summation it can be said that: (1) For the large majority of early entrants, the program had been successful in selecting those children who would benefit from the experience; (2) Those children who have superior mental ability are also superior in social, emotional, and physical characteristics; (3) Sex differences are not significant within this group; (4) For a few youngsters their experiences have been less than successful. Data in this study were not sufficient to indicate the cause for the lack of success except in the case of one girl. For this girl, her performance would probably have been the same in a regular program. Further investigation of the cases of the other pupils is needed to determine what factors were operating to their disadvantage.

Analysis of the data. An analysis of the data was accomplished by applying the Chi Square Test. The data was analyzed for the girls, the boys, and the combined group.

The levels of significance appear in Table VI, page 48. The level of significance for the girls and for the combined group was at the .01 level in each of the five categories. This means that the possibility that these scores for these characteristics occurred because of pure chance is less than one in a hundred. The same statement can be made for the arithmetic achievement level for the boys. The scores for social

characteristics, emotional characteristics, physical characteristics, and reading achievement resulted in the significance level of .10, .02, .05, and .05 respectfully.

Chi Square Results and Levels of Significance for Reported Scores

TABLE VI

	Social Character- istics	Emotional Character- istics	Physical Character- istics	Reading Achieve- ment	Arithmetic Achieve- ment
GIRLS	* 29.217	19.542	18.542	110.276	29.587
	** .01	.01	.01	.01	.01
BOYS	* 14.734	8.208	7.333	11.672	21.721
	** .10	.02	.05	.05	.01
ENTIRE GROUP	* 31.255	21.065	25.870	95.300	47.407
	** .01	.01	.01	.01	.01

\* Chi Square Scores

\*\* Levels of Confidence

## CHAPTER IV

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### I. SUMMARY

This study was undertaken to determine whether the early entrance program of the Highline School District, King County, Washington was effective in selecting only those children who would benefit from the program.

In order that the terms "early entrance" and "early entrant" could be clearly understood they were defined as follows: the early entrance program is a program established by the Board of Directors to provide for the admission of exceptionally bright and mature children whose birthdates fall between September 15 and November 15 under certain regulations prescribed by the Board of Directors; an early entrant is a child whose sixth birthdate fell between September 15 and November 15 who enrolled in a first grade in the Highline School District after having been declared eligible under regulations specified by the Board of Directors.

A review of the literature was made in order to determine what trends had been established, what opinions had been formed, and what studies had been made concerning school admission practices. It was that since the 1800's there had been a trend to raise the entrance age in the public schools in America. This change had not been constant nor



uniform and was found to be influenced by the often uninformed public. Most educators felt that for the total school population, a chronological age of six and a mental age of at least six years, four months, were necessary for success in a formal first grade school program. Some educators advocated a school program which would meet the needs of students, whatever these might be, since individual differences exist no matter what entrance age was used.

Research relating chronological age to school success indicated that for the entire school population younger pupils generally had more academic, emotional, and social problems in school than older children of like ability. Other studies showed that children admitted to school early on the basis of above-the-average mental maturity were generally successful in school. Additional studies in this vein showed that children of superior mental ability were also superior socially, emotionally, and physically to their counterparts of a lesser mental ability.

Early research indicated that girls matured more rapidly than boys and could be expected to excel them in school situations. More recent research concerning sex differences discounted this conception. Many studies have been conducted showing that when girls and boys of the same mental ability are compared, sex differences became insignificant. The areas of agreement concerning sex differences in these recent studies are that girls do excel in language and the mechanics of English, that boys excel in mathematical concepts, science, and mechanical ability, and that girls approach physical maturity at a more rapid rate than boys.

The major emphasis in the review of related literature was placed upon studies concerning children of superior mental capability and programs that were designed to accommodate such children even though they did not meet the entrance age requirements.

This research showed that any child accepted for early entrance into the first grade in the Highline School District would be in the top five to seven per cent of the total school population, would have a mental age of at least seven years, three months, and could be expected to be correspondingly mature socially, emotionally, and physically.

A considerable number of studies had been made of programs that provided for early school entrance for more able youngsters. The consensus of people who had made studies of the programs was that they are operating successfully and that such programs are an excellent means of meeting the individual needs of superior children.

In order to determine the total effectiveness of the early entrance program as operated by the Highline School District, the writer gathered data for sixty-two children in grades one, two, and three in April of 1963.

## II. FINDINGS

The reader must be cautioned to consider that all the findings in this study are only intermediate measures. The small number of children involved in the program and the relatively few years of experience at the time of this study preclude making any unequivocal conclusions.

The information collected and tabulated in the investigation did

provide data on which to base the tentative conclusions.

1. Based upon the performance of the early entrance students as they compare with their classmates, the requirements set forth by the Board of Directors appear to be stringent enough to select only those who should succeed in the program.
2. The process of screening is functioning apparently with good success but appears to be operating somewhat more favorably for the girls than it is for the boys.
3. For those youngsters who have enjoyed only limited success we cannot make final judgments. It cannot be assumed that achievement does not change, and most of the children in this study were in the first or second grades.
4. Sex differences operate to a varying degree in this selected school population. It is probable that the consistent superiority of girls in the area of linguistics operates in the screening process. This may account for the fact that among the successful candidates, girls outnumber boys in a ratio of almost two and one-half to one.

### III. RECOMMENDATIONS

In light of the findings, the following recommendations have been made:

1. That the present policy of the Board of Directors permitting early school admission be continued under the present

- regulations. These requirements should not be relaxed in any way, but continued evaluation of the program is essential.
2. The screening process should be reviewed to determine if other techniques or test instruments could be used to advantage in determining more completely the attitudes and personal characteristics of candidates.
  3. Because nearly two and one-half times as many girls as boys are admitted by the early entrant standards, and because the girls are consistently better performers at these early ages it is recommended that additional studies be initiated at once. Different early admission requirements may be necessary in order to make it possible for the boys to enjoy comparable success.
  4. The concurrence of a pediatrician should be mandatory and not optional regarding the physical readiness of successful candidates.
  5. A study should be undertaken to determine whether or not children who had the mental and personal qualities of the successful early entrance candidates but who voluntarily started a year later, are performing at a higher level than the early entrants.
  6. The children in this study should be followed through the entire elementary school program so that more complete data is available on the effectiveness and worth of the program.
  7. Some provision should be made for the withdrawal of early entrants when indications point to a lack of school achievement.

This must be thoroughly understood by all parents of early entrants.

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