A STUDY OF THE RELATIONSHIP OF EARLY

SCHOOL ENTRANCE AND ACHIEVEMENT IN

THE HAMPTON CITY PUBLIC SCHOOLS

by

Betty H. Peters

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Approved:

_____
Dr. Robert R. Richards

_____   _____
Dr. Jimmie Fortune   Dr. Ken Underwood

_____   _____
Dr. Roger Johnson   Dr. Ronald McKeen

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(ABSTRACT)

The purpose of this study was to investigate the
problem of early school entry as it affects the
criteria of achievement, self-concept, and social
maturity. The research design was a comparative
associational design. The statistical procedure used
was the two-way analysis of variance. The level of
statistical significance was noted at .05.

The subjects in this study were sixty-two
kindergarten children in six schools in the school
system. The six schools were chosen as
representative of the racial make-up of the school
population. There was stratified random sampling to
include children with early and not early birthdates.
Race, sex and birthdates were the independent
variables.

Several instruments were used to measure
achievement, social maturity, and self-concept. The
Wide Range Achievement Test R-1, Level I, The

Standards of Learning Objectives, and the

Metropolitan Reading Test, Level II, were used to

measure achievement. The Burks' Behavior Rating

Scales, Preschool and Kindergarten edition, were used

to measure social maturity, and the Self-Concept and

Motivation Inventory Pre-School/Kindergarten Form

(SCAMIN) assessed self-concept.

The following conclusions were formulated based

upon critical analysis of the data.

There was a statistically significant difference

(p<.05) in achievement and age, race and sex in a few

of the variables studied such as the following:

1.   the WRAT math across age and race. The not

early groups scored higher than the early groups and

the white groups scored higher than the black group.

2.   the Metropolitan Readiness test and race.

The white children scored higher than the black

children and the not early children scored higher

than the early children.

3.   the SOL reading objectives, age and sex.

The not early group scored higher than the early

group. The white children scored higher than the

black children. The girls in the early group scored

higher than the boys, and the boys in the not early

group scored higher than the girls.

    4.   the SOL math objectives across age and race. The early groups scored lower than the not early group and the white children scored higher than the black children.

    There was also a statistically significant difference ($p < .05$) in poor ego strength and race. The white children had higher ego strength than the black children.

DEDICATION

This study is dedicated to my husband,   ,
my four children,   ,   ,   and   , and
my sister,   .   Their love,
encouragement, and support have made possible the
completion of this study.

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CHAPTER ONE

Introduction

In recent years school systems have been concerned over the general progress of kindergarten children who enter school at an early age. Several authors and researchers were opposed to instructing children in certain areas before they were developmentally ready.

DiPasquale, Moule, Flewelling (1980), Toepfer (1981), and Maddux, Stacy and Scott (1981) concluded that school entry age was a significant factor. They agreed that early-entry children were significantly more likely than were older children to be referred for special services regarding academic problems in the primary grades (McGlauchen, 1984).

David Elkind (1981) is also concerned that the pressure for early academic achievement was causing children to be hurried through childhood. He further stated that children of the eighties were growing up too fast. "Some parents are so stressed that they become egocentric and either forget or find it impossible to use the knowledge we have about the nature and needs of children."

Beattie (1970) wrote that in 1968 the National

Education Association conducted a survey which involved

four hundred seventy-nine school districts. The survey

was related to early entrance age to school. The most

frequently reported age was the requirement to be five

by December 1. The second most frequent date was

January 1. The results indicated that 57.4 were allowed

to enter kindergarten at four years, eight or nine

months.

Beattie (1970) also focused on Elizabeth Bigelow

who studied a group of children in Summit, New Jersey,

in 1934. The study was based on two groups of children

entering first grade. One was a group of eighty-eight

children who entered grade one before they were six

years of age, and the other group of thirty-nine

children entered when they were between six years and

six years four months. Bigelow found that those

children of less than six years old with an intelligence

quotient of 120 or more would probably succeed, but

personality factors should also be considered. She

concluded that if a child was older and was of average

intelligence, he had a good chance of success.

H. M. Partington, listed in Beattie (1970),

conducted a study on two hundred eighty-four children to determine a relationship between the chronological ages of pupils on entering the first grade and later scholastic success. He found that younger children ages 5.0 to 5.5 years of age, were capable of and adept in achieving excellent results. Many of the brighter children, however, could do better work than their classmates could. A low chronological age was a handicap to many children in school, and with greater maturity they might achieve better results in the same grade with less strain.

Devault's findings were similar to Bigelow's. He concluded that pupils with higher mental age had higher achievement and adjustment scores. Pupils who were two months underage had lower achievement test scores than the normal-age pupils, and those who were one day up to two months underage had achievement scores comparable to those of the normal-age pupils (Beattie, 1970).

The Gesell Institute of Human Development (1982), advocated giving children a gift of time so that a child enters kindergarten only when he or she has reached a developmental age of five years in addition to being five years of age chronologically. The developmental

point of view maintained that behavior was a function
of structure and that growth was orderly, structured
and predictable. Every child has a rate and pattern
of growth unique to himself. In this way each child
was different from every other child. Children
should be viewed as individuals, realizing that the
physical, social, emotional and intellectual aspects
of development depend on and support each other.
These aspects should not be pushed one ahead of the
other. Research has shown that readiness for
kindergarten was not indicated until a developmental
age of 5 to 5½ has been reached.

James Hymes stated in Childhood Education
(1983), "that 4 and 5 year olds are the springtime of
life, but not spring training for a tough, hard
season to come . . . our purpose should be to help 4s
and 5s flourish, not to reform them." He further
described experimenting, exploring, discovering,
trying out, restructuring, speaking and listening as
descriptors of good kindergarten programs. Such
programs were built on the developmental process of
4- and 5 year olds; they were based on a state of

being--not a state of becoming (Ballenger, 1983).

In 1985, the Virginia Assembly enacted legislation concerning kindergarten programs suitable for certain children. In Chapter 13 Section 22. 1-199, Article I, the law states the following.

A. The kindergarten program in each school division shall include a program suitable for children who will reach their fifth birthday on or before September 30 of the school year. The parent or guardian of a child who will reach his fifth birthday after September 30 and on or before December 31 of the school year may petition the division superintendent or his designee for enrollment of such child in kindergarten. Such child shall be given the test or tests designated by the Board of Education to determine his readiness for the kindergarten program. Upon receiving the results of such tests, the division superintendent or his designee shall deny or permit enrollment of such child in kindergarten. The school board's plan for such program shall be acceptable to the Board of Education and shall include the following:

1. A statement of purpose and objectives of the

kindergarten program that reflects consideration of the different readiness and maturity levels of children in the program;

2. A description of the organization, scheduling and staffing of the program that reflects a responsiveness to the needs of the children of the age span to be served in the program;

3. Evidence that the program plan was developed by a committee that included early childhood specialists, parents, teachers and administrators;

4. Scheduling and an agenda of in-service activities for kindergarten teachers to insure adequate preparation for the program;

5. A plan for the interface of the kindergarten program with the primary program to allow for continuous progress;

6. A description of the counseling program required by subsection B of this section;

7. A procedure for informing the parents or guardians of children who will reach their fifth birthday between September 30 and December 31 of the option to test for readiness to enter kindergarten.

B. A parent or guardian petitioning for any

child to be enrolled who will reach the age of five after September 30 and on or before December 31 of the school year in the public schools of the school division where the child resides shall be counseled by the school division concerning the advisability of such child attending school. Such child shall be tested to determine if he is ready for kindergarten. Upon petition of the parent or guardian after such counseling, the child shall be admitted to the public schools, if the division superintendent permits enrollment.

C. The Superintendent of Public Instruction shall disseminate to the school divisions information concerning the advisability of school attendance by children who will reach their fifth birthday after September 30 and on or before December 31 of the school year and concerning ages when children are required or eligible to attend school. Each school division shall disseminate such information to parents of such children upon or prior to enrollment of such children in the public schools of the division. (Code 1950, 22-218.1:1; 1978, c. 518; 1980, cc. 559, 570; 1985, c. 407).

Editor's note. -- Acts 1985, c. 407, cl. 2 provides: "That school boards shall phase in the rollback of the mandatory eligibility age for kindergarten over a three-year period by rolling the date by which children shall have reached their fifth birthday back one month each year as follows: November 30, 1986, October 31, 1987 and September 30, 1988."

Purpose of the Study

The primary purpose of this study was to examine the effectiveness of kindergarten in relationship to achievement and entrance age. A secondary purpose was to examine the early entrance age and achievement as they were related to race and sex. This study was descriptive in nature. Isaac and Michael (1977) indicated that the population census studies and test score analyses were examples of descriptive research.

Statement of the Problem

This was a study to investigate the problem of early school entry controlling for such factors as achievement, self concept and social maturity.

Statement of Need

Very little research has been done on this topic in recent years. In light of the new legislation in Virginia, the need existed to conduct a study in the Hampton School System. School Board members, school administrators, lay people, teachers and parents can use additional information in order to determine how the plan for early entry has affected students. The results of this study will be helpful in providing information to be used in the Hampton Public School System, will assist educators in advising parents, and will be helpful in implementing an appropriate curriculum to meet the needs of the young child.

Identifying a significant relationship between school entry age and academic achievement had implications for the programming of individual children and sequencing of the curriculum. There was a need to examine expectations of children's learning rates as reflected in the Standards of Learning Objectives, the scope and sequence of the curriculum, and the developmental level of the entering students.

Limitations of the Study

This study was limited to the Hampton City Public Schools.

Definition of Terms

For purposes of this study the following definitions will be used:

Developmental age - The period at which a child as a total organism is behaving -- a functioning age (Carll and Richards, 1982). Behavior developmental age is a term meaning that a child can sustain a function with ease.

Early school entrance - In this study, early school entrants refers to those children whose birthdates fall between September 30 and December 31.

Not early school entrance - In this study, the not early school entrance refers to those children whose birthdates fall between January and June.

Standards of Learning - The Standards of Learning (SOL) are grade level objectives each child is expected to know and master. These were selected by the State Department of Education with the

assitance of teachers and administrators throughout the State, and for this study included reading, math, and language arts.

Overplacement - Being "in over one's head"-- Having a child in a school situation which is causing strain to the total child (Gesell, 1982).

School readiness - The ability to cope with the school environment physically, socially, and emotionally, as well as academically, without undue stress, and to sustain in that environment (Carll and Richard, 1982).

School success - Achievement without undue stress. Learning with enough spirit and energy left over to develop into a well-integrated person (Gesell, 1982).

Growth - Development. Progress in emotional stability, intellectual maturity, and social competence, as well as physical growth. Perhaps most importantly, advancement of the integration process --advancement in differentiation - an increase in complexity of function (Carll and Richard, 1982).

Pre-Kindergarten - A learning environment for children who will be five by a school district's

entrance date but who are not developmentally ready
for kindergarten (Gesell, 1982).

Hypotheses

This study will test the following hypotheses in
the null:

1. There is no significant difference between
academic achievement, self-concept, or social
maturity of kindergarten children based upon age.

2. There is no significant difference between
academic achievement, self-concept, or social
maturity of kindergarten children based on sex.

3. There is no significant difference between
academic achievement, self-concept, social maturity
of kindergarten children based on race.

Organization of the Study

Chapter One included the introduction, the
purpose of the study, statement of the problem,
statement of need, the limitations of the study,
definition of terms and organization of the study.
Chapter Two included a review of the related

literature. Chapter Three described the methodology
and strategy for collecting data and a plan for
analysis. Chapter Four included the analysis of the
data and Chapter Five contained the summary,
conclusions, and implications for educational
practice and research.

CHAPTER TWO

Review of Literature

In the "Republic," Plato states, "Don't you know
that in every task the most important thing is the
beginning, and especially when you have to deal with
anything young and tender?" (McGlauchlen, 1984). The
research concerning early entrance of kindergarten
children and achievement as it relates to age, race,
sex, self-concept and social maturity provided the
framework for this study.

Historical Development

For many years there have been several different
programs for preschool children. It was not until
after World War II that greater emphasis was placed
on quality programs for the young child. The
launching of the Sputnik, the 1954 Supreme Court
decision advocating desegregation of schools, and the
nationwide concern for the improvement of education
have been instrumental in directing attention toward
quality education. All of these events sparked an
interest in improving the education of the young

child. Psychologists and researchers began to search

for ways in which the young child learns.

In this country, it is believed that six-

year-olds should be enrolled in first grade and

five-year-olds in kindergarten. It should be noted

that school did not always begin at these ages for

children. As reported by Kaestle and Vinovskis

(1978), the Massachusetts general court enacted a law

in 1647 urging towns to establish schools for young

children. The Puritans wanted all people to learn to

read the Bible as soon as possible. Some were taught

to read the Bible as early as ages three and four

while the five-year-olds were taught Latin (Spodek,

1984).

Most towns were offering schooling to the young

by the turn of the 19th century. The three-year-olds

and four-year-olds along with some eighteen month

olds were enrolled in school. It was during this

time that the infant school was introduced in the

United States and became quite popular (Spodek,

1984).

The infant schools faded over the next two

decades because of increasing emphasis on the role

of the mother at home, the balanced development of
the young child, and the politics of the public
school which encourage excluding the young children
from school. A more humane approach to kindergarten
was implemented during the latter half of the
nineteenth century (Spodek, 1984).

Cryan and Surbeck (1979), have indicated that
kindergartens, nursery schools, and day-care centers
have been in the United States for more that 100
years. The first public school kindergarten was
established in 1873 in St. Louis, Missouri, however,
the first private kindergarten was opened in 1855.
The first nursery school was established in 1861 and
was a parent cooperative nursery. The nursery school
as we know it today was established in 1922 and, as
usual for that period, was connected with a
university home economics department. The day-care
centers were first organized in 1822 primarily to
care for children who were orphans, abandoned, or
whose parents were unable to care for them.

Frederich Froebel, the founder of German
kindergartens, had the most influence on American

programs for the young child. Elizabeth Peabody
visited a Froebelian kindergarten in Germany and
returned to open one in Boston, Massachusetts in
1860. Her dedication and support to kindergarten
contributed to her being named the first American
advocate for early childhood education (Cryan and
Surbeck, 1979).

Susan Blow, Director of the Public Kindergarten
in St. Louis, became the second American to embrace
the Froebelian philosophy. It was during this time
that John Dewey's philosophy was prevalent and
kindergartens began to employ his theory that there
should be more child-centered activities and less
teacher-directed activities. This meant that the
classroom would change from a more structured
environment like Froebel to the more child-centered
like Dewey (Cryan and Surbeck, 1979).

Even though progress had been made, the goal to
improve education for the young child had top
priorities in many districts. The role of the home
and school working together had been rediscovered.
It was the desire of many to use programs that would
contribute toward lifelong learning for all.

Head Start

With the concern and dedication of educators and legislators toward helping all children learn and have successful school experiences, the Head Start Program was launched in the summer of 1965. Sponsored under the Office of Economic Opportunity, this was to have been a great milestone in early childhood education. One of the main goals was to provide schooling for three and four year olds whose socio-economic status predicted marginal success in school.

Abbott, Galina, Granger and Klein (1976) noted that over 550,000 children participated in the program in the summer of 1965. The next year, 1966, it was expanded to include a full year of instruction and activities.

According to Weikart (1974-75), nothing had been done to prepare the public for failed expectations of the Head Start Program. A study was done to investigate the progress of former Head Start children who were in the public schools. Results of the collected data were disappointing. One of the reasons that the gains of the program were lost was

due to the larger size classrooms of the public schools. According to Abbott et al., (1976), the gains of the program were lost when the children entered public schools. Abbott et al. (1976) further quoted Lois Datta (1969) who stroke at the heart of the issue in stating the following:

> It may be naive to expect a child to continue to progress rapidly in a classroom where the teacher may be responsible for 30 or more children, maybe primarily concerned with maintaining order and perhaps convinced that most of her students have little potential.

Cryan and Surbeck (1979) indicated that the local communities were encouraged to have goals specifically tailored to meet their needs, but the office of economic opportunity provided certain broad goals. They were the following:

1. Improving the child's health.

2. Helping the child's emotional and social development by encouraging confidence, self-expression, self-discipline and curiosity.

3. Improving and expanding the child's mental processes, with the aim of expanding his ability to

think, reason, and speak clearly.

4. Helping the child to get wider and more varied experiences to broaden his horizons, increase his ease of conversation, and improve his understanding of the world in which he lives.

5. Giving the child frequent chances to succeed; such chances may thus erase patterns of frustration and failure and especially the fear of failure.

6. Developing for the child a climate of confidence that will make him want to learn.

7. Increasing the child's ability to get along with others in his family and, at the same, helping the family to understand him and his problems--thus strengthening family ties.

8. Developing in the child and his family a responsible attitude toward society and fostering feelings of belonging to a community.

9. Planning activities that allow groups from every social, ethnic, and economic level in a community to join together with the poor in solving problems.

10. Offering a chance for the child to meet and

see teachers, police officers, health and welfare

officers--all figures of authority in situations that

will bring respect rather than fear.

11. Giving the child a chance to meet with

older children, teenagers, and adults who will serve

as models in manners, behavior, speech, etc.

12. Helping both the child and his family to

attain greater confidence, self-respect, and dignity.

Cryan and Surbeck (1979) indicated that these

goals were similar to any others established for a

preschool or a kindergarten program. The guidelines

stipulated that the ratio should be one to five with

a teacher, a paid aide and a volunteer parent for a

total of fifteen children. The program helped the

community by employing parents and helping them to

understand the goals for their children.

In the summer of 1966, Cline and Dickey (1968)

conducted a follow-up study. Washington, D.C. was

chosen because it was representative of urban centers

providing Head Start to the children of the ghetto

and the authors would be in a position to make

further statements relating to these kinds of

programs. The goal of the investigation was to

effect a compromise between the macroscopic studies and a large unidimensional program, even though the latter was not characteristic of a Head Start Program.

It was the intention of the study to identify the sample in Head Start and follow them through kindergarten. There was a great deal of transiency in this population, therefore, conclusions could only be drawn about Head Start children who remain in the neighborhood at least long enough to attend kindergarten in the same building in which they attended the program.

When deciding what the impact of the Head Start program had on kindergarten, two groups were formed. One was the experimental group and the other a control group. One hundred twelve students were selected for the experimental group including an equal number of boys and girls. In the control group, a match was selected for each Head Start child which was a non-Head Start child enrolled in the same kindergarten class and of the same age as selected for the control group. Neither group represented the poverty population, however, the researchers felt comfortable in assuming comparability between these

groups.

Several instruments were utilized to assess the children. A behavior inventory was used to assess the social-emotional status of pre-school children, the Metropolitan Readiness test, the Binet IQ test, and the Peabody Picture Vocabulary test (PPVT-R).

If there were any differences as the result of Head Start, they disappeared during the first month of kindergarten. At the beginning of kindergarten there were no differences between boys and girls on the Binet IQ test. Both groups failed to show gains over the kindergarten year (1.9 and .7 IQ improvement respectively) (Cline and Dickey, 1986).

On the Peabody Picture Vocabulary test, the boys and girls, Head Start children and control children, high Binet children and low Binet children all gained about 6-7 points throughout the kindergarten year. There was no significant difference between any groups except in sex effect, the high/low Binet effect and an interaction between the two. Girls were more persistent than boys in problem solving, high Binet children were more persistent than low Binet children, high Binet boys were more persistent

than low Binet boys, but there was no difference in

the persistence of high and low Binet girls.

The researchers concluded that no discernible

effect of Head Start appeared. The findings, in a

limited sense, did represent the probable effect of

Head Start on the academic readiness and

social-emotional development of economically

impoverished children of the District of Columbia.

It was possible that the failure of teachers and

their lack of awareness of the range and variability

of the skills present in their classes, along with

the skill of recognizing deficiencies likely to be

present in individual children, could have obscured

Head Start effects.

Finally, Cline and Dickey warned researchers in

this field that scores on reliable, much used

instruments such as the Peabody have both more

variability and less validity among children of the

urban poor than upon the children upon whom they were

standardized.

Abbott et al., stated that project Follow

Through was initiated as a program to provide for the

educational, emotional, physical, medical, dental and

nutritional needs of elementary children who were
previously enrolled in Head Start. Follow Through
employed several different models, theories and
philosophies and strategies. The authors recommended
that readers and implementors take an eclectic
approach when working with children or the community.
Use one that best fitted the needs of those being
served.

High Scope

Another plan for helping the low-income family
was through the High Scope Educational Research
Foundation. This Research Foundation was an
independent, non-profit center for research,
development and training in education and human
development with primary emphasis on preschool child
development programs. It was begun in 1970 by David
Weikart and had a staff of 40 and an annual budget of
about 2 million dollars from public and private
sources.

Schweinhart (1985) pinpointed poverty as a
predictor of failure in school. One in every four of
the children was living in poverty. If substantial

help were not provided to these children, they were
likely to become adults who were unable to make
productive contributions to society.

The author further stated that evidence had
shown that poor children tend to fail in school and
drop out of high school. He recommended that one way
to alter this cycle of events was to provide young
children living in poverty with the skills, habits,
and attitudes they needed to succeed in school.

Schweinhart acknowledged research studies which
indicated that preschool child development programs
could help prevent scholastic failure. They also
helped poor children get off to a better start in
school by improving their intellectual performance as
school begins. The need to place children in special
education programs or to repeat a grade level was
lessened because they were able to do the work
expected of them. In longer terms, according to the
evidenced secured by the author, these programs help
reduce some of society's most pressing problems--
school failure, juvenile delinquency, teenage
pregnancy, unemployment and the need for welfare
assistance.

Dependency and poverty were very prevalent in childhood and in the later years of life. Twenty-five percent of the children under six lived in poverty as compared to 14 percent of adults 65 and over. Poverty was very rampant among minorities including one-half of the Black children and two of every five Hispanic children (Schweinhart, 1985).

In 1982 the National Assessment of Educational Progress assessed the mathematics performance of students at ages 9, 13, and 17 and compared the scores of the urban advantaged to the urban disadvantaged. The urban advantaged scored on the average of 22 points higher on the tests with 69 percent of items correct as compared to 47 percent for the urban disadvantaged (Schweinhart, 1985).

The author also noted that in a study conducted by the National Center for Education Statistics, the results indicated that the high school drop out rates in 1982 for the lowest socioeconomic quartile posted a 17 percent dropout rate which was three times as high for the 5 percent in the highest socioeconomic quartile.

The poverty rate for those who had not attended

college was 39 percent as compared to the 5 percent

for those who attended college. Some have asked if

the relationship was due to education or was it

related to the characteristics of persons who go to

school longer. Schweinhart (1985) felt that if

students were led to attend school longer without

changing their underlying characteristics, there may

be no positive effect on their subsequent

socioeconomic status. Christopher Jencks and

colleagues felt that success can be due to what

students learn in school, however, "The best readily

observable predictor of a young man's eventual status

or earnings is the amount of schooling he has had."

There have been important efforts on the state

and federal government to help lessen the strains of

poverty by providing direct welfare assistance

through the Aid to Families with Dependent Children

Program and Food Stamps to impoverished families.

Medicaid provided financial assistance for health

care for children and poor families. Job training for

youth and vocational education programs helped young

people acquire the necessary skills for employment.

Compensatory education was also provided for some

children living in poverty.

The quality of education has been the focal
point for many states in recent years. The
publication, A Nation at Risk, gave educational
reform national attention.

For instance, in the Mesa, Arizona, public
schools, four-year-old children whose birthdays fell
between September and December were allowed to enter
kindergarten if they passed the district screening
test. Kindergarten teachers were opposed to this and
recommended that the district no longer enroll
four-year-old children (Peterson and Ayabe, 1982).

Most of the teachers believed that chronological
age was the best predictor of success in school,
however, forty percent agreed to admit four-year-olds
if they passed a developmental readiness test. The
highest percentage of recommended retentions occurred
among the 5 to 5½ year old group, and the next
highest occurred among the 4½ to 5 year olds. Boys
who were 5 to 5½ years old were recommended for
retention more than girls in this same age group. In
the 4½ to 5 year old group, more boys than girls were
being voluntarily kept out of school by their parents

or the developmental readiness test was screening out
more boys than girls (Peterson and Ayabe, 1982).

A higher percentage of boys in each group was
recommended for retention. The author felt that boys
who passed the developmental test can succeed in
school.

The researcher recommended that age should not
be the sole criterion for kindergarten entrance
requirements and that four year olds can be
successful in school. Social and emotional maturity
in addition to academic criteria should be
considered. Longitudinal data should be used for
tracking students by age groups. Other variables to
consider were achievement test scores, and whether or
not students were actually retained, along with the
teacher's evaluations of the student's maturity
(Peterson and Ayabe, 1982).

Another study was done in Florida by Hilderbrand
and others, (1983) which like the study in Arizona by
Peterson and Ayabe, (1982), permitted four year olds
to enter kindergarten if they passed a developmental
test. In Florida, the entrance to kindergarten was
based on the child's being five years of age by

September 1. Similar to the recommendations in Arizona, the researcher reported that findings did not support continuance of the early entrance program because of average performance by early entrance, district testing cost, and possible negative effects on the 90 percent of the children who failed the examination.

Campbell (1985) conducted a study in Fairfax County, Virginia, public schools to determine whether or not entry age was a factor in academic failure. The subjects for the study were 457 seventh and eight grade students who had been in the Fairfax County Public Schools since kindergarten.

In this research by Campbell, academic failure was measured by low readiness test scores, composite achievement scores below the 59th percentile, grade retention, remedial services, and failing marks. According to the findings, younger entrants earned lower scores on the tests, were disproportionately retained in grade and were more likely to be receiving remedial instruction. In addition to this, the younger entrants did not appear to overcome their inferior position as they progressed through the

elementary grades. The study strongly recommended that the school program be revised to meet the individual needs of the students instead of students being expected to meet program standards set at each grade level.

Many parents and educators agreed with Ilg and Ames (1965), who advocated that children would find more success in school if they were a little older when they started. Donofrio (1977) contended that it was cruel fate if a child were born in August or early September and also happens to be a boy.

A study was conducted in the West Delaware School District by Dietz and Wilson (1985) to determine if there were differences among students in later school performance that could be attributed to chronological age and gender. One hundred seventeen students in three age groups with a mean age of 62 months, 66 months, and 71 months at the time of entry were used in the study. The researchers used kindergarten readiness test scores, standardized achievement test scores, and group ability test scores which were collected as part of the school testing program.

The results indicate that there were no significant differences on readiness scores among groups, nor between boys and girls. There were no significant differences noted among age groups for second grade ITBS reading, math, or composite scores, but boys scored six months lower than did girls. There were no significiant interactions between age and gender. Of the 10 students who were retained at a later date, three were in the youngest group, six in the middle group, and one in the oldest group (Dietz and Wilson, 1985).

The findings are consistent with those of other investigators (Gredler, 1980; Langer, Kalk, and Searls, 1984) and suggest that there is little or no effect on academic achievement that can be attributed to the birthday of a student. The results further indicated that students who were retained in grade did not tend to be among the youngest students (Dietz and Wilson, 1985).

The authors further indicated that educators who routinely recommended the delay on schooling based on the basis of birthday and gender consideration, may

need to re-examine their pessimistic predictions. As
indicated in this review of literature, there were
strong opinions on either side of the determining
factors for early entry to school. Dietz and Wilson
suggested the need for local districts to study the
long-term effects of school entry age, since the
minimum age varies among the states.

Other researchers have agreed with Ames and Ilg
and listed chronological age as the major factor in
school success (Carter, 1956; Davis, Trible, &
Vincent, 1980; Evans, 1974; Hamalainen, Partington,
1937). Early school entrants were compared to
regular entrants on several measures.

It was noted in a study by Carter (1956) that
early entrants had more speech referrals, more
nervous manifestations, and more personality and
social maladjustments. Between 1934 and 1980,
literature reported that there were few variables,
other than chronological age, which were credited
with affecting success in school (Spillman and Lutz,
1985).

There were four areas of development identified
through the literature as related to school success:

physical development, social-emotional development,

basic conceptualization, and language development

(Spillman and Lutz, 1985). This study further

advocated the need to plan a differentiated program

for boys and girls, for girls tend to score higher on

assessment tools than boys and the major concern

should be based on research-based criteria for

helping all children find success in kindergarten

(Spillman and Lutz, 1985).

Bank Street

Cryan and Surbeck (1979) described the Head

Start and Follow Through Model as an example for the

maturationist position, which concentrated on

developing children's self-images and a sense of

self-direction in learning based upon spontaneous

play activities. Children were allowed to choose

from a large variety of activities and found learning

to be self-rewarding. Each child had individual

goals that emerged as the child progressed.

Cryan and Surbeck (1979) noted that there were

two essential ingredients in the Bank Street

approach: First, was the teacher, whose task was to

maintain a climate for learning and to respond

positively to children's needs, and second was the

classroom, which should be arranged to encourage

children to choose appropriate activities within the

context of the environment stressing the social

studies. The organization of the classroom was

flexible and no typical lessons were taught.

Dorothy Cohen of Bank Street emphasized the

importance of observing children. She further stated

that children's behavior was spontaneous, impulsive,

emotionally spurred, changeable, unpredictable and

honest.

Body movement was the major language of

expression, and verbal language was a secondary,

inadequate accompaniment. In early childhood,

movement, gesture and expression told more about the

meaning of children's behavior to themselves than

their words, and teachers were strongly encouraged to

learn to read body movements. When this was done,

then adults were able to read children (Cohen, 1977).

Cohen and Rudolph (1977) stated that the Bank

Street approach recognized play in the curriculum, as

well as all of the other elements of a sound program.
It also included language development, music, art,
science, social studies, block building, woodworking
and the three R's.

Ira Gordon

A home visitor program, the Early Childhood
Stimulation Through Parent Education Project, was
developed by Ira Gordon in Florida. According to
Cryan and Surbeck, the goal of the program was to
enhance the young child's potential for school
success through early stimulation and to help
low-income mothers to develop a positive self-concept
and to improve their sense of control over their
immediate environment. The program operated in the
following manner: A parent educator who was a woman
from the same background as the mother in the
program, visited the young child's home, and
demonstrated an activity from a sequenced infant
curriculum based upon Piagetian Sensory-Motor Tasks
for children between the ages of 2 and 3. The parent
educator was trained at the University of Florida.
The parent educator would role play the model

techniques in order to help the mother understand the
activity and her child's growing capability. Mothers
were encouraged to use the activities with their
children during the week, and to talk and play with
their children.

Cryan and Surbeck have indicated that the
evaluative results on the children involved in the
program have been encouraging. These children scored
higher on standardized tests and retained their gains
up to three years subsequent to leaving the program.
Success was due to the following: (1) emphasis on
the mother-child interaction; (2) provision of
specific activities that were developmentally
appropriate for individual infants; and (3)
supportive but structured guidance requiring active
parent partcipation with the child. This program was
one of the models used in Head Start programs.

Ira Gordon (1977) stated that a great deal is
known about what types of conditions seem to foster
development. An important part of parenting was to
set the stage, arranging space, time, and materials
so that play and interpersonal relationships would
occur in a positive, developmental setting (Cryan and

Surbeck, 1979).

Gordon also included a few other suggestions for
effective parenting. One was to encourage parents to
listen to what the children were saying and ask
questions in order to get the meaning of what they
were trying to express. The author advocated
accepting the products--a block building, a scribble,
a new motor skill--as evidence of children's
orientation.

Positive discipline was another element of
parent education. Gordon believed that watching the
situation before it became a problem, interacting
with the child, and discussing ways to resolve it
were more meaningful than dealing with undesirable
behavior in anger.

Gordon acknowledged freedom--giving a vital
component in learning. The parents were advised to
free both the child's body and mind to experience,
try, question, and explore within safety limits.
This provision included toys, games, objects to
handle and play with, visits to the park, zoo, store,
and street.

Parenting skills were important in all

socioeconomic segments of the community. Parents

have expressed the need for information on child

rearing and the Gordon Model addressed some of those

needs.

Susan Gray

Susan Gray and Rupert Klaus initiated a model at

the George Peabody College for Teachers in 1966 which

was the outgrowth of an early training project held

in 1961. The Demonstration and Research Center for

Early Education (DARCEE) Model had developed a

preschool program for 3, 4, and 5 year old children.

The program was designed for disadvantaged black

children; however, it has served white, Indian and

mixed groups as well. It has been applied to Head

Start because of the variation in the

environmentalist approach to early childhood program

development.

Cryan and Surbeck stated that the goals of the

DARCEE program were the following:

To foster socialization for competence; develop

cognitive skills for environmental mastery, and

develop the sustained motivations necessary for

continued growth. Developing skills and attitude are of utmost importance. The skill objectives focus on the sensory skills, abstracting and mediating skills, and response skills. These skills help to prepare children for the skills they will use in the elementary school. The curriculum is organized around unit themes and emphasizes the handling of manipulative materials by children.

In the program, evaluation stressed the ability to complete a task. The child must complete one task satisfactorily before moving on to the next skill level.

Ames (1978) disagreed with the following: "The sooner he will learn." She felt that the error of this kind of thinking was becoming all too apparent as "early entrance programs" and the formal teaching of academic subjects to preschoolers failed to produce any solid educational advancement of the children so entered or so taught.

Ames also indicated that early entrance programs did harm to the child young in years but bright in mind when placed in a grade for which his age makes

him unready, even though he was very bright. She

supportd and advocated that the bright but immature

young child be prevented from a too early start in

school.

Uphoff and Gilmore (1985) had similar findings

as Ames. The pushing of young children into our

school systems before they were developmentally ready

to cope with it, increased their chances of failure.

Much of their research compared elementary school

children who at the time they entered school were

less than five years three months of age when

enrolled in kindergarten or six years three months

when enrolled in first grade (often called "summer

children" because their birthdays fell between June

and September) with children who were as much as six

years three months when they started first grade. To

summarize this research very briefly:

1. The chronologically older children in a grade

tended to receive many more above-average grades from

teachers than do younger children in that grade.

2. Older children also were much more likely to

score in the above-average range on standardized

achievement tests.

3. The younger children in a grade were far more likely to have failed at least one grade than were older children.

4. The younger children in a grade were far more likely to have been referred by teachers for learning disabilities testing and subsequently have been diagnosed as being learning disabled than were older students in a grade.

5. The academic problems of younger children who were developmentally unready at school entrance often lasted throughout their school careers and sometimes even into adulthood.

Uphoff and Gilmore (1985) gave an example using the study of 278 pupils in the Hebron, Nebraska, Elementary School and found that 23 percent of the population had birthdays between June 1 and October 15, the cutoff date for the state. Another 9 percent were born in the same time period but had been held back for one year before starting school. The youngest group (summer children) made up 75 percent of the school's failure population, while none of the held-back summer children had failed a grade.

In that same study, Uphoff and Gilmore (1985)

also found that although the summer children had a

higher average IQ (girls, 115; boys, 117) than the

held-back summer children (girls, 101; boys 100), the

latter group achieved the same (boys) or higher

(girls) average cumulative percentile scores on the

Iowa Test of Basic Skills. Thus, the less bright but

older and developmentally more mature pupils were

able to do more with the ability they had than were

the brighter younger student.

These same authors believed it could be that the

summer children (girls) were found to be off-task

more than three times as often during large-group

mathematics classes as the held back summer children

girls. The gap in attentiveness for the boys was

smaller but still significant; younger ones were off

task almost twice as much as older boys. It was also

interesting to note that the "middle-agers" fell into

the median range of off-task behavior, thus

indicating a direct correlation between pupil age and

ability to be attentive.

Gilmore (1984) conducted a similar study in

Wapakoneta, Ohio, comparing summer children who had

started school when first eligible with those whose

parents delayed their start by one year. All pupils had completed at least third grade and some the sixth grade, so four to seven years of data were available. Grade level equivalent scores on the Iowa Test favored the older, more matured pupils.

Gilmore (1984) also examined all teacher assigned grades, which often included pupil maturity (cooperation, attitude, effort, and so on) as a factor. Just as before, these results favored the older pupils who were more ready for school when they started. Sixty percent of the summer children girls and 100 percent of the held back summer children girls received above-average grades, as did 47 percent of the held back summer children boys.

Huff (1984) found that early starters had been retained at least once and the delayed starters on the second grade level had an equivalent score of 2.6 as compared to 2.1 for the early starters. Diamond (1983) discovered that December babies were twice as likely to have been diagnosed as specifically learning disabled as were the January-born pupils.

Sputnik provided the impetus for the curriculum to be moved down which resulted in the teaching in

kindergarten that which used to be taught in first grade. Uphoff and Gilmore (1985) stated that Forester (1955) in Montclair, New Jersey, felt that the very bright but very young did not reach their potential. They seldom showed leadership qualities and usually earned only "C" grades. The authors further indicated that Mawhinney (1964) noted why the Grosse Point, Michigan, Schools discontinued the early entrance program for the very bright pupil. These findings correlated to the findings of the other authors in that nearly one-third turned out to be poorly adjusted and many were lacking in leadership skills and ability. Approximately one in four of the very bright early school entrants was either below average in school or had to repeat a grade.

Marilyn Smith (1978) stated that during the initial years of Head Start the funding was almost lost because some evaluators frequently asked: Will there be a significant increase in children's scores on standardized IQ tests?" At that time, early childhood educators in the midst of a comprehensive new preschool initiative showed that the purposes

included (a) enlarging a child's repertoire of
knowledge, (b) increasing self-confidence,
(c) promoting curiosity and initiative, (d) improving
verbal skills, (e) providing nutrition, (f) providing
health/dental assessment and treatment, and
(g) involving parents in the education of their
children. It was felt that these purposes were far
more important than focusing on increasing IQ scores.

Significant government programs have come in
response to economic crisis rather than concern about
improving the quality of life for children.

1. The 1930s--the Great Depression. Children's
programs were initiated and funded to provide jobs.

2. The 1940s--World War II. Children's
programs were funded to allow women to join the work
force in the war factories.

3. The 1960s--The War on Poverty. Head Start
was initiated as one of the many approaches to
improve economic opportunities.

Smith (1978) also wondered why we hesitated to
state straightforwardly that the developmental needs
and rights of young children were reasons for
providing early childhood programs and services. She

further declared that the responsibility for child

development/nurturance without assistance from the

community and society placed heavy expectations on

families. Economic security had an increasingly

powerful influence on the capability of families to

parent constructively and competently.

In the 1970s, the need to acquire the necessary

money resulted in less time with children. According

to Smith (1978), in a high percentage of families

with children (a) both parents were working,

(b) parents were carrying more than one job and

(c) there were increasingly more single parent

families.

The goal of early childhood education was to

facilitate cognitive development, emotional

development and motor development. Early childhood

education should increase the availability of

(a) developmentally appropriate activities,

(b) adult/child interactions and (c) child/child

interactions which will facilitate the fulfillment of

each child's potentiality.

Norma Law (1979) agreed with Marilyn Smith in

that more young parents have taken jobs outside the

home and have continued to search for quality care
for their children. Law (1979) further described
Piaget as insisting that until age eight, young
children needed freedom and encouragement to explore
and discover how they feel about the world and about
other people gradually perceived as distinct from
themselves. Fleeting and often casual sensory
connections and cause-effect relationships came to be
distinguished from their own wishes, fears and
fantasies. Raw materials and social events have to
be manipulated over and over until modes of thinking
and feeling become differentiated. Language and
object exploration proceed simultaneously through
play.

Some researchers believed that there are very
real differences in the way men's and women's brains
are organized. Neurologist Restak (McKee, 1973)
ventured so far as to say that, "Boys think
differently from girls." Researchers have further
observed that more girls than boys excel in verbal
ability, generally do better in foreign languages,
and have fewer speech defects. Stuttering was two to
four times more prevalent in boys than in girls.

Then again, boys tended to excel at tasks requiring visual and spatial ability, from physics and map reading to engineering.   Researchers have rather recently found neurological basis for these differences in aptitudes (McKee, 1973).

According to Meunchow, (McKee, 1973), recent findings did not show sex differences in the size of the brain or its component parts. What the research did show was that the left hemisphere of the brain, the primary center for speech, developed more quickly in girls, while the right hemisphere, the chief regulator of spatial and visual abilities, developed more quickly among boys. There was also evidence that boys have a greater degree of "hemisphere specialization." This meant that a right-handed man generally had his speech center firmly located in the left hemisphere of the brain and his visual and spatial skills in the right, while a right-handed woman was more apt to have verbal and spatial capacities located in both sides of the brain.

In the McKee (1973) article, Edward Zigler stated that "many environmental factors may affect brain specialization." Each one used only a small part of his or her total brain capacity, and

practiced clearly improved intellectual performance.

Perhaps girls developed verbal superiority, in the

associated left hemisphere because they were rewarded

for their expertise in communication skills. Zigler

also claimed that boys whose fathers wanted them to

be fixers and whose mothers admired their capacity to

see the whole world as a big machine, may just try

harder at spatial problems and develop the right

hemisphere of the brain accordingly.

David Elkind, a renowned child psychologist,

stated in McKee (1973), that we often try to force

children to learn things which were inappropriate to

their stage of growth. He further indicated that

preschool children were often pushed into reading,

although reading required the use of complex concepts

(like the fact that letters can have some elements of

similarity and difference at the same time). The

average child only begins to understand that one

thing can be like something else and different from

it at the same time, at the age of six or seven.

Only the brightest children comprehended this at age

three or four.

In this same periodical, McKee (1973), Elkind

also advised that parents and educators should

respect the child's intellectual limitations and not

attempt to bypass them and push on to learning beyond

his or her attained level. One should not try to

force the child to use mental structures that have

not been developed in order to meet some outside

standard of achievement. At each stage of

development, the child has limits as to what he or

she can learn that cannot be ignored.

McKee (1973) mentioned that parents seem more

interested in the child's intellectual abilities than

they were a few years ago. Children were under great

pressure for academic achievement--to learn more

earlier. While this can lead to intellectual

independence at a younger age, it can also result in

more children who suffer from emotional problems

because of school failure. The trend toward smaller

families had caused more pressure on children to

achieve at an earlier age. Young children were being

pushed into organized sports too early.

McKee (1973) commented on the fact that many

children were being brought up by the mother. This

could be traumatic for children, especially for boys

who at times see their fathers as rivals. It had a greater effect on the boys if the fathers left home than if the father died because the male child felt that he ran his father away.

White (1972) has stated that most societies, especially Western civilizations, did not provide organized educational support until a child was six or seven years old. He felt that this was the tradition because at six or seven years of age most children can be taught (in groups) to read without great difficulty. White further cited a report from a task force sponsored by the State Board of Education in California which characterized an educational environment which was responsive to the individual differences of all children, slow or fast, disadvantaged or not, of whatever race and color. It was also believed that there was no point in sending a four-year-old into any type of learning environment not geared to his needs, interest, talents, and capacities.

James Hymes, Jr. (1974) wrote that teachers of youngsters 3, 4, and 5 years of age help their children learn and do it in such a way that they live

their lives in the richest, most satisfying, most constructive way possible. They had programs that were child-centered which encourage children to know and love our country, the best of its past and present. Teachers in these programs were subject-matter centered and know sound ways of teaching it to young children. The right tools and environment were available to do a good job.

Louise Bates Ames (1981) emphasized the Gesell Institute's position that "it is the child's behavioral or developmental age, rather than mere chronological age, intelligence quotient, or reading level, that should determine the time of school entrance." Some state laws permitted children to start kindergarten when they were 5 and in some states when they were only 4½, and first grade when they were 6. These ages dealt only with averages. Common sense told us that not all 5-year-olds have actually reached a normative 5-year-old level of behavior. Ames (1981) recommended that before any child starts kindergarten, he or she should be given a behavior test, or developmental examination, which would indicate exactly how far he or she had come in behavior, and thus was, or was not, ready for the

grade which the law might indicate. This examination would not test intelligence or personality but merely revealed the age level at which the child was using eyes, hands, and body. If birthday age was the deciding criterion, the girls should be 5 before they begin kindergarten and boys fully 5½.

McKee (1980-81) acknowledged that Raymond S. Moore and Dennis R. Moore (1973) also noted the comparative studies of early and late school entrants which overwhelmingly indicated that later entrants generally excelled in achievement, adjustment, leadership in general, social-emotional development and motivation. These studies have been made at high, middle and low socio-economic levels; and measurements have been taken at virtually all grade levels with substantially the same results. Halliwell (1968), in his "Reviewing of Reviews on School Entrance Age and School Success," concluded that

> The analysis of the review on entrance age and
> school success in the elmentary school indicates
> conclusively that despite that plethora of
> prominent individuals and organizations which
> maintain that the research on early entrance

supports the position that early admission
results in not adverse effects, early entrance
to first grade does result in lower achievement
throughout the grades when comparisons of
achievement with control groups of later
entrants of similar abilities are made.

. . . In view of the facts, that at any grade
level the early entrant is approximately seven
months behind his control in achievement, that
despite an extra year of schooling the early
entrant is only three months superior in
achievement to the regular entrant at a
particular age, and that other approaches to
acceleration have resulted in superior
achievement for younger pupils both in terms of
age and grade, the conclusion of the present
reviewer is that the advantages of postponing
early entrance to first grade programs as they
are presently conducted are very real.

McKee (1980-81) pinpointed in the Moore and
Moore article that Rohwer (1970) analyzed the rank
correlations from Husen's study of mathematics
teaching in thirteen countries and found essentially

that the earlier children begin school the more

negative their attitudes toward schooling. The

authors wondered that if these findings were valid,

why then were there no more resources to strengthen

the home. More women working outside the home and

more freedom for the women contributed to the

hindrance of strengthening resources in the home. It

must also be noted that when parents, for the most

part, realize what was best for their children, they

would respond.

Moore and Moore (1973) in the McKee (1980-81)

periodical further indicated that much of the

information on early stimulation comes from the

Benjamin Bloom's (1964) research review. He

concluded that, "in terms of intelligence measured at

age seventeen, from conception to age four the

individual develops 50% of his mature intelligence."

A number of researchers whose data he used including

Nancy Bayley (1970), specialist at the University of

California at Berkely, indicated that he had misused

their findings. Much of the preschool planning on

the federal, state and local programs have been

influenced by Bloom's findings.

As found in McKee (1980-81) Bayley and Honzik

noted the probability from their basis data that
Bloom's figures were exaggerated. Second, even if
his figures were accurate, a child's "mature
intelligence" at this period is not necessarily
synonymous with perception or understanding or
ability to reason or to perceive. Third, if he were
to make the best use of this new ability, home was in
most cases a more likely place than school. And
fourth, he cannot yet make appropriate use of
systematic instruction in reading, language study and
arithmetic.

R.S. Moore and D. Moore (1973) stated that the
early stimulation theory is much like rushing a
thoroughbred cold onto the track as soon as he can
run, in order to make greater use of his heritage of
speed. It was also like forcing open a rosebud,
beautiful in its potential and perfect in its
immaturity, but not yet ready to fully bloom. No
matter how delicately you open it, you end up with a
damaged rose.

According to R. S. Moore and D. Moore in the
McKee periodical (1980-81) neurophysiologically, the
young child was not ready for regular tasks which

require abstract or cause-to-effect thinking until he
is seven or eight or older. They also believed that
leading cognitive psychologists suggested that age
span of seven to eleven as the time when a child
become able to reason abstractly, as required, for
example, in reading. This conclusion was underscored
by Piaget (1966:iv), Rohwer (1970, 1972), Almy
(1966), Elkind (1969, 39:319-337), Furth (1970:1,3,4)
and others.

Ophthamologists and optometrists suggested that
the young child was not ready for the teaching of
reading visually-perceptively until he was at least
seven years old, and for some until age nine. Moore
and Moore further stated that this does not mean that
the child may not learn to read on his own.

Some children might have to be restrained from
too much reading (or television) in order to avoid
permanent eye damage. Similar findings have been
made in auditory and intersensory perception.
Neurophysiologists have found that brain structure
and function, physiological and psychological growth
were very closely related.

Summary

This chapter included the historical development of kindergarten, information on Head Start, High Scope, and Bank Street. The literature also provided insight into the history and development of other programs for the young child. The review of literature indicated that for many years educators throughout the country have expressed concerns over appropriate programs and success in school for the kindergarten child. The Federal, State and Local governments have spent a great deal of time and money to help improve the education for all.

The research acknowledged in this chapter was of value in determining the relationship between the variables examined. The variables investigated by this researcher were important in establishing the relationship between achievement, self-concept, social maturity, race, sex and age of entrance.

CHAPTER THREE

Methodology

This chapter reported the research methodology
and procedures utilized in collecting and analyzing
the data. It will included the population research
site, the participants that were studied, and the
instrumentation used to assess the students.

Hypothesis

The following hypotheses were tested in the
null:

1. There was no significant difference between
academic achievement, self-concept, or social
maturity of kindergarten children based upon age.

2. There was no significant difference between
academic achievement, self-concept, or social
maturity of kindergarten children based on sex.

3. There was no significant difference between
academic achievement, self-concept, or social
maturity of kindergarten children based on race.

The Population

The population for this study consisted of kindergarten children in public elementary schools in Hampton, Virginia. Children from all kindergarten classrooms in each of six selected schools were sampled. A total of seventy-two children, selected randomly, were studied within age and sex strata. Sixty-two children, responded and participated. The missing non-respondents came from across the population and were not from any one or two schools.

Matrix of Participants and Non-respondents

| | Early (Winter - Spring Birthdate) | | | | Late (Fall Birthdate) | | | |
| | Male | | Female | | Male | | Female | |
	Black	White	Black	White	Black	White	Black	White
Partici-pants (86%)	3	6	8	4	10	14	8	9
Non-Respondents (14%)	0	1	2	1	2	3	1	0
Total (100%)	3	7	10	5	12	17	9	9

The Research Site

The research site for this study was the public
school system in Hampton, Virginia. This urban area
had a population of approximately 125,000 in 1985.
The total school population during the 1985-86 school
year was 20,026. There were four senior high schools
containing grades nine through twelve and five middle
schools with grades seven and eight. Most of the
twenty-four elementary schools housed grades
kindergarten through six. There were 6,491 students
in the senior high schools; 3,293 students in the
middle schools and 10,242 children in the elementary
schools.

Study Participants

Study participants were sixty-two kindergarten
children in six elementary schools. The Data
Processing Center for the school systems maintains a
master file on each student and from this list
students will be selected. This file contains a
collection of data including student identification
numbers, grade level, sex, race, and birthdates. The
six schools chosen were representative of the racial

make-up of the total school population. The children

were randomly chosen in proportion to the

relationship of the beginning of the school year and

birth dates.

A review of participants' cumulative folders was

conducted to obtain the data necessary to complete

this study. All folders in the Hampton City Schools

contain uniform units of information and among these

are birthdates, race, sex, achievement scores,

attendance, records of retention and placement and

indications of the existence of confidential folders.

Birthdate was the primary independent variable

utilized because it permitted the researcher to

calculate age at kindergarten entry. Stratified

random sampling included, for purposes of comparison,

children whose birthdates fell in the early and late

intervals of the year. Children from each group were

chosen from each school. Other independent variables

were sex and race.

Research Design

The research design was a comparative

associational design. The statistical tool used was

a two-way analysis of variance. According to Huck,
Cormier and Bounds (1974) the two-way analysis of
variance answered the same questions more quickly and
with less computation than the one-way analysis. The
two-way ANOVA was more sensitive to differences among
the groups that were being compared, and could answer
additional research questions which could not be
answered at all with two separate one-way analysis of
variance.

In this study a correlation coefficient was used
to denote the relationship between two variables
under investigation. A correlation is a number
indicating the degree of relationship between two
variables (Isaac and Michael, 1977). Linton and
Gallo (1975) described the correlation coefficient as
the strength of a relationship between two variables.

Since the strength of a relationship between two
variables in a sample or set of samples described the
correlation coefficient, it is desirable and possible
to apply a test of significance to the coefficient.
The usual null hypothesis tested is that the
correlation in the population from which the
sample(s) was drawn is 0. If the null hypothesis was

rejected, the researcher can then accept the
alternative hypothesis that the variables are
correlated in the population (Linton and Gallo,
1975).

Instrumentation

Several assessment tools were used in this
study. The children were administered the Wide Range
Achievement Test R-1, Level I, the Metropolitan
Readiness Test, Level II, and the Standards of
Learning Objectives which measured achievement. The
Self-Concept and Motivation Inventory Pre-School/
Kindergarten Form (SCAMIN), assessed self-concept and
the Burks' Behavior Rating Scales, Preschool and
Kindergarten edition indicated social maturity. The
Burks' Scales were completed by the classroom
teacher. These tests were given almost at the end of
the school year and would be evaluating one year of
instruction. These instruments were readily
available for any researcher. The teachers also
responded to five questions pertaining to the
children and answered by reflecting on their behavior
at the beginning of the school year.

The Wide Range Achievement Test, R-1, Level I,
was designed to measure spelling, reading and
arithmetic. The Metropolitan Readiness Test assessed
in the areas of auditory, visual, language, and
quantitative concepts. The Standards of Learning
Assessment indicated which of the state defined
kindergarten objectives have been mastered.

Collection of Data

Letters were sent to parents of the children who
were selected. Twelve students from each school
received letters. It was anticipated that at least
ten from each school would return the forms. A total
of sixty-two were returned. The information stated
the purpose of the research and asked permission to
test the child. The permission forms also indicated
that parents would receive copies of the total
results of the testing after the tasks had been
completed, if they wrote their names and addresses on
the permission forms.

The designated tests were administered to the
children in their respective schools. At the

completion of the tests, data were compiled and analyzed.

Summary

The purpose of this chapter was to describe the methodology and procedures to be used in the study, the population, the research site, the participants, the research design, and the instrumentation.

CHAPTER FOUR

Presentation and Analysis of Data

The purpose of this study was to investigate the problem of early school entry as it affects the criteria of achievement, self-concept, and social maturity.

Description of the Population

The data for the study were obtained from the kindergarten children in six elementary schools which represented the racial balance in all of the schools in Hampton. Children from all kindergarten classrooms in each of six schools were sampled. Sixty-two children were used in the study. They were chosen by stratified random selection considering such variables as age of entry, sex and race.

Parental permission was sought for each child. Twelve permission forms were sent for children in each school. A total of sixty-two gave permission which represented an eighty-six percent return.

The two-way analysis of variance was employed to test the hypotheses. The acceptance level at which a

relationship was ruled significant was the .05 level

of significance. Table 1 summarizes the analysis of

variance analyzing the WRAT reading across age and

race.

TABLE 1

Analysis of Variance Table Analyzing WRAT
Reading Across Age and Race

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	.059	1	.059	.003	.957
Age Main Effect	3.307	1	.162	.162	.689
Two-Way Interactions Race and Age	42.715	1	42.715	2.086	.154
Residual	1187.655	58	20.477		
Total	1233.694	61	20.224		

*Significant at the .05 level

As shown in Table 1, in the analysis of variance
(ANOVA) procedure computed to determine the WRAT
reading scores across age and race, no statistically
significant difference was observed for the main
effects of race and age. The two-way interaction of
race and age was also observed not to be
statistically significant, therefore, race and age
have no significant effect on the kindergartner's
WRAT reading scores.

TABLE 2

Analysis of Variance Table Analyzing WRAT
Math Across Age and Race

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	59.373	1	59.373	8.421	.005*
Age Main Effect	46.150	1	46.150	6.545	.013*
Two-Way Interactions Race and Age	17.873	1	17.873	2.535	.117
Residual	408.945	58	7.051		
Total	558.919	61	9.163		

*Significant at the .05 level

Table 2 illustrates the analysis of variance
(ANOVA) procedure computed to determine the WRAT math
scores across age and race for the kindergarten
sample. There was a significant difference ($p < .05$)
for the main effects of race and age, however, the
two-way interaction of race and age was observed to
have no significant difference.

TABLE 3

Cell Means and Marginals for the Analysis
of Variance Table Analyzing WRAT
Math Across Age and Race

Race	Age		
	Early	Not Early	Subtotal
White	16.38	16.91	16.77
Black	12.86	15.71	14.42
Subtotal	14.14	16.40	

As shown in Table 3, a statistically significant difference ($p < .05$) was observed between the WRAT math mean scores computed for the white and black participants. A statistically significant difference was also observed between the WRAT math mean scores for the early and not early group.

TABLE 4

Analysis of Variance Table Analyzing WRAT
Spelling Across Age and Race

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	.417	1	.417	.073	.788
Age Main Effect	17.539	1	17.539	3.062	.085
Two-Way Interactions Race and Age	.662	1	.662	.116	.735
Residual	332.251	58	5.728		
Total	352.774	61	5.783		

*Significant at the .05 level

Table 4 presents the analysis of variance
(ANOVA) computed to determine the WRAT spelling
across age and race. There was no statistically
significant difference for the main effects of race
and age. The two-way interaction of race and age was
also found not to be statistically significant,
therefore, race and age have no significant effect on
the kindergartner's spelling scores.

TABLE 5

Analysis of Variance Results for the
Three SCAMIN Variables

Dependent Variable: Achievement Needs

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	7.108	1	7.108	2.267	.138
Age Main Effect	.780	1	.780	.249	.620
Two-Way Interactions	2.808	1	2.808	.896	.348
Residual	181.832	58	3.135		
Total	191.871	61	3.145		

Dependent Variable: Achievement Investment

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	3.503	1	3.503	.914	.343
Age Main Effect	9.633	1	9.633	2.513	.118
Two-Way Interactions	13.091	1	13.091	3.404	.070
Residual	222.372	58	3.834		
Total	246.710	61	4.044		

TABLE 5 (Continued)

Analysis of Variance Results for the
Three SCAMIN Variables

Dependent Variable: Self Concept

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	8.721	1	8.721	.719	.400
Age Main Effect	4.009	1	4.009	.331	.568
Two-Way Interactions	.476	1	.476	.039	.844
Residual	703.257	58	12.125		
Total	719.500	61	11.795		

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*Significant at the .05 level

Table 5 illustrates the analysis of variance
(ANOVA) computed to analyze the three SCAMIN
variables which were achievement needs, achievement
investment and self concept. No statistically
significant difference was observed for the main
effects of race and age. The two-way interaction of
race and age was also observed not to be
statistically significant, therefore, age and race
have no significant effect on kindergartners SCAMIN
variables.

TABLE 6

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across
Age and Race

Dependent Variable: Excessive Self Blame

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	.399	1	.399	.047	.829
Age Main Effect	6.296	1	6.296	.741	.393
Two-Way Interactions Race and Age	1.443	1	1.443	.170	.682
Residual	492.712	58	8.495		
Total	500.468	61	8.204		

Dependent Variable: Excessive Anxiety

Test Results

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	9.701	1	9.701	1.063	.307
Age Main Effect	13.807	1	13.807	1.514	.224
Two-Way Interactions Race and Age	.190	1	.190	.021	.886
Residual	529.100	58	9.122		
Total	548.919	61	8.99		

TABLE 6 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across
Age and Race

Dependent Variable: Excessive Withdrawal

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	26.572	1	26.572	2.602	.112
Age Main Effect	11.213	1	11.213	1.098	.299
Two-Way Interactions Race and Age	.975	1	.975	.095	.758
Residual	592.328	58	10.213		
Total	625.419	61	10.253		

Dependent Variable: Excessive Dependency

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	13.052	1	13.502	.967	.330
Age Main Effect	1.585	1	1.585	.117	.733
Two-Way Interactions Race and Age	2.152	1	2.152	.159	.691
Residual	782.843	58	13.497		
Total	789.339	61	13.088		

TABLE 6 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across
Age and Race

Dependent Variable: Poor Physical Strength

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	3.048	1	3.048	.304	.584
Age Main Effect	6.165	1	6.165	.614	.436
Two-Way Interactions Race and Age	.377	1	.377	.038	.847
Residual	582.038	58	10.035		
Total	590.194	61	9.675		

Dependent Variable: Poor Coordination

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	2.360	1	2.360	.357	.552
Age Main Effect	1.029	1	1.029	.156	.695
Two-Way Interactions Race and Age	.018	1	.018	.003	.959
Residual	383.341	58	6.609		
Total	387.548	61	6.353		

TABLE 6 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across
Age and Race

Dependent Variable: Poor Intellectuality

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	107.311	1	107.311	3.285	.075
Age Main Effect	1.981	1	1.981	.061	.806
Two-Way Interactions Race and Age	8.753	1	8.753	.268	.607
Residual	1894.984	58	32.663		
Total	2010.984	61	32.967		

Dependent Variable: Poor Attention

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	65.091	1	65.091	3.392	.071
Age Main Effect	17.833	1	17.833	.929	.339
Two-Way Interactions Race and Age	1.911	1	1.911	.100	.753
Residual	1112.837	58	19.187		
Total	1186.836	61	19.456		

TABLE 6 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across
Age and Race

Dependent Variable: Poor Impulse Control

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	.493	1	.493	.033	.857
Age Main Effect	12.048	1	12.048	.800	.375
Two-Way Interactions Race and Age	.470	1	.470	.031	.860
Residual	873.675	58	15.063		
Total	886.194	61	14.528		

Dependent Variable: Poor Reality Contact

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	23.540	1	23.540	1.596	.211
Age Main Effect	6.079	1	6.079	.412	.523
Two-Way Interactions Race and Age	2.301	1	2.301	.156	.694
Residual	855.297	58	14.747		
Total	883.435	61	14.483		

TABLE 6 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across
Age and Race

Dependent Variable: Poor Sense of Identity

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	6.593	1	6.593	1.506	.225
Age Main Effect	2.645	1	2.645	.604	.440
Two-Way Interactions Race and Age	3.892	1	3.892	.889	.350
Residual	253.915	58	4.378		
Total	265.677	61	4.355		

Dependent Variable: Excessive Suffering

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	51.132	1	51.132	3.172	.080
Age Main Effect	7.633	1	7.633	.474	.494
Two-Way Interactions Race and Age	5.031	1	5.031	.312	.579
Residual	934.884	58	16.119		
Total	992.855	61	16.276		

TABLE 6 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across
Age and Race

Dependent Variable: Poor Anger Control

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	10.795	1	10.795	1.198	.282
Age Main Effect	2.209	1	2.209	.241	.625
Two-Way Interactions Race and Age	.081	1	.081	.009	.926
Residual	531.387	58	9.162		
Total	542.968	61	8.901		

Dependent Variable: Excessive Sense of Persecution

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	4.076	1	4.076	.401	.529
Age Main Effect	1.884	1	1.884	.185	.668
Two-Way Interactions Race and Age	5.379	1	5.379	.529	.470
Residual	589.511	58	10.164		
Total	599.935	61	9.835		

TABLE 6 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across
Age and Race

Dependent Variable: Excessive Aggressiveness

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	19.602	1	19.602	.785	.379
Age Main Effect	91.990	1	91.990	3.684	.060
Two-Way Interactions Race and Age	1.581	1	1.581	.063	.802
Residual	1448.365	58	24.972		
Total	1548.387	61	25.383		

Dependent Variable: Excessive Resistance

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	.016	1	.016	.001	.972
Age Main Effect	13.742	1	13.742	1.075	.304
Two-Way Interactions Race and Age	.813	1	.813	.064	.802
Residual	741.510	58	12.785		
Total	756.468	61	12.401		

TABLE 6 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across
Age and Race

Dependent Variable: Poor Social Conformity

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	19.654	1	19.654	1.146	.289
Age Main Effect	12.048	1	12.048	.703	.405
Two-Way Interactions Race and Age	10.628	1	10.628	.620	.434
Residual	994.357	58	17.144		
Total	1031.548	61	16.911		

*Significant at the .05 level

Table 6 illustrates the analysis of variance
(ANOVA) computed to analyze the Burks' Behavior
Rating Scales across race and age. There was no
statistically significant difference ($p < .05$) for the
main effects of race and age in any of the variables
except poor ego strength. The two-way interaction of
age and race have no significant effect on the Burks'
Scales.

TABLE 7

Analysis of Variance Table Analyzing One
of the Variables, Poor Ego Strength,
in the Burks' Behavior Rating
Scales Across Age and Race

Dependent Variable: Poor Ego Strength

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	64.749	1	64.749	4.017	.050*
Age Main Effect	35.555	1	35.555	2.206	.143
Two-Way Interactions Race and Age	.117	1	.117	.007	.933
Residual	934.371	58	16.119		
Total	1019.371	61	16.711		

*Significant at the .05 level

Table 7 presents the analysis of variance

(ANOVA) computed to analyze poor ego strength, one of

the variables in the Burks' Behavior Rating Scales.

There was a significant difference ($p < .05$) for the

interaction of race and age was observed to have no

significant difference.

TABLE 8
Cell Means and Marginals for the Analysis
of Variance Table Analyzing Burks'
Poor Ego Strength Across
Age and Race

	Age		
Race	Early	Not Early	Subtotal
White	10.71	12.41	14.42
Black	8.75	10.26	9.87
Subtotal	10.00	11.18	

As shown in Table 8, a statistically significant difference ($p < .05$) was observed between the Burks' poor ego strength mean scores computed for the white and black participants. A statistically significant difference was also observed between the poor ego strength mean scores for the early and not early groups.

TABLE 9

Analysis of Variance Table Analyzing Teacher
Assessment at the Beginning of Year
Across Age and Race

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	7.823	1	7.823	6.790	.012*
Age Main Effect	2.341	1	2.341	2.032	.159
Two-Way Interactions Race and Age	2.315	1	2.315	2.009	.162
Residual	66.828	58	1.152		
Total	77.935	61	1.278		

*Significant at the .05 level

Table 9 presents the analysis of variance

(ANOVA) procedure computed to determine the teacher

assessment at the beginning of the year across age

and race. There was a significant difference ($p < .05$)

for the race main effect, however, the two-way

interaction of race and age was observed to have no

significant difference.

TABLE 10
Cell Means and Marginals for the Analysis
of Variance Table Analyzing Teacher
Assessment Across Age and Race

Race	Age		
	Early	Not Early	Subtotal
White	4.07	3.29	4.29
Black	4.25	4.30	3.65
Subtotal	4.14	3.88	

As shown in Table 10, a statistically significant difference ($p < .05$) was observed for the teacher assessment mean scores computed for the white and black participants. A statistically significant difference was also observed between the mean scores for the early and not early groups.

TABLE 11

Analysis of Variance Table Analyzing
Metropolitan Readiness Test
Across Age and Race

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	3215.068	1	3215.068	5.492	.023*
Age Main Effect	1026.772	1	1026.772	1.754	.191
Two-Way Interactions Race and Age	2.142	1	2.142	.004	.952
Residual	33951.538	58	585.371		
Total	39142.774	61	641.685		

*Significant at the .05 level

Table 11 presents the analysis of variance

(ANOVA) procedure computed to analyze the

Metropolitan Readiness across age and race. There

was a significant difference ($p < .05$) for the race

main effect. The two-way interaction of race and age

was observed to have no significant difference.

TABLE 12

Cell Means and Marginals for the Analysis of
Variance Table Analyzing Metropolitan
Readiness Test Across Age and Race

	Age		
Race	Early	Not Early	Subtotal
White	54.38	62.61	60.48
Black	39.14	48.18	44.10
Subtotal	44.68	56.48	

As shown in Table 12, a statistically
significant difference ($p < .05$) was observed between
the Metropolitan Readiness mean scores computed for
the white and black participants. A statistically
significant difference was also observed between the
mean scores for the early and not early groups.

TABLE 13

Analysis of Variance Table Analyzing SOL
Reading Across Age and Race

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	877.809	1	877.809	3.811	.056
Age Main Effect	1948.662	1	1948.662	8.461	.005*
Two-Way Interactions Race and Age	198.678	1	198.678	.863	.357
Residual	13358.079	58	230.312		
Total	17055.419	61	279.597		

*Significant at the .05 level

Table 13 summarizes the analysis of variance
(ANOVA) procedure to analyze the SOL reading across age
and race. There was a significant difference (p<.05)
for the age main effect and the SOL reading. The
two-way interaction of race and age was observed to
have no significant difference.

TABLE 14

Cell Means and Marginals for the Analysis of
Variance Table Analyzing SOL Reading
Across Age and Race

	Age		
Race	Early	Not Early	Subtotal
White	89.25	96.87	94.90
Black	76.50	91.82	84.90
Subtotal	81.14	94.73	

The mean scores, as shown in Table 14, computed
for the white and black participants are
significantly statistically different ($p < .05$). The
mean socres computed for the early and not early
groups were also observed to be statistically
different.

TABLE 15

Analysis of Variance Table Analyzing SOL
Math Across Age and Race

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	779.603	1	779.603	4.080	.048*
Age Main Effect	715.762	1	715.762	3.746	.058
Two-Way Interactions Race and Age	244.139	1	244.139	1.278	.263
Residual	11083.131	58	191.088		
Total	13201.484	61	216.418		

*Significant at the .05 level

Table 15 illustrates the analysis of variance
(ANOVA) procedure computed to analyze the SOL math
across age and race. There was a significant
difference (p<.05) for the race main effect, however,
the two-way interaction of race and age was observed to
have no significant difference.

TABLE 16

Cell Means and Marginals for the Analysis of
Variance Table Analyzing SOL Math
Across Age and Race

	Age		
Race	Early	Not Early	Subtotal
White	95.00	97.43	96.81
Black	82.14	93.12	88.16
Subtotal	86.82	95.60	

As shown in Table 16, a statistically significant difference ($p < .05$) was observed between the SOL math mean scores computed for the white and black participants. A statistically significant difference was also observed between the SOL math mean scores for the early and not early groups.

TABLE 17

Analysis of Variance Table Analyzing SOL
Language Arts Across Age and Race

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	0.0	1	0.0		
Age Main Effect	0.0	1	0.0		
Two-Way Interactions Race and Age	0.0	1	0.0		
Residual	0.0	58	0.0		
Total	0.0	61	0.0		

*Significant at the .05 level

Table 17 presents the analysis of variance
(ANOVA) procedure computed to analyze the SOL
language across age and race. Since all of the
children in the study received a score of 100, the
SOL language arts could not be computed.

TABLE 18

Analysis of Variance Table Analyzing WRAT
Reading Across Sex and Age

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	2.127	1	2.127	.101	.752
Age Main Effect	3.182	1	3.182	.151	.699
Two-Way Interactions Sex and Age	4.867	1	4.867	.231	.633
Resdiual	1223.435	58	21.094		
Total	1223.694	61	20.224		

*Significant at the .05 level

Table 18 describes the analysis of variance
(ANOVA) procedure computed to analyze the WRAT
reading across sex and age for the kindergarten
sample. No statistically significant difference was
observed for the main effects of sex and age. The
two-way interaction of race and age was also observed
not to be statistically significant, therefore, sex
and age have no significant effect on the
kindergartner's WRAT reading scores.

TABLE 19

Analysis of Variance Table Analyzing WRAT
Math Across Sex and Age

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	6.589	1	6.589	.813	.371
Age Main Effect	72.037	1	72.037	8.889	.004*
Two-Way Interactions Sex and Age	9.570	1	9.570	1.181	.282
Residual	470.032	58	8.104		
Total	558.919	61	9.163		

*Significant at the .05 level

Table 19 presents the analysis of variance
(ANOVA) procedure computed to analyze the WRAT math
scores across sex and age. There was a significant
difference (p<.05) for the age main effect, however,
the two-way interaction of race and age was observed
to have no significant difference.

TABLE 20

Cell Means and Marginals for the Analysis of
Variance Table Analyzing WRAT Math
Across Sex and Age

| | Age | | |
Race	Early	Not Early	Subtotal
Male	13.89	15.87	16.00
Female	14.31	17.12	15.31
Subtotal	14.14	16.40	

As shown in Table 20, a statistically significant difference $(p < .05)$ was observed between the WRAT math mean scores computed for the male and female participants. A statistically significant difference was also observed between the WRAT mean scores for the early and not early groups.

TABLE 21

Analysis of Variance Table Analyzing WRAT
Spelling Across Sex and Age

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	.346	1	.346	.061	.806
Age Main Effect	19.360	1	19.360	3.406	.070
Two-Way Interactions Sex and Age	3.348	1	3.348	.589	.446
Residual	329.636	58	5.683		
Total	352.774	61	5.783		

*Significant at the .05 level

Table 21 illustrates the analysis of variance

(ANOVA) procedure computed to analyze the WRAT

spelling scores across sex and age. There was no

statistically significant difference observed for the

main effects of sex and age. The two-way interaction

of sex and age was also observed not to be

statistically significant, therefore, sex and age

have no significant effect on the kindergartner's

WRAT spelling scores.

TABLE 22

Analysis of Variance Results for the Three
SCAMIN Variables

Dependent Variable: Achievement Needs

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effects	.006	1	.006	.002	.965
Age Main Effects	.124	1	.124	.038	.847
Two-Way Interactions	.306	1	.306	.093	.762
Residual	191.435	58	3.301		
Total	191.871	61	3.145		

Dependent Variable: Achievement Investment

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effects	.293	1	.293	.072	.790
Age Main Effects	7.788	1	7.788	1.907	.173
Two-Way Interactions	1.834	1	1.834	.449	.505
Residual	236.839	58	4.803		
Total	246.710	61	4.044		

TABLE 22 (Continued)

Analysis of Variance Results for the Three
SCAMIN Variables

Dependent Variable: Self Concept

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effects	26.082	1	26.082	2.215	.142
Age Main Effects	6.632	1	6.632	.563	.456
Two-Way Interactions	3.357	1	3.357	.285	.595
Residual	683.016	58	11.776		
Total	719.500	61	11.795		

*Significant at the .05 level

Table 22 presents the analysis of variance

(ANOVA) computed to analyze the three SCAMIN

variables which are achievement needs, achievement

investment, and self-concept. There was no

statistically significant difference observed for the

main effects of sex and age. The two-way interaction

of sex and age was also observed not to be
statistically significant, therefore, sex and age
have no significant effect on the kindergartner's
SCAMIN variables.

TABLE 23

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across Sex and Age

Dependent Variable: Excessive Self Blame

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	12.601	1	12.601	1.526	.222
Age Main Effect	6.181	1	6.181	.749	.390
Two-Way Interactions Sex and Age	3.102	1	3.102	.376	.542
Residual	478.852	58	8.256		
Total	500.468	61	8.204		

Dependent Variable: Excessive Anxiety

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	3.900	1	3.900	.447	.507
Age Main Effect	10.119	1	10.119	1.159	.286
Two-Way Interactions Sex and Age	28.633	1	28.633	3.279	.075
Residual	506.457	58	8.732		
Total	548.919	61	8.999		

TABLE 23 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across Sex and Age

Dependent Variable:. Excessive Withdrawal

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	.755	1	.755	.071	.790
Age Main Effect	5.480	1	5.480	.518	.475
Two-Way Interactions Sex and Age	5.395	1	5.395	.510	.478
Residual	613.725	58	10.581		
Total	625.419	61	10.253		

Dependent Variable: Excessive Dependency

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	2.515	1	2.515	.190	.665
Age Main Effect	.318	1	.318	.024	.877
Two-Way Interactions Sex and Age	26.394	1	26.394	1.990	.164
Residual	769.138	58	13.261		
Total	798.339	61	13.088		

TABLE 23 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across Sex and Age

Dependent Variable: Poor Ego Strength

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	.606	1	.606	.036	.851
Age Main Effect	19.485	1	19.485	1.147	.289
Two-Way Interactions Sex and Age	13.960	1	13.960	.822	.368
Residual	985.209	58	16.986		
Total	1019.371	61	16.711		

Dependent Variable: Poor Physical Strength

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	26.250	1	26.250	2.785	.101
Age Main Effect	5.079	1	5.079	.539	.466
Two-Way Interactions Sex and Age	12.490	1	12.490	1.325	.254
Residual	546.724	58	9.426		
Total	590.194	61	9.675		

TABLE 23 (Continued)

Analysis of Variance Table Analyzing Burks' Behavior Rating Scales Across Sex and Age

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Dependent Variable: Poor Coordination

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	8.811	1	8.811	1.360	.248
Age Main Effect	1.708	1	1.708	.264	.610
Two-Way Interactions Sex and Age	1.028	1	1.028	.159	.692
Residual	375.880	58	6.481		
Total	387.548	61	6.353		

Dependent Variable: Poor Intellectuality

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	3.606	1	3.606	.110	.741
Age Main Effect	.453	1	.453	.014	.907
Two-Way Interactions Sex and Age	108.957	1	108.957	3.330	.073
Residual	1897.928	58	32.723		
Total	2010.984	61	32.967		

TABLE 23 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across Sex and Age

Dependent Variable: Poor Attention

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	.585	1	.585	.029	.866
Age Main Effect	6.936	1	6.936	.341	.561
Two-Way Interactions Sex and Age	1.160	1	1.160	.057	.812
Residual	1178.094	58	20.312		
Total	1186.839	61	19.456		

Dependent Variable: Poor Impulse Control

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	3.797	1	3.797	.263	.610
Age Main Effect	11.349	1	11.349	.785	.379
Two-Way Interactions Sex and Age	32.758	1	32.758	2.267	.138
Residual	838.083	58	14.450		
Total	886.194	61	14.528		

TABLE 23 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across Sex and Age

Dependent Variable: Poor Reality Contact

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	2.329	1	2.329	.156	.694
Age Main Effect	2.368	1	2.368	.159	.692
Two-Way Interactions Sex and Age	12.781	1	12.781	.856	.359
Residual	866.029	58	14.932		
Total	883.435	61	14.483		

Dependent Variable: Poor Sense of Identity

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	.054	1	.054	.012	.914
Age Main Effect	1.269	1	1.269	.278	.600
Two-Way Interactions Sex and Age	.029	1	.029	.006	.936
Residual	264.317	58	4.557		
Total	265.677	61	4.355		

TABLE 23 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across Sex and Age

Dependent Variable: Excessive Suffering

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	6.184	1	6.184	.367	.547
Age Main Effect	1.705	1	1.705	.101	.752
Two-Way Interactions Sex and Age	7.948	1	7.948	.472	.495
Residual	976.915	58	16.843		
Total	992.855	61	16.276		

Dependent Variable: Poor Anger Control

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	1.864	1	1.864	.206	.651
Age Main Effect	.669	1	.669	.074	.787
Two-Way Interactions Sex and Age	15.961	1	15.961	1.765	.189
Residual	524.438	58	9.042		
Total	542.968	61	8.901		

TABLE 23 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across Sex and Age

Dependent Variable: Excessive Sense of Persecution

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	5.489	1	5.489	.543	.464
Age Main Effect	.899	1	.899	.089	.767
Two-Way Interactions Sex and Age	7.200	1	7.200	.712	.402
Residual	586.935	58	10.108		
Total	599.935	61	9.835		

Dependent Variable: Excessive Aggressiveness

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	66.417	1	66.417	2.830	.098
Age Main Effect	76.604	1	76.604	3.264	.076
Two-Way Interactions Sex and Age	41.946	1	41.946	1.787	.186
Residual	1361.185	58	23.469		
Total	1548.387	61	25.383		

TABLE 23 (Continued)

Analysis of Variance Table Analyzing Burks'
Behavior Rating Scales Across Sex and Age

Dependent Variable: Excessive Resistance

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	2.489	1	2.489	.197	.659
Age Main Effect	13.943	1	13.943	1.103	.298
Two-Way Interactions Sex and Age	6.428	1	6.428	.508	.479
Residual	733.422	58	12.645		
Total	756.468	61	12.401		

Dependent Variable: Poor Social Conformity

Test Results:

	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	1.812	1	1.812	.103	.750
Age Main Effect	6.799	1	6.799	.386	.537
Two-Way Interactions Sex and Age	.359	1	.359	.020	.887
Residual	1022.468	58	17.629		
Total	1031.548	61	16.911		

Table 23 illustrates the analysis of variance
(ANOVA) computed to analyze the Burks' Behavior
Rating Scales across sex and age. There was no
statistically significant difference for the main
effects of sex and age, therefore, the two-way
interaction of sex and age have no significant effect
on the Burks' scales.

TABLE 24

Analysis of Variance Table Analyzing Teacher
Assessment at the Beginning of Year
Across Sex and Age

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	.001	1	.001	.001	.981
Age Main Effect	.969	1	.969	.759	.387
Two-Way Interactions Sex and Age	2.957	1	2.957	2.317	.133
Residual	74.008	58	1.276		
Total	77.935	61	1.278		

*Significant at the .05 level

Table 24 presents the analysis of variance
(ANOVA) procedure computed to analyze the teacher
assessment at the beginning of the year across sex
and age. There was no statistically significant
difference observed for the main effects of sex and
age. The two-way interaction of sex and age was also
observed not to be statistically significant,
therefore, sex and age have no significant effect on
the teacher assessment at the beginning of the year.

TABLE 25

Analysis of Variance Table Analyzing
Metropolitan Readiness Test Across
Sex and Age

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	626.114	1	626.114	.999	.322
Age Main Effect	2008.001	1	2008.001	3.205	.079
Two-Way Interactions Sex and Age	209.829	1	209.829	.335	.565
Residual	36332.805	58	626.428		
Total	39142.774	61	641.685		

*Significant at the .05 level

Table 25 presents the analysis of variance
(ANOVA) procedure computed to analyze the
Metropolitan Readiness Test across sex and age.
There was no statistically significant difference
observed for the main effects of sex and age. The
two-way interaction of sex and age was also observed
not to be statistically significant, therefore, sex
and age have no significant effect on race.

TABLE 26

Analysis of Variance Table Analyzing SOL
Reading Across Sex and Age

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Race Main Effect	.836	1	.836	.003	.954
Age Main Effect	2621.674	1	2621.674	10.589	.002*
Two-Way Interactions Sex and Age	74.100	1	74.100	.299	.586
Residual	14359.630	58	247.580		
Total	17055.419	61	279.597		

*Significant at the .05 level

Table 26 illustrates the analysis of variance
(ANOVA) procedure computed to analyze the SOL reading
across sex and age. There was a significant
difference ($p < .05$) for the age main effect, however,
the two-way interaction of sex and age was observed
to have no significant difference.

TABLE 27

Cell Means and Marginals for the Analysis of
Variance Table Analyzing SOL Reading
Across Sex and Age

	Age		
Race	Early	Not Early	Subtotal
Male	79.22	95.53	89.88
Female	82.46	94.13	89.92
Subtotal	81.14	94.73	

As shown in Table 27, a statistically significant difference (p<.05) was observed between the mean scores for the early and not early groups. There was also a statistically significant difference (p<.05) for the male and female children.

TABLE 28

Analysis of Variance Table Analyzing SOL
Math Across Sex and Age

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	27.671	1	27.671	.135	.715
Age Main Effect	1088.989	1	1088.989	5.300	.025*
Two-Way Interactions Sex and Age	161.220	1	161.220	.785	.379
Residual	11917.982	58	205.482		
Total	13201.484	61	216.418		

*Significant at the .05 level

Table 28 presents the analysis of variance
(ANOVA) computed to analyze the SOL math across sex
and age. There was a significant difference ($p < .05$)
for the age main effect, however, the two-way
interaction of sex and age was observed to have no
significant difference.

TABLE 29

Cell Means and Marginals for the Analysis
of Variance Table Analyzing SOL Math
Across Sex and Age

| | Age | | |
Race	Early	Not Early	Subtotal
Female	85.00	94.00	93.35
Male	88.08	97.76	91.86
Subtotal	86.82	95.60	

As shown in Table 29, a statistically
significant difference ($p < .05$) was observed in SOL
math scores computed for the early and not early
groups. A statistically significant difference was
also observed between the SOL math scores for the
female and male students.

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TABLE 30

Analysis of Variance Table Analyzing SOL
Language Arts Across Sex and Age

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Sex Main Effect	0.0	1	0.0		
Age Main Effect	0.0	1	0.0		
Two-Way Interactions Sex and Age	0.0	1	0.0		
Residual	0.0	58	0.0		
Total	0.0	61	0.0		

*Significant at the .05 level

Table 30 presents the analysis of variance
(ANOVA) procedure computed to analyze the SOL
language arts scores across sex and age. Since all
of the children in the study received a score of 100,
the SOL language arts could not be computed.

CHAPTER FIVE

Summary, Conclusions, Issues and

Implications, and Recommendations

Introduction

The purposes of this chapter were: (1) to summarize findings and conclusions based on the analysis of the data, and (2) to make recommendations for application of the results of the study to the Hampton City Public Schools. The chapter was organized in the following order: (1) a restatement of the problem and purpose, (2) a restatement of the hypothesis tested, (3) a concise description of the research design, (4) findings, (5) discussion of overall results, (6) conclusions, (7) issues and implications for future research, and (8) a list of recommendations.

Statement of the Problem

This was a study to investigate the problem of early school entry as it affects the criteria of achievement, self-concept and social maturity.

Purpose of the Study

The primary purpose of this study was to examine the effectiveness of kindergarten in relationship to achievement and entrance age. A secondary purpose was to examine the early entrance age and achievement as they are related to race and sex. This study was descriptive in nature. Isaac and Michael (1977) denoted that the population census studies and test score analyses were examples of descriptive research.

Hypotheses

This study tested the following hypotheses in the null:

1. There is no significant difference between academic achievement, self-concept or social maturity of kindergarten children based upon age.

2. There is no significant difference between academic achievement, self-concept or social maturity of kindergarten children based on sex.

3. There is no significant difference between academic achievement, self-concept or social maturity of kindergarten children based on race.

Research Design

The research study employed a comparative associational design across several dependent variables - academic achievement, social maturity and self-concept. The statistical procedure used to analyze each was a two-way analysis of variance with age and race or age and sex as the classification.

Sixty-two kindergarten children from six elementary schools were used as a result of stratified random selection. These children were a representation of the total kindergarten population stratifying for early and late birthdates, male and female children, and black and white children.

Permission was granted from the Hampton City Schools Research Committee to conduct the study. Parental permission was also obtained before testing could be done on the children.

Several assessment tools were used in the study. The Wide Range Achievement Test R-1, Level I, the Metropolitan Achievement Test, Level II, and the student's mastery of the Standards of Learning Objectives which measured achievement. The Self-Concept and Motivation Inventory Pre-School/

Kindergarten Form (SCAMIN) and the Burks' Behavior

Rating Scales, Preschool and Kindergarten edition,

measured social maturity. The teachers responded to

five questions reflecting on the students' behavior

at the beginning of the school year.

The Findings

The data upon which these findings were based

were presented and analyzed in Chapter 4. In

addition to this, a set of correlations are reported

in Appendix F.

Summary of Findings

Hypothesis Number 1 - There was no statistically

significant difference ($p < .05$) between academic

achievement, self-concept, or social maturity of

kindergarten children based upon age.

The hypothesis was rejected in part because of

the following: (1) There was a significant

difference ($p < .05$) for the WRAT Math Test across age

main effect; (2) There was a significant difference

(p<.05) for the Standards of Learning Objectives in reading and math across age main effect.

Hypothesis Number 2 - There was no statistically significant difference between academic achievement, self-concept, or social maturity of kindergarten children based on sex.

Hypothesis number 2 was accepted.

Hypothesis Number 3 - There was no significant difference between academic achievement, self-concept, or social maturity of kindergarten children based on race.

The hypothesis was rejected in part because of the following:

1. There was a significant difference (p<.05) for the WRAT math test across race main effect.

2. There was a significant difference (p<.05) for one of the variables, poor ego strength in the Burks' Behavior Rating Scales across the race main effect.

3. There was a significant difference (p.<05) for the Teacher Assessment across race main effect.

4. There was a significant difference (p<.05) for the Standards of Learning Objectives in math across race main effect.

5. There was a significant difference (p<.05) for the Metropolitan Readiness Test across race main effect.

Hypotheses I and III were rejected in part because the data showed there were significant differences (p<.05) on the Wide Range Achievement Test in math across age and race. The mean scores computed for the early children, September 30 to December 31, and not early groups, winter and spring children, were also observed to be statistically different (p<.05). The mean scores were lower for the black children than for the white children.

Hypothesis III was rejected in part because the results on the Metropolitan Readiness Test indicated that there was a statistically difference (p<.05) for the race main effect. The mean scores were lower for the black children than for the white children. There was also a significant difference found between

the early and not early entrants as proposed in
Hypothesis I.

Hypothesis I stated that there was no
significant difference in achievement based upon age,
however in the SOL reading objectives across age main
effect, there was a statistically significant
difference ($p < .05$). The mean scores were lower for
the black children than for the white children.

There was also a statistically significant
difference ($p < .05$) in the SOL math objectives across
race main effect. Hypothesis III was rejected in
part because the data supported the significant
difference established here. The mean scores were
lower for the black children than for the white
children.

As described earlier, a statistically
significant difference ($p < .05$) in SOL reading and
math objectives across age main effect was also
observed. There was a significant difference between
early and not early male and female groups.

Discussion of Overall Results

The results provided a broad range of individual

differences within all groups which indicated that

the error terms were large within the range in scores

observed, rather than between the mean group scores.

Therefore, the question of early age became one not

of chronological age but of developmental maturity.

To the extent that this study indicated that

youngsters should be admitted based on developmental

age was nothing new. Admitting children at a later

chronological age provided an advantage for those who

matured slower, but caused problems for the children

who was ready to learn.

The reality of the situation is that we will not

allow children to enter school based on maturity, but

on some arbitrary chronological age. Therefore,

since the system can not accommodate children based

on developmental maturity in terms of entrance, it

must accommodate their developmental maturity once

they have entered school.

In Virginia the social maturity of the child is

of concern and is being implemented as discussed in

Chapter I. Indices of social maturity are better

predictors of success in school than chronological age.
The ideal situation would be to give each child enough
support, and a prescription to help each one get
through the basics and apply the concepts. This would
take considerable time and money. The results of this
study would argue for a broadening practice throughout
the State for additional pre-kindergarten or junior
kindergarten programs.

Although this study did not delve into the reason
for low self-concept in black children, this problem
certainly needs serious attention. There is enough
information in the literature to suggest that home
start styled programs which deal with the way in which
parents relate to their children, especially, as
regards to school achievement, should be implemented.

This researcher has noticed that part of the
problem with math scores is that parents teach reading
at home, but seldom teach math. Parents spend a
considerable amount of time reading to children,
sometimes an hour or more a day. Very little time is
spent in math, other than activities such as counting
candles on a cake, counting fingers, and rote counting.

Conclusions

The analysis of data obtained in the study
supported the following conclusions concerning the
relationship of achievement to entrance age, race,
and sex. As indicated from the findings on objective
measures used, there was no difference on Wide Range
Achievement Test (WRAT) in reading, but there was a
significant difference in WRAT math across age and
race. On the Standards of Learning (SOL) objectives
there was a significant difference in both reading
and math. The lack of readiness that existed could
be a reaction to the difference in instruction.

The difference between the WRAT Test and the SOL
Objectives is that the WRAT is a norm referenced test
and the SOL has a series of criterion referenced
tests which evaluates for mastery. On the WRAT, a
stratified national sampling was used for the age
norm data collection. This was a very accurate
measurement of the three basic academic codes--
reading, math, and spelling--with an age norming for
a representative sample of individuals from all
sections of the United States.

There was no differnce in WRAT reading which

indicated that children are adjusting to the reading

instruction, the testing situation, and to the

listening and following of directions skills. There

was also no difference in social maturity and

self-concept. Age differences were overrun by

individual differences.

The racial differences must be given attention.

Black children scored lower than the white children

on the instruments used. To help offset these

differences, black parents could be encouraged to

read more to their children, at least an hour a day.

Teachers could involve the children in more

activities that can be used as a means of learning to

read, such as dramatizing, storytelling, conversing

with peers and taking field trips. Helping children

find success could also lead to higher self-concept.

It is very significant that the value of

education has high priority in the home. Most

educators generally believe that math is not taught

until the child goes to school.

Finally, this study drew attention to the

importance of focusing on improving the math

performance of children and the teaching of math.

The skills of black children, on the whole, were at a

lower level than those of the white children.

Adaptability and flexibility of teachings must be

encouraged so that all children's needs are met.

Issues and Implications for Future Research

The results of this study raised several issues

and questions for future research. Since math

presented the greatest concern, a concerted effort to

concentrate on math instruction and activities in

school must be given high priority.

There is a need to explore and investigate the

kinds of math instruction and activities used with

the very young child. Does math have the same

importance as reading, self-concept, and social

maturity? Are concrete materials used in the math

program?

There are questions related to instruction in

the home that should be considered. Is sufficient

time for math instruction made a part of daily living

for the young child in the home as well as in the

school? Are math related literature and activities

for the young child found in the home? An

examination of the answers to these questions would

provide more conclusive information in addressing the

concerns in math.

A more longitudinal study than this study tracking

children from kindergarten through high school could

provide valuable data. Discrepancies might widen as

the students progress higher in school.

Recommendations

Based on the conclusions of this study, the

following recommendations were made:

1. Children should enter school based on

developmental age rather than chronological age.

Parents expect children to enter kindergarten at the

chronological age of five. This is the age that most

children enter school. Only a major change in

thinking will modify this practice. However,

instruction should be based on child readiness rather

than on school readiness.

2. Educators would do well to explore various

methods to effectively teach math. Since

developmental maturity is a key to learning ability,

instructors must be prepared by training to instruct

with developmental maturity in mind.

3.   More studies of this problem are needed.
Both the effectiveness of instruction and the
efficiency of school expenditures are at question.

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APPENDIX A

REQUEST FOR APPROVAL OF RESEARCH PROJECT

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REQUEST FOR APPROVAL
RESEARCH PROJECTS
HAMPTON CITY SCHOOLS

School Aberdeen   School year 1985-86
Person/Office making request

Brief description of project (to include specific purpose(s))

The purpose of the study is to investigate the problem of early entry of the
kindergarten child controlling for such factors as maturity level, achievement,
self-concept, retention absenteeism, single parent. sex, race, and birthdate.
It is anticipated that six Hampton Elementary Schools will be used with nine
children from each school.

Which of the following do you anticipate using?

Surveys /x /   Questionnaires /x /   Student Records /x /

Teacher Records / /   School records /x /   Test Results /x /

What do you intend to do with the project findings/conclusions?

These findings will be included in my doctoral dissertation and could be shared
with the superintendent and other school officials.

_____ October 10, 1985
           Signature   /   date

Submit to: Dr. Joseph Lyles
            Administrative Assistant
            School Administrative Center
- -

/ / See attached (more information needed)

/ / Approved as per this request

_____
Administrative Assistant, Chairman

_____   _____
Director of Program Evaluation   Director of Secondary Instruction

_____   _____
Director, Guidance and Testing   Director of Elementary Instruction

APPENDIX B

LETTER TO PARENTS

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Dear Parents:

I am an elementary principal in the Hampton School System and have become very interested in the kindergarten child and achievement. I am conducting research for a doctoral dissertation on the early entrance of the kindergarten child and how it effects achievement.

This study is significant because school systems, communities and colleges throughout the nation have expressed concerns on the education of the young child.

In order to gather appropriate data, a few tests must be administered to your child with your permission. These tests will measure self-concept, achievement and social maturity. Students participating will be identified by number. Results will be shared with the Superintendent, and may be used to assist in future planning for the young child.

Before testing can be done, parental permission is needed. Please sign the attached form and return to your child's teacher within the next five days.

Thank you for your cooperation.

Very truly yours,

(Mrs.) Betty H. Peters

BHP:s

APPENDIX D

LETTER TO PRINCIPAL

Aberdeen School

1424 ABERDEEN ROAD

Hampton, Virginia 23566

OFFICE of the PRINCIPAL

April 28, 1986

Dear Colleague:

Thank you for agreeing to help me with my research project. Letters to parents of kindergarten children, information, and a description of the research are enclosed in these envelopes.

Please see that your children take them home today or tomorrow. I have asked the parents to return them to school within five days. I would appreciate your letting me know when they have been returned.

Thank you ever so much.

Sincerely,

Betty Peters

Enclosures

APPENDIX E

TEACHER ASSESSMENT

NAME OF STUDENT _____

SCHOOL _____TEACHER_____

* At the beginning of the school year:

	YES	SOMETIMES	NO
1. Cries easily			
2. Separates easily from parents.			
3. Has adequate coordination.			
4. Is attentive for appropriate length of time (length of time depends on activity).			
5. Gets along well with other children.			

*Complete these five questions thinking in terms of the children when they entered school.

APPENDIX F

CORRELATIONS

TABLE 31

Correlation Between Student Age and Achievement
in Reading, Math and Spelling on the WRAT

Category	Correlation Coefficient	Cases	Level of Significance
Reading V2	.0514	62	.691
Math V3	-.3607	62	.004*
Spelling V4	-.2348	62	.006

*Correlation was significant at the .05 level

Table 31 represents a correlation between student age and achievement in reading, math and spelling on the WRAT. The level of significance was .004 in math which is less than .05; therefore, a significant difference does exist between age and math as indicated on the WRAT.

Peterson and Ayabe (1982) recommended that age should not be the sole criterion for entrance to kindergarten, and that the younger child can be successful in school. The above table correlates with Peterson and Ayabe and indicates that age does not make a difference in achievement. On this particular test, there is a significant difference between only one area, math and age.

TABLE 32

Correlation Between Student Age and
Scores on the SCAMIN

Category	Correlation Coefficient	Cases	Level of Significance
Achievement Needs V5	-.0253	62	.845
Achievement Investment V6	-.1772	62	.168
Self Concept V7	.0990	62	.444

*Correlation was significant at the .05 level

There were no significant differences in student age and scores on the SCAMIN. The variables assessed were achievement needs, achievement investment and self-concept.

Ira Gordon advocated helping mothers from low income to develop a positive self-concept which would ultimately help the young child's potential for success in school. The above table does not support any degree of significance between age and self-concept.

TABLE 33

Correlation Between Student Age and Variables
on the Burks' Behavior Rating Scales

Category	Correlation Coefficient	Cases	Level of Significant
Excessive Self-Blame V8	-.1087	62	.400
Excessive Anxiety V9	-.1345	62	.297
Excessive Withdrawal V10	-.0942	62	.467
Excessive Dependency V11	-.0191	62	.883
Poor Ego Strength V12	-.1386	62	.283
Poor Physical Strength V13	-.0895	62	.489
Poor Coordination V14	-.0687	62	.596
Poor Intellectuality V15	-.0157	62	.904
Poor Attention V16	-.0768	62	.553
Poor Impulse Control V17	-.1142	62	.377
Poor Reality Contact V18	-.0510	62	.694
Poor Sense of Identity V19	-.0693	62	.592

TABLE 33 (Continued)

Correlation Between Student Age and Variables
on the Burks' Behavior Rating Scales

Category	Correlation Coefficient	Cases	Level of Significant
Excessive Suffering V20	-.0427	62	.742
Poor Anger Control V21	-.0360	62	.781
Excessive Sense of Persecution V22	-.0402	62	.756
Excessive Sense of Aggressiveness V23	-.2256	62	.078
Excessive Sense of Resistance V24	-.0818	62	.527
Poor Social Conformity V25	-.0818	62	.527

*Correlation was significant at the .05 level

Table 33 depicts the correlation between student age
and variables on the Burks' Behavior Rating Scale. There
are no significant differences between age and any of the
variables on the Burks' Behavior Rating Scale.

Uphoff and Gilmore (1985) stated the older children

were able to do more with their ability and that
the younger ones were off task more. The findings in
this study between age and the Burks' Behavior Rating
Scales do not agree with the findings of Uphoff and
Gilmore.

TABLE 34

Correlation Between Student Age and Teacher
Assessment at Beginning of School Year

Category	Correlation Coefficient	Cases	Level of Significance
Teacher Assessment at Beginning of Year V26	.1115	62	.388

*Correlation was significant at the .05 level

Table 34 represents the correlation between
student age and teacher assessment at the beginning
of the school year. No significant difference was
found between age and teacher assessment.

TABLE 35

Correlation Between Self-Concept on the Burks'
Scales and Reading, Math and Spelling
on the WRAT

Category	Correlation Coefficient	Cases	Level of Significance
Reading V2	-.1725	62	.180
Math V3	-.0244	62	.850
Spelling V4	-.0119	62	.927

*Correlation was significant at the .05 level

Table 35 illustrates the correlation between
self-concept and reading, math, and spelling on the
WRAT. No significant difference was found between
self-concept and reading, math, and spelling on the
WRAT.

TABLE 36

Correlation Between Achievement on the WRAT in
Reading, Math and Spelling and Certain
Variables on the Burks' Scales

Category	Correlation Coefficient	Cases	Level of Significance
Spelling			
Poor Ego Strength V12	-.2807	62	.027*
Poor Physical Strength V13	-.2485	62	.051
Poor Intellect- uality V15	-.2775	62	.029*
Poor Attention V16	-.2580	62	.043*

*Correlation is significant at the .05 level

The above table depicts the correlation between
achievement on the WRAT and certain variables on the
Burks' Scales. There is a significant difference
between the spelling achievement on the WRAT and poor
ego strength .027, poor intellectuality .029 and poor
attention .043. This could be attributed to the fact
that the kindergarten children were not taught
spelling. There were no significant differences

between achievement in reading and math on the WRAT
and any variables on the Burks' Scales.

Ames (1981) recommended that a child should be
given a developmental examination, a behavior test,
which would indicate readiness for a particular
grade. The results on this table could support the
need for such a test.

TABLE 37

Correlation Between Self-Concept, Achievement
Needs, and Achievement Investment on
the SCAMIN

Category	Correlation Coefficient	Cases	Level of Significance
Achievement Needs V5	.4737	62	.000*
Achievement Investment V6	-.2991	62	.018*

*Correlation is significant at the .05 level

Table 37 symbolizes the correlation between
self-concept, and achievement needs and achievement
investment as indicated on the SCAMIN. There is a
high level of significance between self-concept and
achievement needs and self-concept and achievement
investment.

The findings in this table further supports the
concept by Ira Gordon and the Head Start Program.
Both indicate that a positive self-concept plays an
important part in achievement.

TABLE 38

Correlation Between Race and Achievement in
Reading, Math and Spelling on the WRAT

Category	Correlation Coefficient	Cases	Level of Significance
Reading V2	-.0036	62	.978
Math V3	.3922	62	.002*
Spelling V4	.0811	62	.531

*Correlation is significant at the .05 level

Table 38 identifies the correlation between race
and achievement in reading, math and spelling on the
WRAT. There is a low positive correlation between
race and math. Little, if any correlation exist
between race, with reading or spelling on the WRAT.

TABLE 39

Correlation Between Self-Concept on the
SCAMIN and Reading and Math in the
Standards of Learning

Category	Correlation Coefficient	Cases	Level of Significance
Reading V31	-.2549	62	.046*
Math V32	-.2859	62	.024*

*Correlation is significant at the .05 level

Table 39 represents a correlation between self-concept on the SCAMIN and reading and math in the Standards of Learning. There is a significant difference between self-concept as indicated on the SCAMIN and reading and self-concept and math as designed in the Standards of Learning.

The results in this table corresponds with the Ira Gordon and Head start philosophy. Self-concept and achievement are highly correlated.

TABLE 40

Correlation Between Physical Strength
and Other Variables in the Burks' Scales

Category	Correlation Coefficient	Cases	Level of Significance
Excessive Self Blame V8	.4585	62	.000*
Excessive Anxiety V9	.7447	62	.000*
Excessive Withdrawal V10	.5923	62	.000*
Excessive Dependency V11	.7314	62	.000*
Poor Ego Strength V12	.6842	62	.000*
Poor Coordination V14	.6877	62	.000*
Poor Intellect- uality V15	.7328	62	.000*
Poor Attention V16	.5830	62	.000*
Poor Impulse Control V17	.0855	62	.509
Poor Reality Contact V18	.6297	62	.000*

TABLE 40 (Continued)

Correlation Between Physical Strength
and Other Variables in the Burks' Scales

Category	Correlation Coefficient	Cases	Level of Significance
Poor Sense of Identity V19	.4451	62	.000*
Excessive Suffering V20	.4077	62	.001*
Poor Anger Control V21	.1010	62	.435
Excessive Sense of Persecution V22	.2432	62	.057
Excessive Aggressive- ness V23	.0287	62	.825
Excessive Resistance V24	.1828	62	.155
Poor Social Conformity V25	.3280	62	.009*

*Correlation is significant at the .05 level

Table 40 illustrates correlation between poor
physical strength and other variables in the Burks'
Scales. The level of significance was less than .05
between most of the variables; therefore, a

significant difference does exist between poor

physical strength and the following variables on the

Burks' Scales.

Excessive self-blame	Poor intellectuality
Excessive anxiety	Poor attention
Excessive withdrawal	Poor reality contact
Excessive dependency	Poor sense of identity
Poor physical strength	Excessive suffering
Poor ego strength	Poor social conformity
Poor coordination	

TABLE 41

Correlation Between Teacher Assessment of
Children at the Beginning of the Year
and the Burks' Scales

Category	Correlation Coefficient	Cases	Level of Significant
Excessive Self-Blame V8	-.3000	62	.018*
Excessive Anxiety V9	-.6440	62	.000*
Excessive Withdrawal V10	-.5354	62	.000*
Excessive Dependency V11	-.5551	62	.000*
Poor Ego Strength V12	-.5978	62	.000*
Poor Physical Strength V13	-.5442	62	.000*
Poor Coordination V14	-.4065	62	.000*
Poor Intellectuality V15	-.6137	62	.000*
Poor Attention V16	-.5608	62	.000*
Poor Impulse Control V17	-.2180	62	.089
Poor Reality Contact V18	-.5981	62	.000*

TABLE 41 (Continued)

Correlation Between Teacher Assessment of
Children at the Beginning of the Year
and the Burks' Scales

Category	Correlation Coefficient	Cases	Level of Significant
Poor Sense of Identity V19	-.4907	62	.000*
Excessive Suffering V20	-.5065	62	.000*
Poor Anger Control V21	-.2589	62	.042*
Excessive Sense of Persecution V22	-.2726	62	.032*
Excessive Sense of Aggressiveness V23	-.2859	62	.024*
Excessive Sense of Resistance V24	-.3017	62	.017*
Poor Social Conformity V25	-.4326	62	.000*

*Correlation was significant at the .05 level

Table 41 represents the correlation between the
teacher assessment of children at the beginning of the
year and the Burks' Scales. There is a significant
difference between the teacher assessment at the

beginning of the year and the Burks' Scales
pinpointing the following variables: excessive
self-blame, excessive anxiety, excessive withdrawal,
excessive dependency, poor ego strength, poor
physical strength, poor coordination, poor
intellectuality, poor attention, poor reality
control, poor sense of identity, excessive suffering,
poor anger control, excessive sense of persecution,
excessive aggressiveness, excessive resistance, and
poor social conformity.

TABLE 42

Correlation Between Race and the MRT
and Standards of Learning

Category	Correlation Coefficient	Cases	Level of Significance
MRT V30	.3261	62	.010*
Standards of Learning Reading V31	.3015	62	.017*
Math V32	.2962	62	.019*

*Correlation is significant at the .05 level

Table 42 shows a correlation between race and the MRT and the Standards of Learning. The level of significance was .010 for the MRT. On the Standards of Learning the level of significance in reading was .017 and math .019. There is a high correlation between race, the MRT and reading and math Standards of Learning.

TABLE 43

Correlation Between Age, the MRT
and the Standards of Learning

Category	Correlation Coefficient	Cases	Level of Significance
MRT V30	-.2246	62	.079
Standards of Learning Reading V31	-.3920	62	.002*
Math V32	-.2880	62	.023*

*Correlation is significant at the .05 level

Table 43 illustrates the correlation between age, the MRT and the Standards of Learning. The level of significance between age and the MRT is .079 which means that there is no significant difference between age and the MRT. The level of significance between age and reading is .002 and age and math is .023. This is interpreted as indicating a high level of significance between age and reading and age and math.

The findings on this table are in agreement with
Ilg and Ames (1965) that age does make a difference
in achievement.

TABLE 44

Correlation Between Race and Reading,
Math and Spelling on the WRAT

Category	Correlation Coefficient	Cases	Level of Significance
Reading V2	−.0036	62	.978
Math V3	.3922	62	.002*
Spelling V4	.0811	62	.531

*Correlation is significant at the .05 level

Table 44 represents the correlation between race and the WRAT in reading, math and spelling. There is a high correlation between race and math on the WRAT.

TABLE 45

Correlation Between Sex and Reading,
Math and Spelling on the WRAT

Category	Correlation Coefficient	Cases	Level of Significance
Reading V2	-.0423	62	.744
Math V3	.1141	62	.377
Spelling V4	.0349	62	.788

*Correlation is significant at the .05 level

Table 45 depicts the correlation between sex and reading, math and spelling on the WRAT. The level of significance was .744 in reading, .377 in math and .788 in spelling. There was no significant difference between sex and reading, math and spelling of the WRAT.

Spillman and Lutz, (1985) contend that sex does make a difference in achievement. This research does make a difference in achievement, and does not correlate with their findings.

TABLE 46

Correlation Between WRAT Scores in Reading
and Math and Scores in Reading and Math
on the Standards of Learning

Category	Correlation Coefficient	Cases	Level of Significance
Reading V2	.2280	62	.075*
Math V3	.2640	62	.038*

*Correlation is significant at the .05 level

Table 46 demonstrates the correlation between scores in reading and math on the WRAT and scores in reading and math on the Standards of Learning. The level of significance between reading on the WRAT and reading on the Standards of Learning is .075. The level of significance between math on the WRAT and math on the Standards of Learning was .038. There is a high level of significance in the math on both tests.

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