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THE LONG-TERM EFFECTIVENESS OF THE READINESS KINDERGARTEN PROGRAM, AS DETERMINED BY STUDENTS' ACADEMIC ACHIEVEMENT AND SOCIAL-EMOTIONAL DEVELOPMENT

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By

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ABSTRACT

THE LONG-TERM EFFECTIVENESS OF THE READINESS KINDERGARTEN PROGRAM, AS DETERMINED BY STUDENTS' ACADEMIC ACHIEVEMENT AND SOCIAL-EMOTIONAL DEVELOPMENT

By

Sharon K. Devereaux

The purpose of this research was to examine the long-term effectiveness of the readiness kindergarten. Specifically, does a "year of growth" in a readiness kindergarten have a positive effect on children's subsequent school achievement and social-emotional development?

The sample comprised 287 children who entered school in September 1982 in two Michigan school districts. For purposes of the study, these youngsters were divided into three groups: children who were recommended for and attended regular kindergarten, children who were recommended for and attended readiness kindergarten, and children who were recommended for readiness kindergarten but entered regular kindergarten.

Sources of data were the groups' third-grade Metropolitan Achievement Test subscores in reading, math, and language and their scores on the subscales of Harter's Self-Perception Profile (scholastic, social, athletic, physical, behavioral, and global

self-worth), which was administered during the students' sixth year of elementary school.

Children who were recommended for and attended regular kindergarten (Group 1) had significantly higher scores in math, reading, and language achievement than did those who were recommended for and attended readiness kindergarten (Group 2). No statistically significant differences in achievement were found between children who were recommended for readiness kindergarten but attended regular kindergarten (Group 3) and the other two groups.

Group 2 had a significantly higher score in self-perception of athletic competence than did Group 1 or Group 3. No statistically significant differences were found in the groups' scores on the remaining measures of social-emotional development.

The achievement scores, therefore, indicated that the at-risk students who were given an extra year of school were no better off academically than the equally at-risk students who were placed in regular kindergarten. In addition, on five of the six measures of social-emotional development, at-risk students who had an extra year of school did not differ significantly from those who did not. The extra-year students were significantly higher in only one domain of the self-perception survey, athletic competence.

Based on these findings, it can be concluded that an extra "year of growth" in readiness kindergarten does not have a significant positive effect on subsequent academic achievement or social-emotional development.

In memory of my father, John Joseph Devereaux.

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CHAPTER I

INTRODUCTION TO THE STUDY

Introduction

Throughout the United States, readiness kindergartens are a rapidly growing phenomenon. In Michigan alone, more than 228 school districts have readiness kindergartens. These kindergartens are for five year olds who have been locally screened and determined to be "developmentally immature" or not ready for regular kindergarten. Following an academic year in readiness kindergarten, these same students are required to complete a year of regular kindergarten before enrolling in first grade (Meisels, 1987).

When a school district first adopts a readiness kindergarten program, the percentage of five year olds recommended averages 17% to 19%. This percentage, however, escalates each year. At present, in Oakland County the average is between 40% and 50%, in Avondale it is 70%, and in Niles it is as high as 90%. That is, 90% of all new entrants are determined "developmentally not ready" for formal kindergarten instruction (Lessen-Firestone, 1987).

Background

Once viewed primarily as a year of transition from family to social life, kindergarten has undergone a dramatic change in the past 20 years. With 95% of five year olds enrolled, kindergarten is

now considered the beginning of the elementary program (Sava, 1987). According to the Educational Research Service, most kindergartens emphasize academic work (22%) or preparation for it (63%) (Karweit, 1988). The curriculum has escalated so much that, today, kindergarten resembles the first grade of a few years ago (Shepard & Smith, 1986).

The Problem

There are many forces affecting the kindergarten that have influenced its dramatic transition in the past 20 years and brought about initiation of the readiness kindergarten. These forces are societal, political, and at times economic.

Societal Influences

The perceived failure of the public school system to provide adequate instruction in basic skills and the public's demand for accountability have led to such solutions as the use of minimum competency tests and instruction in academic skills at the earliest possible moment (Spodek, 1981). Thus, with this curriculum "shove down," the kindergarten has become more and more academic.

Both state and district testing programs often start at third grade or earlier, and giving children an extra year in readiness kindergarten has been cited as a way to raise their test scores. This practice is, in effect, a type of "academic redshirting" (Pipho, 1988). Redshirting is not limited to academics with regard to the readiness kindergarten. Many middle-class suburban parents have chosen to have their boys spend an extra year in the readiness

kindergarten to give them an athletic edge over their classmates (Lessen-Firestone, 1987).

Political Influences

The National Education Association (NEA) has strongly supported early childhood education programs in its position statements. The Association has urged that federal legislation be enacted to assist in funding, that these programs be offered primarily through the public schools, and that they culminate in mandatory kindergarten attendance (NEA, 1986). Among other educational motives, the future employment of their constituents is an obvious consideration influencing this position. With more programs in existence in the public schools and greater numbers of children being served, teacher employment in the United States would also have to increase.

Economic Influences

Of the 228 school districts in Michigan that have readiness kindergartens, the vast majority are "in-formula" districts. In 1984, the state-aid reimbursement for readiness kindergartens was $3,430,933 (Michigan State Board of Education, 1984). The cost to Michigan taxpayers to provide a readiness year of kindergarten for "at-risk" children is approximately $3,000 per child. This is an expensive solution to the problem of escalating expectations in kindergarten (Shepard & Smith, 1985).

Purpose of the Study

The purpose of this study was to examine the long-term effectiveness of the two-year kindergarten program. The writer sought to determine whether the readiness kindergarten provides sufficient academic and social-emotional benefits to warrant children's being removed from their peer group and spending an extra year in school at an increased cost to the taxpayer.

The researcher gathered and analyzed data from three groups of children to discover the effects of the readiness kindergarten on school achievement and social-emotional development. The three groups examined were:

1. Children who entered school in September 1982 and were recommended for and attended regular kindergarten.

2. Children who entered school in September 1982 and were recommended for and attended a readiness kindergarten.

3. Children who entered school in September 1982 and were recommended for but did not attend a readiness kindergarten. These children attended regular kindergarten.

Throughout the study, whenever the phrase "three groups" is used, it refers to the above-mentioned groups.

Data were gathered from the ten elementary schools the students attended in two neighboring in-formula school districts in north Oakland County, Michigan. School achievement was assessed by using the Metropolitan Achievement Tests at the beginning of the students' third-grade year of school. Social-emotional development was determined by administering the Self-Perception Profile for Children

at the end of the students' sixth year of elementary school. (The sixth year of elementary school does not indicate a specific grade; rather, it is merely the students' sixth year of school, regardless of what grade they are in.)

Importance of the Study

Much controversy exists among researchers, administrators, teachers, and early childhood educators regarding the issue of the readiness kindergarten. The Gesell Institute (1985), one of the foremost advocates of the two-year kindergarten program, has pointed to the need for further research to examine the effectiveness of this and other developmental-placement programs. Researchers on early childhood would agree that readiness kindergarten programs have not been systematically studied or evaluated to determine their effect on long-term development (May & Welch, 1984; Meisels, 1987; Shepard & Smith, 1986).

At the state level, the Michigan State Board of Education has acknowledged the need to analyze the advantages and disadvantages of readiness kindergartens. As previously mentioned, state funding for such programs was $3,430,933 in 1984 alone. Given the controversy and concerns surrounding readiness kindergarten programs, school districts will need to evaluate (if they have not done so already) whether the two-year kindergarten program is an effective solution to the problem of escalating expectations in kindergarten. Can positive effects be objectively demonstrated to justify taking a

child away from his/her peers to spend an extra year in a readiness kindergarten?

This study was undertaken to provide long-term data on the academic and social-emotional effects of a two-year kindergarten program. It was intended to help meet the need for research findings that can be used to make valid decisions regarding the continuation of readiness kindergartens.

Hypotheses

The effectiveness of the readiness kindergarten program was the focus of this study. Specifically, the writer sought to determine whether a "year of growth" in a readiness kindergarten had a positive effect on children's subsequent school achievement and social-emotional development. The following hypotheses, stated in the null form, were formulated to guide the analysis of data for this study.

Hypotheses Regarding Achievement

Hypothesis 1: There is no statistically significant difference in the reading achievement scores of the three groups of students at the third-grade level.

Hypothesis 2: There is no statistically significant difference in the math achievement scores of the three groups of students at the third-grade level.

Hypothesis 3: There is no statistically significant difference in the language achievement scores of the three groups of students at the third-grade level.

Hypotheses Regarding Social-Emotional Factors

Hypothesis 4: There is no statistically significant difference in the self-perception scores in scholastic competence of the three groups of students in their sixth year of elementary school.

Hypothesis 5: There is no statistically significant difference in the self-perception scores in social acceptance of the three groups of students in their sixth year of elementary school.

Hypothesis 6: There is no statistically significant difference in the self-perception scores in athletic competence of the three groups of students in their sixth year of elementary school.

Hypothesis 7: There is no statistically significant difference in the self-perception scores in physical appearance of the three groups of students in their sixth year of elementary school.

Hypothesis 8: There is no statistically significant difference in the self-perception scores in behavioral conduct of the three groups of students in their sixth year of elementary school.

Hypothesis 9: There is no statistically significant difference in the self-perception scores in global self-worth of the three groups of students in their sixth year of elementary school.

Limitations and Assumptions

1. The study was limited to 287 students in ten elementary schools in two neighboring school districts, who had been screened for kindergarten before the 1982-83 school year. Attrition had reduced the original population of 600. However, the resulting group of 287 students was deemed sufficient for this study. Data were gathered during the 1987-88 school year.

2. The major sources of data were the Metropolitan Achievement Test and the Self-Perception Profile for Children.

3. The writer assumed that individual students performed within their ability range while taking the Metropolitan Achievement Test.

4. The writer also assumed that individual students responded to the Self-Perception Profile for Children with their true perceptions regarding themselves.

5. The achievement test had already been administered by the students' classroom teachers during the fall of their third-grade year.

6. The researcher administered the self-concept instrument for all testing sessions in spring 1988.

7. The researcher did not evaluate the screening instruments, process, or the qualifications of teachers who conducted the kindergarten screening in spring 1982.

8. For children initially screened as "borderline students," the researcher ascertained what the final recommendation for those children's placement had been by (a) noting their placement in the readiness kindergarten, (b) perusing cumulative records indicating final recommendations, or (c) interviewing the students' kindergarten teachers.

Definition of Key Terms

The following terms are defined in the context in which they are used in this dissertation.

Academic achievement. The skill or knowledge attained by an individual in one or more fields, as measured in this study by the Metropolitan Achievement Test (reading, math, and language).

Academic curriculum. The cognitive activities and programs offered in a school.

Development. Appropriate behavior by age level in areas such as motor skills, oral language, cognition, social-emotional conduct, auditory discrimination, visual discrimination, and self-help skills.

Developmental placement. Based on the belief that a child will not be successful in learning until he/she has reached a requisite state of development. Therefore, the child's developmental age is determined by a screening test, which is then used to determine school placement and promotion (May & Welch, 1984).

Developmental screening. Testing used to determine the "behavioral age" of young children and hence whether they are at the appropriate developmental level to begin the regular school curriculum.

In-formula district. A school district that receives funding from the State Department of Education; such funding is based on the number of pupils enrolled in a given school year and the number of mills levied by the district.

Kindergarten readiness screening. Testing used by the school to determine a child's readiness to begin formal instruction.

Learning readiness. The curiosity to learn new things; children are born with learning readiness.

Readiness kindergarten. A half-day kindergarten designed for children who will be five years old by December 1 of the enrollment year but who have been determined to be "not ready" for the regular

kindergarten program; sometimes known as "young fives," "developmental kindergarten," or "junior kindergarten" (Michigan Department of Education, 1984).

Regular kindergarten. A half-day kindergarten program for children who will be five years old by December 1 of the enrollment year (Michigan Department of Education, 1984).

Retention. Student involvement in a grade level a second time for the purpose of dealing with academic deficiencies or for correct developmental placement. In this study, the year spent in the readiness kindergarten was considered a type of retention because the student had to spend another full year in regular kindergarten.

School readiness. The ability to cope with the school environment physically, socially, emotionally, and academically, without undue stress or strain.

Social-emotional benefits. Positive and constructive feelings about one's self and others, as well as how one relates to others; measured in this study by the Self-Perception Profile for Children.

Two-year kindergarten. A program that may include a readiness kindergarten for students determined "unready" for formal kindergarten instruction, followed by regular kindergarten; repeating regular kindergarten; or a pre-first grade for students judged not ready for first grade. The two-year kindergarten program addressed in this study was the readiness kindergarten followed by regular kindergarten.

Summary and Overview of the Dissertation

> In Michigan, as in many states, we are faced with a problem that directly affects children upon public school entry. The issue that surfaces is how to provide an early educational program that is challenging, enriching, and developmentally appropriate. (Michigan State Board of Education, 1984)

School districts offering alternative kindergarten programs such as readiness kindergartens are attempting to provide a more appropriate match between the educational program and the developmental and educational "maturity" level of the children. Although this type of program is a sincere response to the pressures of the academically oriented curriculum of kindergarten, the researcher postulated that providing children an extra year in kindergarten does not solve the problems it was intended to solve. That is, children given this "gift of time" will not show academic or social-emotional advantages over equally at-risk youngsters who have not been given the extra year.

This dissertation is divided into five chapters. Chapter I contained an introduction to the study, a background and statement of the problem, purpose and importance of the study, hypotheses, limitations and assumptions, and definitions of key terms. Chapter II contains a review of literature related to this research. The focus is on the historical development of the American kindergarten, child development (physical, cognitive, and social-emotional), kindergarten crises, alternative kindergartens, and research findings pertinent to this study.

Chapter III contains a description of the design, methodology, and procedures followed in the study. The population and sample are

described. The data-collection procedures are detailed, and the statistical methods used in analyzing the data are explained.

The findings are presented and interpreted in Chapter IV. Chapter V includes a summary of the study, major findings, conclusions drawn from the findings, recommendations, and suggestions for further research.

CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCH

Introduction

The review of related literature is divided into five major sections. The historical development of the American kindergarten is discussed in the first section. The physical, cognitive, and social-emotional aspects of child development are discussed in the second section. Kindergarten crises are the topic of the next section, which includes a discussion of the readiness kindergarten. In the fourth section of the chapter, research findings pertinent to this study are examined. The chapter concludes with an overall summary.

Historical Development of the American Kindergarten

One hundred thirty-three years ago, the kindergarten was introduced into the United States. Since that time, many changes have come about in the concept of kindergarten education (Spodek, 1981). The first kindergartens were based on the philosophy and pedagogy of their German founder, Friederich Froebel.

> The Froebelian kindergarten combined a religious philosophy of striving for unity of man with God with a belief in the purity of the child's spirit as an inner force for development. Froebel believed that children needed the kind of careful guidance and nurturing that are neither available at home nor provided in formal school later. (Cohen & Rudolph, 1977, p. 4)

Froebel's kindergarten included such elements as play, special songs and games, construction of materials that had symbolic meaning as well as manipulative value, practice of various tasks like gardening, and nature study. Creativity and physical involvement with play materials were two other important components of the Froebelian kindergarten (Cohen & Rudolph, 1977).

The First American Kindergarten

Margaret Schurz established the first kindergarten in the United States in Watertown, Wisconsin, in 1856 (Snyder, 1972). Although the first public school kindergarten was established 17 years later in St. Louis, Missouri, it was a long time before kindergartens were to receive widespread acceptance in the public schools. This was because of the conflict that existed between the philosophy underlying elementary education and the philosophy underlying the kindergarten (Spodek, 1986). Gregory described this conflict in 1908:

> In passing from the kindergarten to the primary school, there is a break. Do what you will to soften the change, to modify the break, it still remains a break. Three general methods of dealing with a difficulty have been employed: (1) To provide a connecting class to take the child out of his kindergarten habits and introduce him to those of the primary school: in the words of some teachers, "to make him over." (2) To modify the kindergarten and make it more nearly resemble the primary schools. (3) To modify the primary school to make it more nearly resemble the kindergarten. To these might be added a fourth: To do a little bit of each. (p. 22)

During that era, kindergartens frequently served other than secular educational purposes. A number of churches considered kindergarten a valuable means of carrying on religious work and

incorporated kindergartens into their activities (Spodek, 1986). At the same time, many kindergartens were operated by private philanthropic organizations in response to problems accompanying massive immigration and city slums (Day, 1988). These organizations included the Women's Christian Temperance Union, labor unions, and private businesses (Spodek, 1986).

As kindergartens became diversified, their practices reflected the sponsors' purposes. Church-related kindergartens taught religious precepts, whereas settlement-house kindergartens were concerned with meeting social service needs. Confusion between education and philanthropy was evident (Spodek, 1982).

The Kindergarten and Progressivism

In the early years of kindergarten development in the United States, good practice was determined by adherence to Froebel's conception of the kindergarten. However, before the end of the nineteenth century, the evolving field of child study as well as the progressive education movement came to the attention of kindergarten educators. Practitioners soon began to modify their classroom activities, revising and transforming Froebel's prescriptions (Weber, 1984).

The child-study movement originated in the United States under the leadership of G. Stanley Hall. Hall (1901) suggested that education be consistent with children's minds, rather than reflect adult thought; he believed that the emotional rather than the intellectual life of the young child was of greater value. Hall

criticized Froebelian kindergarten theory as being superficial and based on fantasy. He proposed that young children needed large, bold movements rather than the sedentary requirements of the Froebelian symbolic materials and asserted that free play could serve their developmental needs.

John Dewey, one of the prominent leaders of the progressive education movement, also suggested a form of early childhood education that was much different from that of Froebel. Dewey (1900) called for educational activities that would support continuity in children's growth and would be connected to children's life in the home and community rather than a set of abstract ideas symbolized in manipulative materials.

Both Dewey and Hall appreciated the philosophy underlying the Froebelian kindergarten but criticized the limitations of its practice. Dewey respected the fact that Froebel had rooted the education of children in their activities, valued social learning, and believed that children gained knowledge through productive and creative activities. Hall credited Froebel with developing a form of education based on children's play and with pointing to recapitulation theory as the basis for understanding the development of children (Ross, 1976).

Thus, during the first third of the twentieth century, kindergarten practice in the United States underwent a complete reconstruction. In a general sense, Froebelian principles remained, but kindergarten became more reflective of children's lives at home and in the community, and kindergarten methods reflected the

knowledge that was being generated about how children learn and develop. "By the 1930's the transformation was virtually complete" (Spodek, 1986, p. 178).

The Horace Mann kindergarten of the 1930s was viewed as a model for what kindergarten education ought to be. Teachers were seen as being responsible for creating an environment filled with worthwhile activities and for developing a growing classroom organization rooted in the experiences and needs of the children. Experiences were organized around the social sciences, the natural and physical sciences, the creative arts, and the "tool subjects" of reading, writing, spelling, and arithmetic. Materials were provided for physical play, manipulative play, dramatic play, art, and woodworking (Garrison, Sheetz, & Dalgleish, 1937).

The Montessori Method

In discussing the historical development of the kindergarten, it is important to include the major contribution of Maria Montessori to early childhood education. Montessori, an Italian physician, founded the Casa Dei Bambini or children's house, as she called it, in Rome about the turn of the century.

> Montessori, like Froebel, saw the development of the young child as a process of unfolding. She also conceived of education as a self-activity, leading to self-discipline, independence, and self-direction. Unlike Froebel, who was interested in abstract ideas, Montessori viewed the child's perceptions of the world as the basis for knowledge. The senses had to be trained for the child to become more knowledgeable. (Spodek, Saracho, & Davis, 1987, p. 25)

The Montessori movement expanded, first in Italy and then throughout the world; Montessori schools were first established in the United States in the 1920s. Although Montessori schools remained well-established in Europe, most of those in the United States disappeared during the 1930s and 1940s. At the beginning of the 1960s, there was a resurgence of Montessori education in the United States. Montessori schools for children, as well as training programs for teachers, were reestablished (Spodek, 1985).

National Focus on Young Children

From the 1930s through the 1950s, kindergartens tended to be privately operated and were attended by middle- and upper-class children. In these years, the primary function of the kindergarten was to provide a comfortable, child-centered group experience outside the home (Connell, 1987). The curriculum was characterized as having an experiential, social, play orientation. Because this curriculum orientation is rooted in the principles of child development, it is generally referred to as a developmentally oriented curriculum (Bartolini & Wasem, 1985).

All of this changed, however, in the 1960s when, according to Elkind (1986), early childhood education lost its innocence and its special status. He wrote:

> Like elementary and secondary education, early childhood education became a ground on which to fight social battles that had little or nothing to do with what was good pedagogy for children. The formal symbol of this mainstreaming of early childhood education came with the passage by Congress of the Head Start legislation in 1964. For the first time, early childhood programs were being funded by the federal government. (p. 632)

Such events as the launching of Sputnik in 1957, the demise of progressive education, and the publication of books like Why Johnny Can't Read focused public criticism on American education. Elementary and secondary education were already under attack, and, in many ways, early childhood education became a scapegoat of the social movements of this turbulent decade (Elkind, 1986).

During the late 1950s and early 1960s, the curriculum of the American kindergarten began to shift from a developmental to an academic one, oriented toward the achievement of specific learning goals and emphasizing the downward extension of primary education (Bartolini & Wasem, 1985). One explanation for the educational problems of the times was that children were poorly prepared for school. A proposed solution was that early childhood education should be more academically rigorous so that children could progress more rapidly once they entered school.

This solution was strongly based on Bloom's (1964) finding that a young child attains half of his/her intellectual ability by age four. Although many educators at the time regarded Bloom's findings as new and revolutionary, Bloom was simply confirming what investigators during the child study movement had concluded before 1890--that the early years of development are not barren but influence subsequent development (Wesley, 1957).

Jerome Bruner (1960), another social scientist of the time, added credence to this conception of the young child with his claim that "any subject can be taught effectively in some intellectually

honest way to any child at any stage of development" (p. 22). At about the same time, McV. Hunt (1961) presented his idea of the malleability of the intelligence quotient (IQ). This notion was in opposition to the mental testing establishment's supposed advocacy of a fixed IQ. Although McV. Hunt's idea had long been accepted by psychometricians, it, too, helped to build a case for the educational reform movement of the day.

A second concern that educators were attempting to deal with in the 1960s was civil rights, specifically, unequal schooling of minorities. "It wasn't the schools, the argument ran, but the preparation that led to the lower achievement levels of black children. The Head Start legislation was one response to this claim" (Elkind, 1986, p. 632). This strong focus on early childhood education was congruent with the changing lifestyles of middle-class American families.

Since the late 1960s, partly as a result of the women's movement and partly due to the shift in the United States from an industrial to a postindustrial economy, the middle-class value system has changed dramatically. Divorce has become socially acceptable, and divorce rates have soared. More than 50% of American women are employed outside the home, and it is estimated that, by the year 2000, between 80% and 90% of women will be in the work force (Elkind, 1986).

> The truth is that the many changes in our society have not been accompanied by adequate provisions for the out-of-home care of all the young children who require it. Consequently, parents are putting pressure on elected officials to provide more early

> childhood care. This has been the primary motivation for full-day kindergartens, starting school at age 4 and so on. (Elkind, 1986, p. 634)

Elkind (1986) said that another motive for introducing formal instruction in early childhood programs stems from Americans' intuition that technology can alter human potential. With respect to children, this belief is expressed by saying that, because of television and computers, children today are smarter and more sophisticated than ever before. "Technology, however, neither changes human potential nor accelerates human development. Technology extends and amplifies our human potentials, but it does not alter them" (Elkind, 1986, p. 634).

When Head Start was created, fewer than half of the children of kindergarten age were in kindergarten. In states where kindergarten was not part of the public school system, the gap between Head Start and first grade became only too evident. This gap lent cogency to the argument for kindergarten (Tanner & Tanner, 1973).

The national policy of capitalizing on young children's capacity to learn exerted a powerful influence on state educational policy. Although it was not the objective of Head Start and other early childhood programs to get states to include kindergarten in the public school system, nearly one-fourth of all states began kindergartens between 1965 and 1970 (Tanner & Tanner, 1973). "Kindergarten became a part of the public schools in these states because middle class people, the taxpayers, wanted their own children to have the advantages they were providing for the children of the poor" (Tanner & Tanner, 1973, p. 52).

The Contemporary Kindergarten

By 1970, 67% of five year olds in the United States attended kindergarten (Karweit, 1988). From 1970 to 1980, enrollment in the nation's prekindergarten and kindergarten programs increased by 21% --from 4.3 million to 5.2 million. This increase took place despite a 14% decline in the three- to five-year-old population (Frankel & Gerald, 1982).

Today, about 95% of all five year olds are enrolled in kindergarten programs (Sava, 1987), making universal education for five year olds, for all practical purposes, a reality (Day, 1988). Public school programs serve the large majority of kindergarten-aged children. The Department of Education estimates that 2.5 million five year olds are enrolled in public preprimary programs, as compared to 0.5 million in private schools (Center for Education Statistics, 1985). As of 1986, 46 states provided kindergarten programs for more than 90% of the eligible population (Robinson, 1987).

A Major Curriculum Shift

The introduction of formal instruction in early childhood programs has caused a major shift in the kindergarten curriculum. According to Spodek (1981), concern for young children's development and for the creation of programs reflecting their needs and interests seems to be lessening. In its place has emerged a concern for the achievement of specific learning goals. Increased use of standardized achievement and screening tests has intensified the

emphasis on formal instruction and has furthered the curriculum change. The kindergarten seems to have been reconstituted, this time essentially as a downward extension of primary education. Thus, the change from a concern for continuity of development to a concern for achievement has come about.

Despite this shift in emphasis, current approaches to the kindergarten curriculum are not always discrete or distinct, nor are they easily classified as "developmental" or "academic" (Bartolini & Wasem, 1985). In the publication Early Childhood Education in Illinois: Focus on Kindergarten (Illinois State Board of Education, 1980), five popular approaches, from the many available, were described. The first, traditional kindergarten, was represented as a program that focuses on children's social, emotional, and physical development. Traditional kindergarten programs also support the development of modes of expression and preparation for first grade.

The second approach to kindergarten, the Montessori method, is structured so that the child interacts with a prepared environment under the guidance of a Montessori-trained directress. Children use self-correcting materials, which help them develop sensori-motor skills and organize sensory perceptions.

The third approach focuses on behavior analysis. Program goals are defined in terms of observable behaviors related to academic skills and expected social behaviors, rather than attitudes or predispositions.

The fourth approach is identified as direct instruction. This process involves teaching, in a direct manner, academic skills in language, reading, and math through imitation, drill, and association. Social and emotional development are not emphasized in a direct-instruction program.

Piagetian programs are the fifth instructional approach, based on the theories of cognitive development as viewed by Jean Piaget. In these programs, it is believed that children construct knowledge based on experiences. Knowledge conveyed to children is carefully planned and supported to allow intellectual development during each distinct stage. Many of the play activities of the traditional kindergarten are also used, based on Piaget's views.

Bartolini and Wasem (1985) emphasized that some aspects of each kindergarten program may be common to the others, as well. They further stated that, regardless of the formal title or label attached to a program, there has been a shift of emphasis from a developmental orientation to a more academic one. Bartolini and Wasem synthesized the major differences between the developmentally and academically oriented kindergarten, as shown in Table 2.1.

Child Development

As stated earlier, the developmentally oriented curriculum described by Bartolini and Wasem (1985) is based on the principles of child development. Day (1988) cited three of the basic tenets of child development research and practice: "Four- and five-year old children are experiencing rapid and important growth in many

Table 2.1.--Kindergarten curricula: A developmental orientation as compared with an academic orientation.

	Developmental Orientation	Academic Orientation
Teacher:	Plans and organizes learning environment; facilitates learning	Determines and initiates activities; provides direct instruction to class
Pupils:	Have freedom of movement and verbal expression; frequently initiate and determine their own activities	Sit and follow instructions; are responsible for learning concepts present by teacher
Activities:	Children work and play individually or in small self-organized groups; emphasis on learning by doing, problem solving, and discovery learning in informal atmosphere; activities designed to create interest in learning; manipulation of concrete objects in natural/play situations	Same abstract concepts (e.g. numbers, letters, words) taught to all children at the same time and in the same manner; direct, formal instruction of reading, mathematics, and writing; de-emphasis on play
Materials:	Emphasis on manipulation of concrete objects in natural/play situations; paper and pencil materials used sparingly and for child's own creative purposes	Prepared by commercial textbook publishers (e.g., reading series, workbooks); heavy use of paper (e.g., ditto worksheets) and pencils to copy abstract symbols/concepts (e.g., letters, words, and numbers)
Expectations:	Individualized and include language, social/emotional, physical, and cognitive objectives	Emphasis on academic skill achievement; all children expected to learn same academic symbols/concepts

Source: L. A. Bartolini and L. Wasem, The Kindergarten Curriculum. (ERIC Document Reproduction Service No. ED 260 832)

developmental areas, including the cognitive/intellectual, psychosocial, and physical-motor domains" (p. 10). When considering this "rapid and important growth" in the physical, intellectual, and social-emotional development of preschool children, it is essential to remember the differences in growth rates that are known to exist between boys and girls and among individuals of either sex, as well as their interrelationships and implications for early childhood education (Eichorn, 1968).

Physical Development

Skeletal maturity. While a child's bodily proportions are changing and he/she loses the baby look, several internal changes are also taking place. One such change is skeletal maturity, which means that the child's bones become longer, thicker, and harder. This process, termed ossification, begins during the prenatal period and is not complete until late adolescence. Occurring at a rapid rate during the preschool period, ossification enables the child to participate in activities that require strength (Zigler & Finn-Stevenson, 1987).

Brain growth. Another important internal change that occurs during the preschool years is the growth and maturation of the brain, which facilitates the child's acquisition of language skills and his/her ability to master increasingly more complex motor tasks (Zigler & Finn-Stevenson, 1987). The brain acquires 75% of its adult weight by the time the child is two years old; by the time the youngster is five years of age, the brain is 90% of its adult

weight. During the prenatal and infancy periods, brain-weight gains are a result of the increase in the number of neurons. However, weight gains during the preschool years and later reflect an increase, not in the number of neurons, but rather in the size of neurons, due to myelination, as well as an increase in the size of the glial cells that support the neurons (Zigler & Finn-Stevenson, 1987).

Myelination is the process through which nerve fibers become coated with a protective myelin sheath so that their ability to perform their major duties (to send and receive impulses or signals) is enhanced.

> Myelination occurs with use. It is estimated that millions of neurons can be involved in a single experience; thus the more experiences we have, the more myelination occurs and the more quickly signals will travel through the brain. (Cherry, Godwin, & Staples, 1989, p. 34)

Language development. The functional centers for language skills begin to develop early in life, but their maturation takes several years to complete and is associated with myelogenetic cycles, periods during which myelination occurs to particular functional centers within the brain. Lecours (1975) noted that three myelogenetic cycles occur, which seem to be associated with the child's increased language ability. The first cycle, involving the brain stem, starts before birth and is related to the infant's ability to produce sounds. The second cycle starts around birth and continues at a rapid rate until about age four. This cycle is related to the acquisition of language skills during the preschool

period. The third myelogenetic cycle, which involves the upper cortex, is not complete until early adolescence.

In developmentally appropriate kindergarten classes, children are provided with many opportunities to develop language and literacy through meaningful activities: listening to and reading stories and poems; taking field trips; dictating stories; seeing classroom charts and other print in use; participating in dramatic play and other experiences requiring communication; talking informally with other children and adults; and experimenting with writing by drawing, copying, and inventing their own spelling (National Association for the Education of Young Children [NAEYC], 1986).

In academically oriented kindergartens, little time is given to appropriate language development. Rather, reading and writing instruction stress the development of isolated skills, such as recognizing single letters, reciting the alphabet, singing the alphabet song, coloring within predetermined lines, and being instructed in correct formation of letters on a printed line (NAEYC, 1986).

Motor development. Another change that contributes to brain maturation during the preschool years is the myelination of the nerve fibers that are used in the control of voluntary movement. Myelination of these fibers is complete around the age of three or four (Tanner, 1978)--hence the preschool child's increased ability to master fine motor skills such as those required in holding a pencil or tying shoelaces.

> The growth in height that occurs during the preschool years, as well as the changes in skeletal and brain growth, allow the child to experiment with a variety of motor movements and to acquire and gradually refine many motor skills. There are two kinds of motor skills that develop during the preschool years, gross motor skills, which involve the use of large muscles and fine motor skills, which involve the use of small muscles of the hands and fingers. Acquiring proficiency in these skills is one of the most important tasks of the preschool child and it usually occurs in the context of the child's play. (Zigler & Finn-Stevenson, 1987, p. 328)

Practice is an essential element of motor development, and the National Association for the Education of Young Children (NAEYC) (1986) recommended that four and five year olds have daily opportunities to use large muscles, including running, jumping, and balancing. They further recommended daily outdoor activity planned so that children can develop large-muscle skills, learn about the outdoor environment, and express themselves loudly and freely. In addition, the NAEYC suggested that "children should also have daily opportunities to develop small muscle skills through activities such as puzzles, pegboards, cutting, painting, and other similar activities" (p. 10).

In many academic kindergartens today, opportunity for large-muscle activity is limited. Outdoor time is also limited because it may interfere with instruction. Small-motor activity is often confined to writing with pencils and coloring predrawn forms or similar structural lessons (NAEYC, 1986).

If the myelination process occurs at a slower rate in some children (as can be expected) and the children need more time for appropriate language and motor development, the teaching of reading

and writing to these children would be developmentally premature and could result in lowering self-esteem as well as motivation because of the failure that would be experienced (Elkind, 1987).

Hemispheres of the brain. The brain is divided into right and left hemispheres. The right hemisphere, which controls the left part of the body, contains the centers responsible for spatial information and visual imagery. The left hemisphere controls the right side of the body and contains the centers responsible for receiving, processing, and producing language. Thus, the left hemisphere codes input of linguistic descriptions; the right hemisphere codes images. Both of these hemispheres are used most of the time, although some researchers contend that certain people are predominantly left-brained or right-brained. For example, an individual who is good at analyzing situations or problems may be left-brain dominant. This may be an oversimplified description of brain functioning, as left-right distinctions are not absolute. The two hemispheres have differences, but each can sometimes fill in for the other (Zigler & Finn-Stevenson, 1987).

Very young children tend to function as though they have only a right hemisphere until they start developing language skills--between two and four years of age. At four, they may still be doing most of their processing with the right hemisphere, but they have also begun to use the two hemispheres in partnership. Although children at this age learn best through right-hemisphere activities (Cherry et al., 1989), the traditional educational system, including

academically oriented kindergartens, is based on left-hemisphere processing skills.

"Experiences are narrowly focused on the child's intellectual development without recognition that all areas of a child's development are interrelated" (NAEYC, 1986, p. 7). It is certainly an important part of education to concentrate on reading, writing, and mathematics. These are solid left-brain-hemisphere skills, steeped in tradition, without which students would not be able to participate in higher academic pursuits or achieve success in the everyday business world. Traditional education, however, has had little regard for the use of the total brain. Balance can be achieved only by "whole child" development. This means that not only is the child's left or right hemisphere developed, but the whole brain; not only is the brain developed, but the physical self as well; in other words, the whole person is developed (Cherry et al., 1989).

> Effective education is therefore based on the understanding that children's right-hemisphere interaction with the environment stimulates left-hemisphere cognitive processes and that the combination will maximize the learning potential of every child. (Cherry et al., 1989, p. 85)

The following curriculum goals from the NAEYC (1986) are in keeping with the philosophy of whole-child development:

> Experiences are provided that meet children's needs and stimulate learning in all developmental areas--physical, social, emotional, and intellectual.
>
> Each child is viewed as a unique person with an individual pattern and timing of growth and development. The curriculum and adults' interaction are responsive to individual differences in ability and interests. Different levels of ability, development, and learning styles are expected, accepted, and used to design appropriate activities. (p. 6)

Memory. A final point adding credence to whole-brain development in education has to do with memory. Information is not stored as memory in a specific location in the brain (that is, in the left or right hemisphere), but rather as bits and pieces of knowledge about a particular event; experiences may evoke one bit or the whole pattern of one type of information. Thus, it is important that children constantly have new multisensory experiences, presented in a variety of ways, to build their recall and memory. Because different techniques will trigger storage and recall or memory differently in diverse individuals, it is imperative that many approaches be used (Cherry et al., 1989).

The limitations of an academically oriented kindergarten are apparent when large-group, teacher-directed instruction is used most of the time.

> Children are expected to sit down, watch, be quiet, and listen, or do paper-and-pencil tasks for inappropriately long periods of time. A major portion of time is spent passively sitting, listening, and waiting. (NAEYC, 1986, p. 7)

Ocular control. Another pertinent dimension of growth during the preschool years is ocular control. Developing children are learning to adjust their eyes to change focus from far to near and near to far, as needed; they are learning to track objects so that vision can flow horizontally in a smooth rather than jerky manner; and they are learning to bring their eyes to their mid-line without breaking their focus, in order to be able to do close-up tasks such as reading, writing, and even buttoning a sweater. The ocular control required to achieve these tasks is gained through learning

to manage the muscles that surround and control the eyes (Cherry et al., 1989).

> In terms of successful early school experiences, vision is growing increasingly important, since much of what children learn is by way of their visual sense. While 80 to 90 percent of all children continue to be hyperopic, or far-sighted, until age 6, children much younger than that are required to spend most of their time doing activities that require near point containment and mature binocular coordination. (Soderman & Phillips, 1986, p. 71)

Given this visual-development limitation of four and five year olds, the workbooks, ditto sheets, and flashcards of the academically oriented kindergarten are inappropriate for the young learner. However, concrete learning activities, such as dramatic play, blocks, games, puzzles, recordings, art, and music are developmentally appropriate and beneficial to kindergartners (NAEYC, 1986).

Gender differences and similarities. Although boys and girls follow similar patterns in motor development during childhood, some underlying physical differences between boys and girls contribute to differences in performance of motor skills (Zigler & Finn-Stevenson, 1986). During the preschool years, boys, having the advantage of height and strength, are usually better than girls in such gross motor skills as throwing, catching, and hitting. Girls, however, are better than boys at fine motor skills (Tanner, 1978) such as writing, drawing, and skipping, which require coordination and balance rather than strength.

Although his study sample was small, Brierly (1976) found that brain analysis suggested that a difference exists between boys and

girls in the areas responsible for speech in the left hemisphere of the brain. These areas are more advanced in girls age four than in boys of the same age; the speech organs of the girls are also more developed. Thus, girls exhibit superiority in language and earlier left-brain development. In boys, the right hemisphere is more developed; this is the region that facilitates the development of spatial skills. This is seen in boys' general ability to perform better in tasks requiring mechanical and geometric skill and visual-spatial imagery (Soderman & Phillips, 1986).

At every age, girls are more physically mature than boys. Significant skeletal differences exist between boys and girls, and boys' general maturation may lag anywhere from one to two years behind that of girls. The effect of this overall developmental difference is not certain, but Soderman and Phillips (1986) suggested that such lags may also exist in such important areas as control of eye movement, which is reflected in the different norms for boys and girls on several developmental tests of visual-motor integration.

> The preponderance of evidence on gender differences argues conclusively that males across all observed cultures exhibit greater aggressiveness and females greater nurturance, due to differences primarily in three gonadal hormones that act on brain centers: extradiol and progesterone in the female and testosterone in the male. (Soderman & Phillips, 1986, p. 70)

This hormonal difference has obvious implications with regard to behavior in traditional classrooms, where children are expected to sit down, watch, be quiet, listen, or do paper-and-pencil tasks for inappropriately long periods of time (NAEYC, 1986). The

developmental differences between boys and girls should be given serious consideration as early childhood educators strive to meet the challenge of providing learning environments that accommodate a wide range of differences among children.

Cognitive Development

Cognition is the act or process of knowing. Cognitive learning is the acquisition of specific information, whereas cognitive development refers to knowledge of a more general nature. For example, "Washington is the capital of the United States" is a specific piece of knowledge, but this statement cannot be understood without a general framework or schemata that enables a person to know what a capital and the United States are. This framework cannot be taught directly to children, and it takes many years to develop. The framework can only be built by each child, through his/her own mental action (Kamii, 1984).

A considerable amount of research has been conducted on human learning and children's cognitive development. However, no researcher except Piaget has studied the development and nature of human knowledge as an organized whole (Kamii, 1984). For this reason and the fact that Piaget's cognitive theory has had a tremendous influence on contemporary educational research and study, it was used as the framework in this review to describe children's cognitive development.

Piaget's interest in examining thought processes and their developmental changes led him to study changes in how children

process information as they mature. He believed that children's thinking differs in profound and significant ways from adults' thinking and that children's thought processes are modified as they grow and develop. Piaget described children's thought processes at different levels and demonstrated that children are active and self-motivated in creating their own knowledge. He believed that children's thinking abilities follow a consistent developmental pattern, beginning early in life and continuing to maturity (Spodek et al., 1987).

Piaget's stages of cognitive development. Piaget described four levels or stages of cognitive development, as shown in Table 2.2. The age at which a child moves from one stage to the next is not as important as the following aspects of Piaget's stage theory: (a) The order of the stages is invariant; children may move through the stages at different rates, but always in the same order. (b) The development of the stages is cumulative; that is, each builds and expands on the previous stages (Forman & Kuschner, 1977).

The first stage of development is called the sensorimotor stage and encompasses the years from birth to age two. During this time, children come to understand their environment through their own actions. The second stage is that of preoperational thought. Here the child between the ages of two and seven begins to use symbolic representation, including language, and begins to understand the operation of functions. The stage of concrete operational thought, encompassing the years from seven to eleven, is marked by the

child's ability to mentally reverse actions performed in the environment. This ability allows the child to go beyond the stage of mere perceptual appearances and to begin to understand the relationships between two states of an object (operative knowledge). The fourth stage in Piaget's scheme is the formal operational stage. During this stage, beyond age eleven, children begin to think about thinking and to perform operations on operations (Forman & Kuschner, 1977).

Table 2.2.--Piaget's stages of intellectual development.

Age	Stage	Characteristics
Birth to 1-1/2 or 2 years	Sensorimotor	Children develop schemas based on sensory input and bodily motion.
2 to 7 years	Preoperational	Children develop language and other symbolic representations; intuitive thought is not systematic or sustained.
7 to 11 years	Concrete operational	Children deal with logical processes, can deal with only one form of classification at a time; logical thought requires actual physical objects or events.
11 years and beyond	Formal operational	Children reason logically, formulate and test hypotheses, think abstractly.

Implications for early childhood education. Piaget (1962) believed that most of the young child's play behavior reflects the youngster's important work of "equilibration"; that is, by assimilating new information and accommodating existing intellectual structures, the child develops a balance of understanding while investigating people and their environment. Mental activity and parallel physical activity are essential as children construct their systems of knowledge (schemata) in more and more mature ways and become effective, competent, thinking adults.

> While Piaget believed that children regulate their own thinking, his theory suggests an active role for early childhood education. The teacher should not tell children what they should know, either directly or indirectly through audiovisual techniques. Instead, the teacher should use developmentally appropriate activities which allow children to act upon concrete materials and develop conceptual skill. Teachers can ask questions to develop a degree of cognitive conflict, posing issues that force children to think in more mature ways. This approach represents a major shift in theories about what schools can do for young children. (Spodek et al., 1987, p. 82)

In her article "Autonomy: The Aim of Education Envisioned by Piaget," Kamii (1984) stated that, for Piaget, autonomy, both moral and intellectual, was the broad, long-range goal of education. Part of the intellectual component of this goal was that children be alert and curious; come up with interesting ideas, problems, and questions; use initiative in pursuing curiosities; have confidence in their ability to figure things out for themselves; and speak their minds with conviction.

Piaget's beliefs about children's play, their self-directed investigation of their environment and people, their need for

physical as well as mental activity, the value of concrete materials, and finally the teacher's facilitating role in all of this were reflected in the following excerpts from the NAEYC Position Statement (1986):

> Children develop understanding of concepts about themselves, others, and the world around them through observation, interacting with people and real objects, and seeking solutions to concrete problems. Learnings about math, science, social studies, health and other content areas are all integrated through meaningful activities such as those when children build with blocks; measure sand, water, or ingredients for cooking; observe changes in the environment; work with wood and tools; sort objects for a purpose; explore animals, plants, water, wheels, and gears; sing and listen to music from various cultures; draw, paint, work with clay. Routines are followed that help children keep themselves healthy and safe. (p. 10)
>
> Children's natural curiosity and desire to make sense of their world are used to motivate them to become involved in learning activities. (p. 12)

Many academic kindergartens represent the antithesis of these beliefs, stressing the development of isolated skills through memorization and rote learning, such as counting, circling items on worksheets, memorizing facts, watching demonstrations, drilling with flashcards, and looking at maps. Teachers dominate the environment by talking to the whole group most of the time and telling children what to do (NAEYC, 1986).

In considering further implications of Piaget's cognitive theory with regard to the kindergarten, a closer look at the preoperational stage is necessary.

> [Children] are fooled by their perceptions. They do not conserve mass, length, volume, or area after objects have been manipulated. . . . If something "appears" to be more, then it "is" more, as far as they are concerned. They do not conserve.
>
> They tend to center on one aspect of a situation and fail to consider others. Lay 10 blue and 10 red plastic poker chips out. Have the blue chips extend over a longer distance than

> the red chips. . . . The preoperational child will tell you there are more blue chips. . . . Preoperational children cannot do multiplicative classifications.
>
> They often lack the ability to reverse actions and follow them back to their beginning--for example, to take down a structure in the reverse order of its construction.
>
> They are not able to follow transformations. They see static beginnings and endings, but cannot follow dynamic changes. (Harp, 1987, p. 213)

Because preoperational children lack ability in reversibility and transformations, one must question the undue challenge they are being given when asked to deal with parts to wholes to parts in working with sounds in words, sounds in isolation, and meanings of words. Preoperational children may have difficulty remembering the meaning of a word while doing graphophonic analysis. In fact, graphophonic analysis may be a meaningless task for the preoperational thinker (Harp, 1987). Thus, asking children at this stage of development to learn phonics may be an inappropriate task and one that is both difficult and discouraging.

At the conclusion of their study regarding cognitive tasks and the relationship of such tasks to reading readiness, Reiff, Cannella, and Perry (1979) recommended using appropriate concrete manipulative objects:

> To stimulate perception of letters, a child could experiment with sandpaper, flannel, clay or paint. Visual imagery could be enhanced by making patterns with colored blocks, or patterns made from popsicle sticks. (p. 239)

Kirkland (1978) and Ribovich (1978) argued that those concerned about cognitive development and reading should design programs that would expose preoperational children to a variety of experiences with a wide assortment of reading materials (bulletin boards, school

mail, notes, student writings). Then the children would draw their own conclusions about print rather than always being told how print works.

Harp (1987) suggested that if educators paid greater attention to young children's cognitive style and modified the curriculum along developmental lines, phonics instruction would be delayed until children were known to be concrete operational in their cognitive development.

It is the myelination process within the brain that is progressively occurring and fosters the cognitive development from one stage to another. Given this consideration, Johnson's (1982) warning is pertinent:

> If we present a child with learning tasks prior to the myelination of the areas needed to handle these tasks, we may be forcing the child, in its efforts to perform, to use less appropriate neural networks. By asking the learner to perform before the appropriate area is developed, we may be causing the failure and frustration seen in many children today. (p. 42)

Social-Emotional Development

Social development usually refers to the child's developing ways of adapting to society's rules of behavior. With young children this means cooperating and taking turns. Socialization is learned; it does not simply result from maturation (Spodek et al., 1987). Emotional development is part of the child's overall development. Individuals adapt to emotions--joy, anger, pain--through everyday experiences. One aspect of total development is the interplay of social and emotional behavior.

Erikson (1963), like Freud, believed that a healthy adult is one who satisfies personal needs and desires while learning to meet the demands of society. Erikson transformed Freud's psycho-sexual stage theory of development into one of psychosocial stages. Erikson theorized that people develop throughout their lives as they interact with their social environment and that all individuals go through eight unique stages during the course of their lives. Each stage features a specific crisis, as shown in Table 2.3. Individuals who are not capable of resolving a particular crisis might move on to the next stage, but they are not capable of resolving the crisis of the new stage until earlier ones are resolved. The crisis in each stage is related to the ego strengths that begin to form at birth and accumulate throughout development.

According to Erikson (1963), this series of psychosocial crises constitutes periods for the realization of opposed personality potentials. At birth these potentials exist as paired opposites, and during the crisis period a person's experience determines which of the two opposed personality potentials will be the stronger. Erikson's model of personality development also describes the kinds of experiences that determine which personality potential will outweigh the other.

> Erikson's work suggests an even more active role for early childhood education. Teachers can help children cope with the initial crisis of their developmental stage. They can also help children develop competencies that will strengthen each individual's ego. (Spodek et al., 1987, p. 81)

Table 2.3.--Erikson's stages of psychosocial development.

Age	Stage	Characteristics
0 to 1-1/2 years	Trust vs. mistrust	Reliance on caregiver, predictability leads to trust in environment; or lack of care leads to basic mistrust.
1-1/2 to 3 years	Autonomy vs. shame and doubt	Environment encourages independence, pride, and sense of self-worth; or doubt and lack of self-esteem result from over-control.
3 to 6 years	Initiative vs. guilt	Ability to learn and to enjoy mastery; or fear of failure and punishment leads to guilt.
6 years to puberty	Industry vs. inferiority	Valuing work, skill, and competence; or feelings of inadequacy and inferiority.
Adolescence	Identity vs. role confusion	Development of individuality; or confusion related to self.
Young adulthood	Intimacy vs. isolation	Commitment to personal relations; or withdrawal from others and self-absorption.
Middle age	Generativity vs. stagnation	Care of next generation, widening interests; or self-indulgence.
Old age	Ego identity vs. despair	Gaining the meaning of one's existence; or disappointment with life and fear of death.

Industry versus inferiority. Because the resolution of these crises is greatly determined by the kind of parenting and schooling a child receives, Elkind (1987) found Erikson's model to be a useful framework for looking at the risks of miseducation. He wrote:

> For Erikson, the elementary school period beginning at ages five and six is the crisis period in the determination of whether the child's sense of industry will become more established than the child's sense of inferiority. During the elementary school period children have to learn habits that they will carry into adult life; getting to school on time, paying attention, doing a good, neat job promptly are part of the sense of industry acquired at this time. On the other hand, if children experience excessive failure in efforts to meet the demands of schooling, their sense of inferiority, of being less able than others, will be enhanced. (p. 136)

Elkind went on to say that the school's contribution to a child's sense of industry depends on the fit or "match" between the pupil's modes of learning and the curriculum. Children are successful and their sense of industry is supported and strengthened when educational practice is tuned to these modes of learning. However, if the methods of instruction presuppose the modes of learning found only in older children, young pupils are more likely to experience failure and frustration, which in turn contribute to a strong sense of inferiority (Elkind, 1987).

Social competence. Developing positive peer group relationships is another important aspect of young children's social-emotional development. Productive, positive social and working relationships with other children close to their age provides the foundation for developing a sense of social competence. Recent research has furnished powerful evidence that children who fail to develop minimal social competence and are rejected or

neglected by their peers are at significant risk to drop out of school, to become delinquent, and to experience mental health problems in adulthood (Asher, Hymel, & Renshaw, 1984; Asher, Renshaw, & Hymel, 1982; Cowen, Peterson, Babigian, Izzo, & Trost, 1973; Gronlund & Holmlund, 1985; Parker & Asher, 1986). Research has also shown that adult intervention and coaching can help children develop better relationships with their peers (Asher & Williams, 1987; Burton, 1987).

> Social competence is promoted in early education classrooms through the availability of interested, accepting, and communicative adults. A healthy social setting also facilitates the development of a positive self-concept of social skills, and of readiness for formal learning. Play serves as an important function in the social-emotional development of young children. (Spodek et al., 1987, p. 120)

> The role of the adult is to facilitate play. This means that the adult must establish an atmosphere conducive to play, provide appropriate materials and facilities, and guide the skill development of the children toward increasing levels of performance. Responsiveness to children's observed behaviors is essential to this role. (Kostelnik, Stein, Whiren, & Soderman, 1988, p. 162)

Self-regulation. Achieving self-control is another part of the young child's social-emotional development. This is often a long and uneven developmental process in very young children. They need all the help they can get from perceptive adults in order to achieve this self-regulation. However, slavish compliance with authority is not the goal.

> Inner self-regulation and the ability to make judicious choices about compliance with rules and regulations in order to maximize one's own and others' peaceful and harmonious social interactions takes much skill and many helpful experiences with adults and peers. (Honig, 1985, p. 50)

Teachers facilitate the development of self-control in children by using positive guidance techniques such as modeling and encouraging expected behavior, redirecting children to more acceptable activities, and setting clear limits. Teachers' expectations should match and respect children's developing capabilities (NAEYC, 1986).

Providing children with many opportunities to develop social skills such as cooperating, helping, negotiating, and talking with the person involved to solve interpersonal problems can greatly enhance their healthy social-emotional development. Teachers need to facilitate this development of positive social skills at all times (NAEYC, 1986).

Educators often assume that in academic kindergartens, because older children can function reasonably well in large groups, this is also true for five year olds. However, group size and ratio of children to teachers is limited in a developmentally appropriate kindergarten, to enable individualized and age-appropriate programming. Five year olds are placed in groups of no more than 25 children with two adults, one of whom may be a paraprofessional, or no more than 15 to 18 children with one teacher (NAEYC, 1988).

Stress in formal school settings.

> Stress is a demand for adaptation. In this broad sense of ours, stress is coincident with life itself. In a narrower, clinical sense, however, stress refers to an excessive demand for adaptation. What is excessive, in turn, depends on both the individual and the demands made. (Elkind, 1986, p. 634)

Although a few children function poorly in school because of the stress they bring from home or because they have lower than

average intelligence, many more simply are not developmentally ready for what is expected of them academically (Kostelnik et al., 1988).

> Such youngsters experience high levels of stress because they lack the intellectual, physical, or emotional resources they need to perform the tasks given them in the classroom. All too often, this mismatch between a child's ability and curricular expectations is blamed on a deficiency in the child rather than in the system. (Kostelnik et al., 1988, p. 265)

Elkind (1986) gave the following concrete example of the excessive demands of formal instruction on young children and the resulting stress:

> The learning of young children is "permeable" in the sense that they do not learn in the narrow categories defined by adults, such as reading, math, science, and so on. . . . When young children make soup, for example, they learn the names of vegetables (language), how to measure ingredients (math), the effects of heat on the hardness/softness of the vegetables (science), and the cross-sectional shapes of the vegetables (geometry). . . . The focus on a specific learning task, as demanded by formal instruction, is thus at variance with the natural mode of learning of the young child. From the viewpoint of formal instruction, the multiple learning potential of the young child is seen as evidence of distractability or the currently more fashionable phrase, attentional deficit. The pressure to focus on one avenue of learning, such as letter or word identification, is very stressful for young children. (p. 635)

Implementation of Developmentally Appropriate Programs for Young Children

One final statement regarding child development appears essential here. In responding to the question "What adjustments do schools need in order to make education more responsive to the needs of young children?" the National Association of Early Childhood Specialists in State Departments of Education (1987) explained:

> Reducing class size, making curriculum less abstract and therefore more related to children's conceptual development, and insisting that only the most appropriately trained,

> competent, and child-oriented teachers are placed in kindergarten programs are among better means to achieving the educational goal of success for all students. (p. 11)

Specifically, "the most appropriately trained, competent, and child-oriented teachers" qualified to work with four and five year olds should have "college-level preparation in Early Childhood Education or Child Development and supervised experience with this age group" (NAEYC, 1986, p. 12).

Kindergarten Crises

"The kindergarten curriculum is so demanding that only the brightest and most mature kindergartners achieve success" (Kostelnik et al., 1988, p. 269). Across the nation, kindergarten children have been rushed into activities (such as reading) that require interneuronal development. When these children fail because their development is not advanced enough to meet the demands, educators often move to "remediation" with them. Because educators have experienced success with some advanced children, they have come to believe that all children can achieve the same mastery if they can only learn to "crack the code." Instead, it is the children themselves who have begun to crack under the pressure (Kostelnik et al., 1988). As the kindergarten curriculum has become more and more inappropriately difficult, high numbers of children have begun to fail kindergarten and first grade. In some school districts in Michigan, the retention rates have been as high as 30% and 40% (Cummings, 1988).

> It seemed natural then to design a program or classroom for the group of children who would be most likely to have difficulty with the traditional kindergarten (or first grade). Rather

> than experiencing failure and retention, these children would have a successful experience and be given an extra year of school to help them get ready for the regular kindergarten or the regular first grade. (Cummings, 1988, p. 28)

Alternative Kindergartens

The readiness kindergarten, sometimes called junior kindergarten, young fives, or developmental kindergarten, is a year-long alternative program for children of legal school age who are not developmentally ready for kindergarten--socially, intellectually, emotionally, and/or physically. Readiness kindergarten is designed to prevent early failure syndrome. Upon completing the readiness year, children enter the regular kindergarten.

Advocates of this alternative program contend that although children placed in the program spend an extra year in kindergarten, they experience daily success. And because these are the children who would most likely have to repeat kindergarten or first grade, readiness kindergarten generally does not add more years to their schooling (Galloway & George, 1986).

> School readiness is much more than intelligence and reading readiness. Readiness encompasses the whole child. It is concerned equally with social, emotional and physical maturity, as well as intellectual ability. It is the foundation upon which all other education is built.
>
> Proper placement of children in educational programs is important to assure that they are mature enough to truly benefit from the experience being offered.
>
> The early years are especially important for developing a healthy self-concept and positive attitudes about school. For some five-year-olds, Developmental Kindergarten is just the right program, at the right time. (Clarkston Community Schools, 1987, p. 1)

The readiness kindergarten is an active, nurturing environment in which children are given the necessary time to learn and grow at

their own pace. The curriculum is delivered through a play setting. A variety of activities are provided to encourage children to explore, experiment, and make discoveries about themselves and their environment. Pupils do not use workbooks in developmental kindergarten; rather, actual hands-on experiences are provided for them (Clarkston Community Schools, 1987).

Readiness Tests

Before entering school, children are screened to determine their developmental placement. This screening usually takes place in spring or in August before the opening of school. Approximately 230 school districts in Michigan have a readiness kindergarten program. Thirty-three different instruments are used throughout the state for screening. The most frequently used are the Gesell, Developmental Indicators for the Assessment of Learning (Dial), Brigance Diagnostic, ABC, and locally developed objective-referenced tests (Michigan State Board of Education, 1984). The two districts in the present study used the Dial and the Gesell School Readiness Screening Test.

One of the foremost advocates of the use of readiness tests to identify "immature" children who should benefit from an alternative kindergarten program has been the Gesell Institute of Child Development (Bear & Modlin, 1987). The Gesell philosophy reflects a maturational theory of development. Behavior is viewed as a function of structure, changing in a patterned, predictable way. The stages through which most behaviors develop are considered to be highly similar from child to child (Meisels, 1986).

According to the maturational theory, behavior is almost entirely the result of maturation. Neither chronological age nor environmental intervention is considered to be highly correlated with developmental age (Gesell, 1954).

> In other words, maturational theory links behavior with preformed, genetically determined biological structures. In the absence of unusual environmental conditions, this theory focuses on "time" as the crucial variable in behavioral change, not environmental stimulation or intervention, but time to grow, mature, and endogenously develop. (Meisels, 1987, p. 69)

Louise Bates Ames (1978) of the Gesell Institute explained that the "main thesis" of the Institute is:

> . . . that behavior age, not age in years or I.Q., should be the basis for determining when children should start school, when they should be promoted and how they should be grouped.
>
> Just how much overplacement does exist in the schools today? We hazard the guess that from one third to one half of the children now attending primary and elementary schools (and maybe more) may be overplaced. (p. 139)

The National Association of Early Childhood Specialists in State Departments of Education (1987) stated that the major problem with kindergarten tests is that:

> . . . of the many available, relatively few meet acceptable standards of reliability and validity. The probability of a child being misplaced based on several widely used tests is fifty percent--the same odds as flipping a coin. . . .
>
> Even when credible, appropriate tests are selected, kindergarten screening and developmental assessment are still uncertain undertakings because:
>
> - Normal behavior of young children is highly variable.
> - Young children are unsophisticated in generalizing from one situation to another and are novices in testing behaviors.
> - Young children may not be able to demonstrate what they know and can do clearly because of difficulties in using pencils or other markers, reading, writing, responding, or certain abstract symbols.
> - Separation anxiety, the time of day the test is administered, and the rapport with the examiner can all distort results, especially with young children.

Concerns of Early Childhood Specialists

Not all readiness kindergartens are based on a Gesellian philosophy. Indeed, most of them have an eclectic approach, but they nevertheless share the same kinds of problems as Gesell-oriented programs do.

> Specifically, these types of programs have not been systematically studied or evaluated. Among the questions that need further exploration are the following: On what basis are children placed in these programs? Are minority or poor children overrepresented in them? Are parents accorded due process in placement? What impact do these programs have on children's long-term development? (Meisels, 1986, p. 72)

Cummings (1988) admitted that one cannot argue with the intention of the programs:

> These young five and transition classrooms seemed to be the kindest thing we could do for children because of the curriculum and expectations of parents and teachers at that time. Most early childhood educators believed, however, that they should be only a band-aid or temporary measure to help children until we addressed the much larger problem of developmentally appropriate curriculum in the primary grades. (p. 29)

Those concerned about school readiness and appropriate early childhood programs include a growing number of state departments of education and national organizations, which are now taking a strong stand against differentiated kindergartens. The National Association of Early Childhood Specialists in State Departments of Education (1987) was one of the first to take a stand and publish its position:

> A number of highly questionable practices have resulted from the trend to demand more of kindergarten children. These practices include: (1) inappropriate uses of screening and readiness tests; (2) denial or discouragement of entrance for eligible children; (3) the development of segregated

> transitional classes for children deemed unready for the next traditional level of school; and (4) an increasing use of retention.
>
> Two predominant considerations underlie these practices. The first is a drive to achieve homogeneity in instructional groupings. Some educators believe that instruction will be easier and more effective if the variability within the class is reduced. There is, however, no compelling evidence that children learn more or better in homogeneous groupings. In fact, most of them learn more efficiently and achieve more satisfactory social/emotional development in mixed-ability groups.
>
> The second is a well-intentioned effort to protect children from inappropriately high demands on their intellectual and affective abilities. When parents are counseled to delay a child's entry or when children are placed in developmental or "readiness" classes to prepare for kindergarten or "transitional" classes to prepare for first grade, it is often because the school program is perceived to be too difficult for those children. In this view, children must be made ready for the program, in contrast to tailoring the program to the strengths and needs of the children.
>
> Delaying children's entry into school and/or segregating them into extra-year classes actually labels children as failures at the outset of their school experience. These practices are simply subtle forms of retentions. Not only is there a preponderance of evidence that there is no academic benefit from retention in its many forms, but there also appear to be threats to the social-emotional development of the child subjected to such practices. (p. 1)

Egertson (1987) stated that serious equity implications are associated with the readiness kindergarten:

> The "unready" children placed in these transition classes are often those who have not attended preschool, whose birthdays occur in the quarter just prior to the entrance date for kindergarten, who come to kindergarten even though prekindergarten testing ostensibly showed they were not ready, or who are boys. Further, this holding out and holding over continues with greater frequency in spite of a substantial body of evidence demonstrating its ineffectiveness and, in fact, its negative psychological, social and academic consequences. (p. 3)

Egertson further described a phenomenon that can be observed in communities that have established readiness kindergartens: Instruction in the regular kindergarten continues to focus on the

more advanced children. And as these youngsters tend to be predominantly older, more and more younger children are labeled "unready" and placed in the readiness kindergarten.

Meisels (1986), too, considered developmental kindergartens to be cause for grave professional concern:

> It signifies that schools are placing such institutional needs as obtaining higher achievement test scores and adopting more academically oriented early elementary curricula ahead of children's needs. To the extent that these priorities deny slowly developing or at-risk children access to public school programs, they are incompatible with child development research, contemporary social policy, and exemplary early childhood practice. Rather than label children, schools should devote their resources to helping teachers fashion individually responsive curricula that embrace a wide range of childhood abilities and readiness levels. (p. 72)

Pertinent Research Findings

One of the most important studies that has been cited to substantiate the value and effectiveness of the readiness kindergarten and other preschool programs is the High Scope Foundation's Perry Preschool study (Schweinhart, Weikart, & Larner, 1986). Findings of this study indicated that early childhood programs can lead to consistent improvement in poor children's achievement throughout schooling, reduce rates of delinquency and arrest, reduce teen-age pregnancy, increase the employment rate at age 19, and decrease the rate of welfare dependency at age 19.

Although the Perry Preschool research findings are impressive, there are not enough similarities between that preschool and the readiness kindergarten to warrant using the empirical data to defend

the effectiveness of this alternative kindergarten program. The Perry Preschool was for three and four year olds who did not undergo a screening process whereby they were removed from the rest of their peer group and placed in a special class for a year. Also, the Perry Preschool curriculum was specific--the High Scope curriculum--whereas the curriculum of the readiness kindergarten varies from district to district and even from school to school within a particular district.

Because the readiness kindergarten is based on the concept of developmental placement, much of the research related to it has focused on this concept. Developmental placement underlies many educational practices and philosophies. Following the work of Gesell and other child development researchers, many educators have accepted the notion that a child will not be successful in learning until he/she has reached a requisite stage of development or until he/she is ready (DiPasquale, Moule, & Flewelling, 1980). To find his/her school years a valuable and nonstressful experience, the child should be developmentally ready; the unready youngster rarely catches up and may show an uneven growth pattern (Gesell Institute, 1982).

Although the developmental theory has gained wide acceptance throughout the United States and is the heart of the readiness kindergarten movement, research on the effect of this philosophy is largely lacking (May & Welch, 1984).

The major study cited by the Gesell Institute to substantiate the developmental placement theory is the Weston study, a

three-year-long research project conducted at Hurlbutt School in Weston, Connecticut. The Gesell Behavior Examination was given to all of the children in kindergarten and in one first-grade and one second-grade classroom in fall 1957. These same pupils were examined again in 1958 and 1959. Findings for kindergartners and first and second graders were approximately the same. In each class, only about one-third of the children were ready for the work of the grade in which their age had placed them; just over one-third were questionably ready, and another one-third were definitely unready. The research findings further indicated that unready children did not in succeeding years "catch up" with those who were ready. At the end of this three-year study, the researchers concluded that age alone is not an adequate basis for determining the time of school entrance and that many children who are legally old enough to begin school are not mature enough in their behavior to do so (Ilg, Ames, Haines, & Gillespie, 1978).

There are two major concerns regarding the Weston study. First, there was no control group; second, the research was conducted in <u>one</u> all-white, middle-class school in Connecticut. Thus, the findings of the Weston study do not offer conclusive evidence supporting the developmental placement theory and the readiness kindergarten.

May and Welch (1984) conducted a study to determine whether early retention based on Gesell developmental placement does affect children's later school performance on standardized tests. Two

hundred twenty-three children were coded as transitional, overplaced, or "buy a year," depending on their scores on the Gesell Screening Test and their subsequent school placement. The children's performance on the full Gesell Developmental Test, the third-grade New York State PEP Tests in reading and math, and the Stanford Achievement Test (SAT) were compared. Children who scored as immature on the Gesell Screening Test and who were retained a year according to the Gesell Developmental Placement Program had the lowest scores on all measures, even though they were almost a year older than children in the other two groups at the time of the PEP and SAT testing.

The results of the May and Welch study contradict the academic rationale for the developmental placement theory. There were no demonstrable positive effects of "buying a year" on children's later academic achievement.

Because a disproportionate number of younger children are in the readiness kindergarten, Uphoff and Gilmore's (1986) research on the academic success of early entrants is pertinent to the present study. In reviewing their own studies and those of other researchers, Uphoff and Gilmore found that the chronologically older children in a grade tended to receive many more above-average grades and were much more likely to score above average on standardized achievement tests. Conversely, the younger children in a grade were far more likely to have failed at least one grade and to have been referred by teachers for learning-disabilities testing and subsequently diagnosed as learning disabled. Uphoff and Gilmore

further found that younger children's academic problems often lasted throughout their school careers and sometimes even into adulthood (Gilmore, 1984; Gott, 1963; Huff, 1984; Mawhinney, 1964; Uphoff, 1985).

It should also be noted that indicators such as grades, referral rates, and retention decisions are influenced by teachers, who might either expect young children to have difficulty or decide not to retain older children (Gredler, 1980).

In a recent kindergarten study by Shepard and Smith (1985) in Boulder Valley, the "age effect" factor was relatively small. They found that first graders who were in the youngest three months of their class scored an average of 9 percentiles below the older pupils in reading and 6 percentiles lower in math. However, this difference disappeared by third grade. Shepard and Smith stated that extra-year programs such as the readiness kindergarten are, in effect, like repeating kindergarten, even when the curriculum is altered from one year to the next. They concluded from the study findings that, by the time children completed first grade, those who had repeated kindergarten did not outperform comparison pupils. Repeaters did, however, have slightly more negative feelings about schools.

Another form of extra-year program is the transition room. For several years, American schools have used this device for the educational placement of young children considered unready for the first grade. The extra-year program, like the readiness

kindergarten, is based on the belief that extra time is the prime variable needed for these children and that they must be separated from the regular class in order to mature emotionally, socially, and intellectually and thus be able to cope with academic tasks (Gredler, 1984).

In her study of transition-room children in a Detroit suburban school district, Bell (1972) found that at-risk children who were placed in the regular first grade made greater achievement gains than did children who were placed in the readiness room.

After statistically controlling for cognitive ability and reading readiness, Talmadge (1981) found that children who had been in a transition room and thus had had two years of school were no better in reading achievement than younger children who had had only one year of school.

One of the most important projects that has been carried out on the effects of transition-room placement was Matthews's (1977) study (Gredler, 1984). "Potential first grade failures" who had been placed in a regular class were found to be achieving at a relatively higher rate in the second and third grades than children who had been retained in first grade. And in the second- and third-grade transition rooms, respectively, the children did not perform at a significantly higher rate than the at-risk students who remained in the regular class.

Finally, in Raygor's (1972) study, initial reading-test differences in favor of transition-room and retained kindergarten

children were not sustained through three and four years of schooling.

Although the previously cited research evidence was concerned with the developmental placement theory and the problem of youngness and/or kindergarten retention, those studies did not deal specifically with the readiness kindergarten. In a July 1988 telephone interview, Robert Lichenstein, a researcher at the Gesell Institute for Child Development, stated that he was aware of only one study that had specifically addressed the readiness kindergarten. That study was conducted in Brevard County, Florida, in 1987.

The program evaluation was designed to report the process and product data on the effectiveness of the developmental kindergarten (readiness kindergarten) and transitional kindergarten-first grade programs. Achievement of children who participated in the readiness kindergarten program was above the national average by the end of first grade. However, many of these pupils continued to experience difficulty with reading and required support from the Chaper I or Exceptional Student Education (ESE) programs.

By the end of second grade, former developmental kindergarten pupils, as a group, outscored pupils who had repeated the basic kindergarten curriculum, in reading and mathematics. However, although the achievement scores of the readiness kindergarten group were higher than the national average and those of pupils who had repeated kindergarten, they were between 11 and 16 percentiles lower than the district averages in reading and math, respectively, in

first grade. They were 10 to 14 percentiles lower in reading and math, respectively, in second grade (Brevard County Public Schools, 1987).

Because the Brevard County study is the only known research to date regarding the readiness kindergarten, and the results of related studies are conflicting, it is clear that research on the academic effectiveness of the readiness kindergarten is both minimal and inconclusive. Considering that this program demands an extra academic year in school for the children involved and considerable tax dollars to support it, further research concerning its benefits or lack thereof would be in the best interest of both pupils and taxpayers.

The social-emotional aspects of the readiness kindergarten and the developmental placement concept in general are major concerns and motivating forces in the continuation and growth of such programs. The issue concerns the stress placed on children when they are asked to perform academic tasks for which they are not developmentally ready. Because of this concern, a large percentage of pupils recommended for the readiness kindergarten are the youngest ones in the class, those who were born between June and November.

Gott (1963) studied 171 California children who were about four years nine months of age at school entrance (Group A) and another 171 youngsters who were about a year older when they entered school (Group B). All were ranked on a 10-point scale measuring

social-emotional development. Gott's results indicated that four times as many pupils in Group A as in Group B were in the lowest rank.

The results of Bell's (1972) research indicated that when scores on a self-concept test were compared, the children who had had an "extra year" in a transition room before first grade showed a loss of self-esteem and self-confidence compared to the at-risk children who were mainstreamed into first grade.

Bertha Campbell (1984), head of the Bureau of Child Development in the New York State Department of Education, said that demanding kindergartens create too much stress and can have damaging consequences. The American Academy of Pediatricians has also expressed concern about the dramatic increase of "stress-related" symptoms being seen in young children today (Soderman, 1984).

Knowing the preceding concerns and the major increase in youth suicides in America during the past 20 years (about the time of the "curriculum shove-down"), Uphoff and Gilmore (1986) decided to conduct a pilot study in Montgomery County, Ohio. They studied all youth suicides (25 years of age and under) occurring in 1983 and during the first half of 1984. Summer children (those born between June and September) made up almost 35% of the total births annually in Ohio. Of the male youth suicides, at least 45% were summer children. The percentage of suicides among females who were summer children was a startling 83%.

When asked, "What do you consider as the strengths of the pilot Developmental Placement Program?" Brevard County's basic

kindergarten and first grade teachers responded: "prevents feelings of failure," "increases feelings of success," "increases social development," and "improves self-confidence." At present, the county is evaluating the social-emotional aspects of this program to see if, in fact, there are significant affective benefits to the readiness kindergarten (Brevard County Public Schools, 1987).

Critics of the readiness kindergarten have a different type of concern about readiness pupils' social-emotional development. As noted earlier, Shepard and Smith (1986) considered the extra year of readiness kindergarten equivalent to retention and found in their Boulder Valley study that, regardless of how well the extra year is presented to the child, he/she still pays an "emotional cost."

Advocates of the readiness kindergarten are quick to point out that this extra year is a "gift of time" (Gesell Institute, 1982), which is offered to prevent failure and avoid the negative effects of grade retention. However, the social-emotional effects of taking children from their peer group and placing them in a special readiness class for an extra year still need to be determined.

May and Welch (1984) commented on this need for further research at the conclusion of their study. They cautioned that, before the developmental placement concept is accepted or rejected, much more research needs to be done that objectively measures the child's self-concept, attitudes toward school, and general social-emotional development.

Summary

Since the kindergarten was introduced in the United States 133 years ago, many changes have come about in the conceptions of kindergarten education. The first kindergartens were based on the philosophy and pedagogy of Friederich Froebel; the first major change modified kindergarten practice to make it more consistent with the principles derived from progressive education and from the emerging field of child development.

From the 1930s through the 1950s, kindergartens tended to be privately operated and attended by middle- and upper-class children. The kindergarten curriculum was characterized as having an experiential, social, play orientation. Because this curriculum orientation is rooted in the principles of child development, it is generally referred to as a developmentally oriented curriculum.

A developmentally oriented curriculum is based on an understanding of the social, emotional, and cognitive development that typically occurs during each stage of a child's life. Because all domains of development are integrated, development is not viewed in discrete parts; rather, the focus is on the development of the "whole child." Given this orientation, failure to attend to all aspects of an individual child's development is often considered the cause of the youngster's failure in school.

A major curriculum shift took place in American kindergartens in the 1960s. Such events as the launching of Sputnik, the demise of progressive education, and the publication of such books as Why Johnny Can't Read focused the spotlight of criticism on American

education. Formal instruction was introduced into the kindergarten, and the shift was from the developmental curriculum to an academic one oriented toward the achievement of specific learning goals, emphasizing the downward extension of primary education.

By 1970, 67% of five year olds in the United States attended kindergarten. Today, about 95% of all five year olds are enrolled in kindergarten programs; the majority of these children are served through public education. As enrollments escalated, so did the academic expectations of the kindergarten. Pressure on children to perform academically became increasingly evident, and more and more kindergartners became at risk of failure.

By the early 1980s, a readiness kindergarten program seemed a viable solution to this failure syndrome and an alternative to parents' keeping their children at home for an extra year. This program gained widespread acceptance, and readiness kindergartens began to open across the country.

The initial phase of the readiness kindergarten program is the screening of children before they enter school to determine their developmental placement. Children judged developmentally unready for kindergarten--socially, intellectually, emotionally, and/or physically--are placed in the readiness kindergarten and given an extra year of school to help them prepare for the regular kindergarten.

Advocates of readiness kindergarten contend that although these children spend an extra year in school, they experience daily

successes, learn and grow at their own pace, and develop a healthy self-concept and positive attitudes toward school. It has been proposed that because these are the children who would most likely have to repeat kindergarten or first grade, readiness kindergarten generally does not add more years to their schooling.

Early childhood specialists are critical of this alternative kindergarten program, asserting that delaying children's entry into school and segregating them into extra-year classes actually labels children as failures at the outset of their school experience. Critics consider these practices simply to be subtle forms of retention. They point to evidence demonstrating no academic benefit from retention, and they question the possible threat to the child's social-emotional development.

The "unready" children who are placed in readiness classes are often those who have not attended preschool, whose birthdays occur in the quarter just before the entrance date for kindergarten, and/or boys, who tend to be more developmentally delayed physically than girls. Critics have also observed that, in communities where readiness kindergartens have been established, the instruction in regular kindergartens continues to focus on the more advanced children, who tend to be predominantly an older group. Thus, more and more younger children are labeled "unready" and are placed in the readiness kindergarten.

The National Association for the Education of Young Children has recommended a developmentally appropriate kindergarten curriculum for all children, one that would meet the wide range of

developmental levels and negate the need for an extra-year readiness kindergarten. This, however, would require reshaping the curriculum in the rest of the primary grades to align it more closely with the developmental philosophy of education.

Although the readiness kindergarten is a well-meaning response to the pressures of the academically oriented regular kindergarten curriculum, it is questionable whether there are sufficient academic and/or social-emotional benefits to warrant children's being removed from their peer group and spending an extra year in school.

Research findings concerning the readiness kindergarten program have been found to be scarce, conflicting, and inconclusive. Further research measuring the positive and/or negative effects of this alternative kindergarten program would be in the best interest of the preschoolers who soon will be entering kindergartens throughout the country, as well as the taxpayers who are financially supporting this controversial program.

CHAPTER III

RESEARCH METHODOLOGY

Introduction

The primary purpose of this study was to determine whether the readiness kindergarten program provided sufficient cognitive and affective benefits to warrant children's being removed from their peer group and spending an extra year in school at an increased cost to taxpayers. Chapter III contains a description of the methodology employed in conducting this study, including the basic design of the research, the study sample, hypotheses, instrumentation, data-gathering techniques, and data-analysis procedures.

Research Design

A quasi-experimental design was used in this study, comparing three predefined groups of pupils over time. The pupils were compared at the beginning of third-grade in reading, math, and language achievement using the Metropolitan Achievement Test (MAT). At the end of their sixth year of school, these same pupils were compared using Harter's Self-Perception Profile for Children. The research design is shown in Figure 3.1, which depicts each step that was taken in carrying out the study.

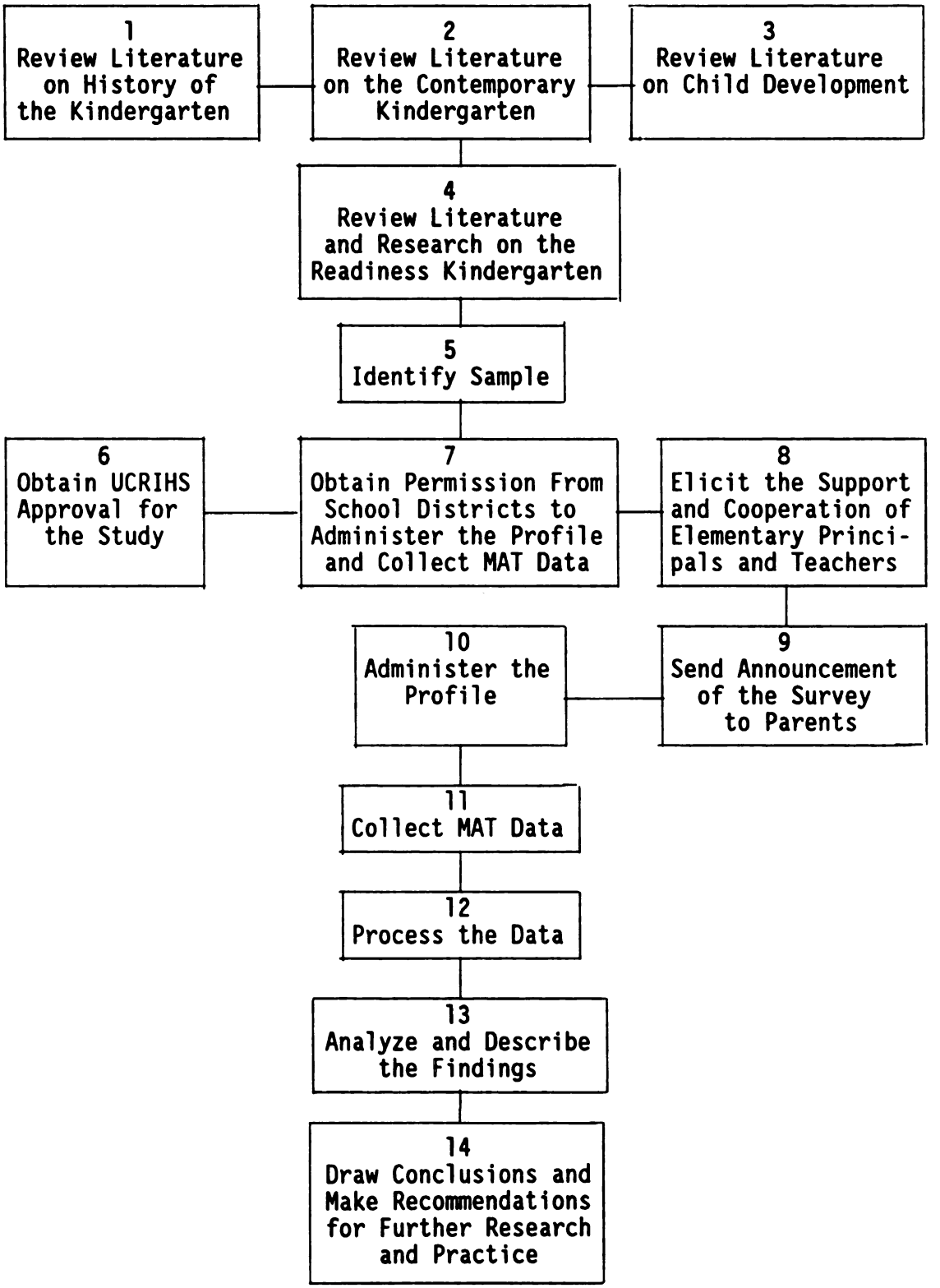

Figure 3.1.--Research design.

The Study Sample

The sample for this study was drawn from two neighboring in-formula school districts in north Oakland County, Michigan. Both districts had K-12 enrollments between 5,000 and 6,000 students, and each had five elementary schools. The student population was predominantly middle-class whites. However, the socioeconomic range was from families receiving Aid to Dependent Children (ADC) to upper-middle-class professionals.

Children selected for the sample were all of the youngsters who had been screened for kindergarten before the 1982-83 school year and had entered one of the two districts' ten elementary schools in September 1982. The original group contained approximately 600 pupils, but when the data were gathered in spring 1988, the group size had decreased to 287 pupils. Some children had moved out of the district, MAT scores for others were incomplete or missing, some pupils had been born before December 1, 1976 (the sample was limited to children born between December 1, 1976, and November 30, 1977--the normal time span for children entering kindergarten in September 1982), some pupils were absent on the day the profile was administered, and still others chose not to participate in the survey.

Sixty-nine percent of the children in the sample were in fifth grade in spring 1988, when the Self-Perception Profile was administered; 31% were in fourth grade because of the extra year spent in the readiness kindergarten or retention at another grade level. The sample comprised the following three groups:

Group 1: Children who had been recommended for and had attended regular kindergarten (n = 190).

Group 2: Children who had been recommended for and had attended a readiness kindergarten (n = 59).

Group 3: Children who had been recommended for but had not attended a readiness kindergarten (n = 38); these children had attended regular kindergarten.

The pupils and groups were identified by the researcher, using the kindergarten screening records for the 1982-83 school year.

Hypotheses

The primary focus of this study was the effectiveness of the readiness kindergarten program--specifically, whether a "year of growth" in a readiness kindergarten had a positive effect on children's subsequent academic achievement and social-emotional development. The following hypotheses were formulated to guide the analysis of data for this study:

Hypotheses Regarding Achievement

Hypothesis 1: There is no statistically significant difference in the reading achievement scores of the three groups of students at the third-grade level.

Hypothesis 2: There is no statistically significant difference in the math achievement scores of the three groups of students at the third-grade level.

Hypothesis 3: There is no statistically significant difference in the language achievement scores of the three groups of students at the third-grade level.

Hypotheses Regarding Social-Emotional Factors

Hypothesis 4: There is no statistically significant difference in the self-perception scores in scholastic competence of the three groups of students in their sixth year of elementary school.

Hypothesis 5: There is no statistically significant difference in the self-perception scores in social acceptance of the three groups of students in their sixth year of elementary school.

Hypothesis 6: There is no statistically significant difference in the self-perception scores in athletic competence of the three groups of students in their sixth year of elementary school.

Hypothesis 7: There is no statistically significant difference in the self-perception scores in physical appearance of the three groups of students in their sixth year of elementary school.

Hypothesis 8: There is no statistically significant difference in the self-perception scores in behavioral conduct of the three groups of students in their sixth year of elementary school.

Hypothesis 9: There is no statistically significant difference in the self-perception scores in global self-worth of the three groups of students in their sixth year of elementary school.

Instrumentation

The Metropolitan Achievement Test

School achievement was measured using the 1978 edition of the Metropolitan Achievement Test (MAT), Elementary Level, which had been administered to the identified pupils when they were in third grade, as part of the school districts' testing programs. The researcher obtained the MAT scores from the children's CA-60 cumulative records.

The MAT is a nationally normed, standardized test, which was developed to provide data concerning pupils' achievement in skill

and content areas of the school curriculum. Separate test batteries were available in three basic skill areas, reading, mathematics, and language, as well as a total basic battery. In addition, test batteries in science, social studies, and a total complete battery score were part of the final testing report. For purposes of this study, the reading, mathematics, and language subtest scores were used to measure and compare the achievement of pupils in the three groups. The content of these subtests is outlined in Table 3.1.

Table 3.1.--Content outline of the MAT, Elementary Level.

Test	Content	Number of Items	
		Form JS	Form KS
READING--60 items in Reading Comprehension measuring these objectives:			
	04 Vocabulary in Context	5	6
	05 Literal Specific	30	32
	06 Literal Global	10	7
	07 Inferential Specific	5	9
	08 Inferential Global	7	4
	09 Evaluative	3	2
MATHEMATICS--50 items measuring these strands:			
	Numeration	10	10
	Geometry & Measurement	13	13
	Problem Solving	10	10
	Operations: Whole Numbers	11	11
	Operations: Laws & Properties	6	6
LANGUAGE--60 items measuring these strands:			
	Listening Comprehension	5	5
	Punctuation & Capitalization	19	19
	Usage	9	9
	Grammar & Syntax	9	9
	Spelling	12	12
	Study Skills	6	6

Table 3.2 shows reliability data for the elementary level of the MAT. Kuder-Richardson Formula 20 reliability estimates and standard errors of measurement in terms of raw scores, scaled scores, and grade equivalent are given (Prescott, Balow, Logan, & Farr, 1978).

Table 3.2.--Reliability estimates (Kuder-Richardson Formula 20) and standard errors of measurement, fall of Grade 4.

Test	Kuder-Richardson r	Standard Error of Measurement		
		Raw Score	Scaled Score	Grade Equivalent
Reading	.96	2.8	14.8	.5
Mathematics	.90	3.1	28.5	.6
Language	.88	3.4	41.5	.9

The validity of an achievement test is defined primarily in terms of content validity. A test has content validity if the objectives and items adequately cover the curriculum areas the test is intended to measure (Prescott et al., 1978). Because the identified school districts chose this achievement test from the many that are available, specifically because its objectives and items best covered the curriculum areas taught in the districts' schools, it was assumed that the MAT had adequate validity for the identified student sample.

Self-Perception Profile for Children

Social-emotional development was measured using Harter's Self-Perception Profile for Children (see Appendix A). The researcher administered the profile to the study sample in April 1988. This scale taps children's perceptions of themselves in terms of (a) scholastic competence, (b) social acceptance, (c) athletic competence, (d) physical appearance, (e) behavioral conduct, and (f) global self-worth. Each of these six subscales yielded a separate score, allowing one to examine the children's perceptions of themselves in the five specific domains, as well as global self-worth.

In constructing this instrument, Harter's (1985a) underlying assumption was that providing separate measures of self-perception in different domains, as well as an independent assessment of one's global self-worth, would yield a richer and more differentiated picture than would a single self-concept score. The content of each domain of the Self-Perception Profile for Children is discussed in the following paragraphs.

Scholastic Competence: This subscale taps the child's perception of his/her competence or ability within the realm of scholastic performance. Thus, all of the items in this subscale are school related.

Social Acceptance: This subscale reflects the degree to which the child is accepted by peers or feels popular.

Athletic Competence: All the items in this subscale tap content relevant to sports and outdoor games.

Physical Appearance: This subscale concerns the degree to which the child is happy with the way he/she looks; likes his/her height, weight, body, face, and hair; and thinks he/she is good-looking.

Behavioral Conduct: This subscale reflects the degree to which children like the way they behave, do the right thing, act the way they are supposed to, avoid getting into trouble, and do the things they are supposed to do.

Global Self-Worth. These items tap the extent to which children like themselves as people, are happy with the way they are leading their lives, and are generally happy with the way they are. Thus, this subscale constitutes a global judgment of one's worth as a person, rather than domain-specific competence or adequacy (Harter, 1985a).

Question format. For each item in the profile, the child is asked to decide which kind of child being described is most like him/her, and then to indicate whether the exmple is "sort of true" or "really true" for him/her (see Figure 3.2).

> The effectiveness of this question format lies in the implication that half of the kids in the world (or in one's reference group) view themselves in one way, whereas the other half view themselves in the opposite manner. That is, this type of question legitimizes either choice. (Harter, 1985a, p. 7)

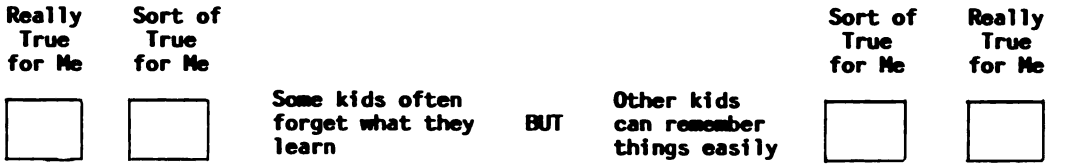

Figure 3.2.--Sample item from the Self-Perception Profile for Children.

Each of the six subscales contains six items; thus the whole profile contains a total of 36 items. Within each subscale, three items are worded such that the first part of the statement reflects high competence or adequacy, and three items are worded such that the first part of the statement reflects low competence or adequacy.

Reliability. The internal-consistency reliabilities for all six subscales, for each of Harter's four samples, are presented in Table 3.3. The reliabilities were based on Cronbach's alpha. From this table it can be seen that the reliabilities are acceptable (Harter, 1985a).

Validity. Harter (1982) emphasized the factorial validity of the Self-Perception Profile. In factoring the revised profile, she included only the five specific domains (scholastic competence, social acceptance, athletic competence, physical appearance, and behavioral conduct) because her 1985 research (Harter, 1985b) revealed that the judgments of global self-worth were qualitatively different from self-descriptions in the five specific domains.

Table 3.3.--Reliabilities of subscales of Harter's Self-Perception Profile for Children.

Sample	Scholastic Competence	Social Acceptance	Athletic Competence	Physical Appearance	Behavioral Conduct	Global Self-Worth
A	.80	.80	.84	.81	.75	.84
B	.85	.80	.86	.82	.77	.80
C	.82	.75	.81	.76	.73	.78
D	.80	.75	.80	.80	.71	.78

Source: Harter (1985).

In Table 3.4, the factor pattern for the five specific subscales is presented (Harter, 1985a). Across Harter's three samples, the factor pattern is very clear, revealing that each of the subscales defines its own factor. The factor loadings for each subscale are substantial. No cross-loading is greater than .18, and the range of average cross-loadings across factors is from .04 to .08. Given the clarity and replicability of this factor pattern across three samples representing grades 5 through 8, Harter concluded that the five domains define distinct factors and provide a differentiated and meaningful profile of self-perceptions for children.

Data-Gathering Techniques

The researcher met with the superintendent of each of the two school districts (or his designee) to obtain permission to conduct the study within their respective districts (see Appendix B). Upon receiving permission from the school districts, the researcher met with the ten elementary principals to elicit their cooperation in obtaining the MAT data from the pupils' CA-60 files and to administer the Self-Perception Profile for Children to their fourth and fifth graders (see Appendix B).

Each elementary principal served *in loco parentis* in giving the required permission for students to complete the Self-Perception Profile. However, before administering the questionnaire to the students, the researcher sent a letter home to the parents in the name of and with the approval of the respective elementary school

Table 3.4.--Factor pattern (oblique rotation) for the Self-Perception Profile for Children.

Item Description	I. Scholastic Competence			II. Social Acceptance			III. Athletic Competence			IV. Physical Appearance			V. Behavioral Conduct		
	A*	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1. Good at schoolwork	.66	.73	.62												
7. Just as smart	.56	.70	.64												
13. Do schoolwork quickly	.60	.69	.64												
19. Remember things easily	.52	.69	.59												
25. Do well at classwork	.60	.65	.67												
31. Can figure out answers	.67	.53	.60												
2. Easy to make friends				.64	.76	.69									
8. Have alot of friends				.78	.68	.70									
14. Easy to like				.45	.67	.41									
20. Do things with alot of kids				.54	.59	.56									
26. Most kids like me				.62	.50	.62									
32. Popular with others				.59	.45	.43									
3. Do well at sports							.78	.81	.80						
9. Good enough at sports							.61	.74	.77						
15. Good at outdoor activity							.60	.73	.49						
21. Better than others at sports							.65	.68	.72						
27. Play rather than watch							.59	.65	.41						
33. Good at new outdoor games							.66	.65	.73						
4. Happy with the way I look										.72	.77	.71			
10. Happy with height & weight										.46	.72	.64			
16. Like body the way it is										.70	.65	.52			
22. Like physical appearance as is										.64	.63	.65			
28. Like face and hair as is										.65	.57	.28			
34. Are attractive or good looking										.56	.33	.49			
5. Like the way I behave													.49	.77	.36
11. Usually do the right thing													.41	.72	.57
17. Act the way supposed													.70	.71	.69
23. Don't get in trouble													.61.	42.	69
29. Don't do things shouldn't													.56	.39	.82
35. Kind to others													.47	.33	.50

Loadings less than .18 not included for the sake of clarity.

*Sample A (6th and 7th Grades)
Sample B (6th, 7th, 8th Grades)
Sample C (5th and 6th Grades only)

principal. This letter announced that the profile would be administered and gave parents an opportunity to contact the school if they objected to their child's participating in the survey (see Appendix B).

The researcher administered the Self-Perception Profile for Children to all fourth and fifth graders in the two school districts. Before students were given the profile, they were asked if they wanted to participate in the survey and were assured that there would be no penalty for nonparticipation.

The profile was given to all fourth and fifth graders in the two school districts, rather than just the identified sample, for two reasons. Primarily, this was done to prevent the identified students from feeling anxious about being singled out to take the survey, perhaps thereby skewing the survey results. Second, it was more convenient for classroom teachers to be free while their entire class took the survey rather than having only a portion of their class during that time, which could not be used for instruction because of the identified students' absence.

The profile took approximately 25 minutes to administer. Only 4 of the 1,600 students surveyed chose not to participate. One of these students was part of the identified sample.

To preserve anonymity, each student was given a copy of the survey with assigned code letters. The researcher had a student list for each classroom with the assigned code letters after each name. Students were asked to fill out the top part of the survey, giving age, birth date, group (room number), and gender. They were

asked not to put their names on the survey. When the surveys were completed, they were randomly collected.

Data from the students' CA-60 files were recorded on the subject file card. These data included the district, school, group, student's code, classroom number, date of birth, gender, grade, kindergarten screening recommendation, retention information, and MAT subscores in reading, math, and language.

The identified students' unscored surveys were attached to the subject file cards matching the student code numbers. The classroom name lists containing the matching code numbers for each student were then destroyed, and the researcher proceeded to score the Self-Perception Profile, thus insuring anonymity for the identified students.

Data-Analysis Procedures

One-way analysis of variance (ANOVA) was the statistical procedure used to test the hypotheses with Scheffe's a priori comparison to determine whether there was any significant difference in the achievement areas or in the social-emotional factors between any two of the three groups. The .05 level was selected as the criterion for significance. Means were the main descriptive statistic used.

The Statistical Package for the Social Sciences (SPSS-X) was used to generate the ANOVA. The MAT subscore percentiles in reading, math, and language were converted to normal curve equivalent (NCE) scores. Through this process, the ordinal scale of

the percentile rank can be converted to an interval scale, which is necessary in using a parametric procedure such as ANOVA with Scheffe's a priori comparison.

The mean for each of the six subscales of the Self-Perception Profile was calculated for each identified student. Each student's profile thus resulted in six subscale means.

Because the purpose of this study was to determine whether the students had been influenced cognitively or social-emotionally by the kindergarten screening and placement, the groups were the independent variable (cause) and the scores from the cognitive and affective instruments were the dependent variables (effect).

ANOVA is used to determine whether the differences among two or more means are greater than would be expected from sampling error alone (Glass & Hopkins, 1985). The procedure has the following advantages:

1. It yields an accurate and known Type I error probability.

2. It is powerful; that is, if the null hypothesis is false, it is likely to be rejected.

3. It can assess the effects of two or more independent variables simultaneously (Glass & Hopkins, 1985).

4. It is also a parametric procedure, which is more powerful than a nonparametric procedure. Thus, the researcher can make inferences from the analyzed data to the larger population, whereas with a nonparametric procedure this is not possible.

The researcher began with an omnibus hull hypothesis that there was no significant difference among the three groups' scores in three cognitive areas (reading, math, and language) and six affective areas (scholastic, social, athletic, physical appearance, behavioral conduct, and global worth self-perceptions). The researcher wanted to determine whether the different treatments in kindergarten screening and subsequent placement had resulted in differences in children's cognitive and affective development.

Although the groups were not of identical sizes (Group 1 = 190, Group 2 = 59, Group 3 = 38), SPSS-X adjusted for the unequal group sizes. Each group was large enough to allow for the use of ANOVA. A priori contrast, using Scheffe at the .05 level, was used to test for statistically significant differences between group means for academics at the third-grade level and for self-perception during the sample's sixth year in school.

Summary

This chapter contained an explanation of the research design and the procedures followed in conducting the study. The sample was described, and the two instruments used to collect data for the study were discussed. The data-gathering and data-analysis techniques were also explained. Chapter IV contains the results of the analyses of data collected for this study.

CHAPTER IV

RESULTS OF THE DATA ANALYSIS

Introduction

The purpose of this study was to examine the long-term effectiveness of the readiness kindergarten program. Specifically, does a "year of growth" in a readiness kindergarten have a positive effect on children's subsequent school achievement and social-emotional development?

The sample comprised 287 children who entered school in September 1982 in two Michigan school districts. For purposes of the study, these youngsters were divided into three groups:

1. Children who were recommended for and attended regular kindergarten.

2. Children who were recommended for and attended a readiness kindergarten.

3. Children who were recommended for readiness kindergarten but entered regular kindergarten instead.

The sources of data for this study were the three groups' Metropolitan Achievement Test (MAT) subscores in reading, math, and language; and their scores on the six subscales (scholastic, social, athletic, appearance, behavior, and global self-worth) of Harter's Self-Perception Profile for Children.

The results of the analyses of data that were collected to test the nine null hypotheses are presented in this chapter. In the following pages, each hypothesis is restated, followed by the results for that hypothesis.

Results

Hypotheses Regarding Achievement

Hypothesis 1: There is no statistically significant difference in the reading achievement scores of the three groups of students at the third-grade level.

One-way analysis of variance (ANOVA) with Scheffe's a priori comparison was used to analyze the reading achievement scores of the three groups. An F-ratio of 2.9069 was obtained, which was not significant at the .05 level (see Table 4.1). The fact that the F-ratio did not indicate a significant difference may be attributed to the large difference in cell sizes.

Although the overall F-ratio was not significant, Scheffe's a priori comparison indicated a significant difference at the .05 level between Group 1 and Group 2, with a T-value of 2.051. Group 1's mean (60.8158) was 5.4260 higher than that of Group 2 (55.3898) (see Table 4.2). Therefore, the null hypothesis of no significant difference was rejected. The students who were recommended for the regular kindergarten had significantly higher reading achievement at the third-grade level than did the students who were recommended for and attended readiness kindergarten.

Table 4.1.--Results of ANOVA for reading achievement.

Source	df	Sum of Squares	Mean Squares	F-Ratio	Probability of the F-Ratio
Between groups	2	1563.6500	781.8250	2.9069	.0563*
Within groups	284	76383.6392	268.9565		
Total	286	77947.2892			

Group	n	Mean	Standard Deviation
1	190	60.8158	16.3601
2	59	55.3898	18.1650
3	38	56.8421	13.4155
Total	287	59.1742	16.5089

*Group means were not significantly different at the .05 level.

Table 4.2.--Results of Scheffe's a priori comparison for reading achievement.

Contrast	Mean Difference	T-Value	df	Probability of the T-Value
Group 1 vs. Group 2	5.4260	2.051	89	.043*
Group 1 vs. Group 3	3.9737	1.603	61	.114
Group 2 vs. Group 3	1.4523	0.452	93	.652

*These two groups were significantly different at the .05 level.

Hypothesis 2: There is no statistically significant difference in the math achievement scores of the three groups of students at the third-grade level.

Analysis of the data using ANOVA indicated a statistically significant difference between the groups in math achievement. An F-ratio of 5.7631 was obtained, which was significant at the .05 level. Based on these results, the null hypothesis of no significant difference between groups was rejected (see Table 4.3).

Table 4.3.--Results of ANOVA for math achievement.

Source	df	Sum of Squares	Mean Squares	F-Ratio	Probability of the F-Ratio
Between groups	2	2928.7227	1464.3613	5.7631	.0035*
Within groups	284	72162.1066	254.0919		
Total	286	75090.8293			

Group	n	Mean	Standard Deviation
1	190	59.2105	16.0593
2	59	51.4746	15.8510
3	38	54.7105	15.4621
Total	287	57.0244	16.2036

*Significant at the .05 level.

Scheffe's a priori comparison indicated a significant difference at the .05 level between Group 1 and Group 2, with a T-value of 3.264. Group 1's mean (59.2105) was 7.7360 higher than

that of Group 2 (51.4746) (see Table 4.4). The group of students who were recommended for regular kindergarten had significantly higher math achievement at the third-grade level than did the group of students who were recommended for and attended a readiness kindergarten.

Table 4.4.--Results of Scheffe's a priori comparison for math achievement.

Contrast	Mean Difference	T-Value	df	Probability of the T-Value
Group 1 vs. Group 2	7.7360	3.264	98	.002*
Group 1 vs. Group 3	4.5000	1.627	54	.110
Group 2 vs. Group 3	3.2360	0.996	81	.322

*These two groups were significantly different at the .05 level.

Hypothesis 3: There is no statistically significant difference in the language achievement scores of the three groups of students at the third-grade level.

The language achievement scores were analyzed using ANOVA. The results indicated a statistically significant difference between group means. An F-ratio of 8.3725 was obtained, which was significant at the .05 level. Therefore, the null hypothesis of no significant difference between groups was rejected (see Table 4.5).

Table 4.5.--Results of ANOVA for language achievement.

Source	df	Sum of Squares	Mean Squares	F-Ratio	Probability of the F-Ratio
Between groups	2	3759.5893	1879.7947	8.3725	.0003*
Within groups	284	63539.2254	224.5202		
Total	286	67298.8147			

Group	n	Mean	Standard Deviation
1	189	65.3175	14.4290
2	59	56.3390	17.6289
3	38	61.1579	13.1242
Total	287	62.9126	15.3667

*Significant at the .05 level.

The Scheffe a priori comparison indicated a statistically significant difference between Group 1 and Group 2. The T-value of 3.588 was significant at the .05 level. Group 1's language achievement mean (65.3175) was 8.9785 higher than that of Group 2 (56.3490) (see Table 4.6). These results indicate that the group of students who were recommended for and attended regular kindergarten had significantly higher language achievement at the third-grade level than did the group of students who were recommended for and attended readiness kindergarten.

Table 4.6.--Results of Scheffe's a priori comparison for language achievement.

Contrast	Mean Difference	T-Value	df	Probability of the T-Value
Group 1 vs. Group 2	8.9785	3.558	84	.001*
Group 1 vs. Group 3	4.1596	1.752	57	.085
Group 2 vs. Group 3	4.8189	1.539	93	.127

*These two groups were significantly different at the .05 level.

Hypotheses Regarding Socio-Emotional Factors

Hypothesis 4: There is no statistically significant difference in the self-perception scores in scholastic competence of the three groups of students in their sixth year of elementary school.

The data failed to reject the null hypothesis of no significant difference between groups. An F-ratio of 1.1616 was obtained, which was not significant at the .05 level (see Table 4.7).

Hypothesis 5: There is no statistically significant difference in the self-perception scores in social acceptance of the three groups of students in their sixth year of elementary school.

Analysis of the data using ANOVA indicated no statistically significant difference between the scores of the groups in self-perception of social acceptance. An F-ratio of .5495 was obtained, which was not significant at the .05 level. Therefore, the data failed to reject the null hypothesis (see Table 4.8).

Table 4.7.--Results of ANOVA for self-perception of scholastic competence.

Source	df	Sum of Squares	Mean Squares	F-Ratio	Probability of the F-Ratio
Between groups	2	0.9882	.4941	1.1616	.3145*
Within groups	284	120.7990	.4253		
Total	286	121.7872			

Group	n	Mean	Standard Deviation
1	190	2.9319	.6448
2	59	2.9347	.6674
3	38	2.7595	.6656
Total	287	2.9097	.6526

*Group means were not significantly different at the .05 level. For results of Scheffe's a priori comparison, see Appendix C.

Table 4.8.--Results of ANOVA for social acceptance.

Source	df	Sum of Squares	Mean Squares	F-Ratio	Probability of the F-Ratio
Between groups	2	.7060	.3530	.5495	.5779*
Within groups	284	182.4702	.6425		
Total	286	183.1762			

Group	n	Mean	Standard Deviation
1	190	3.0351	.8355
2	59	3.1386	.7280
3	38	2.9774	.7314
Total	287	3.0487	.8003

*Group means were not significantly different at the .05 level. For results of Scheffe's a priori comparison, see Appendix C.

Hypothesis 6: There is no statistically significant difference in the self-perception scores in athletic competence of the three groups of students in their sixth year of elementary school.

Analysis of the data using ANOVA indicated a significant difference in the scores of the three groups in self-perception of athletic competence. An F-ratio of 3.6967 was obtained, which was significant at the .05 level. Therefore, the null hypothesis of no significant difference was rejected (see Table 4.9).

Table 4.9.--Results of ANOVA for self-perception of athletic competence.

Source	df	Sum of Squares	Mean Squares	F-Ratio	Probability of the F-Ratio
Between groups	2	3.6962	1.8481	3.6967	.0260*
Within groups	284	141.9804	.4999		
Total	286	145.6766			

Group	n	Mean	Standard Deviation
1	190	2.8768	.6819
2	59	3.1386	.7017
3	38	2.8029	.8310
Total	287	2.9208	.7137

*Significant at the .05 level.

Scheffe's a priori comparison indicated a significant difference at the .05 level between the means of Group 1 (2.8768) and Group 2 (3.1386), with a T-value of 2.521. A significant difference was also found at the .05 level between the means of Group 2 (3.1386) and Group 3 (2.8029), with a T-value of 2.062. Group 2's self-perception score in athletic competence was .2619 higher than that of Group 1 and .3357 higher than that of Group 3 (see Table 4.10).

Table 4.10.--Results of Scheffe's a priori comparison for self-perception of athletic competence.

Contrast	Mean Difference	T-Value	df	Probability of the T-Value
Group 1 vs. Group 2	0.2619	2.521	95	.013*
Group 1 vs. Group 3	0.0739	0.515	48	.609
Group 2 vs. Group 3	0.3357	2.062	69	.043*

*These two groups were significantly different at the .05 level.

These results indicate that the group of students who were recommended for and attended a readiness kindergarten had significantly higher self-perceptions of athletic competence in their sixth year of elementary school than did the group of students who were recommended for and attended regular kindergarten and the group who were recommended for readiness kindergarten but entered regular kindergarten instead.

Hypothesis 7: There is no statistically significant difference in the self-perception scores in physical appearance of the three groups of students in their sixth year of elementary school.

The self-perception scores in physical appearance were analyzed using ANOVA. An F-ratio of 1.8521 was obtained, which was not significant at the .05 level. These data failed to reject the null hypothesis of no significant difference (see Table 4.11).

Table 4.11.--Results of ANOVA for self-perception of physical appearance.

Source	df	Sum of Squares	Mean Squares	F-Ratio	Probability of the F-Ratio
Between groups	2	2.2756	1.1378	1.8521	.1588*
Within groups	284	174.4718	.6143		
Total	286	176.7475			

Group	n	Mean	Standard Deviation
1	190	2.8205	.7649
2	59	3.0453	.7829
3	38	2.8684	.8751
Total	287	2.8730	.7861

*Group means were not significantly different at the .05 level. For results of Scheffe a priori comparison, see Appendix C.

Hypothesis 8: There is no statistically significant difference in the self-perception scores in behavioral conduct of the three groups of students in their sixth year of elementary school.

The self-perception scores in behavioral conduct were analyzed using ANOVA. The F-ratio of .4948 was not significant at the .05 level, indicating that there was no significant difference in the self-perception scores in behavioral conduct of the three groups (see Table 4.12). Thus, the data failed to reject the null hypothesis.

Table 4.12.--Results of ANOVA for self-perception of behavioral conduct.

Source	df	Sum of Squares	Mean Squares	F-Ratio	Probability of the F-Ratio
Between groups	2	.3962	.1981	.4948	.6102*
Within groups	284	113.7027	.4004		
Total	286	114.0988			

Group	n	Mean	Standard Deviation
1	190	3.1044	.6158
2	59	3.0319	.7195
3	38	3.0176	.5697
Total	287	3.0780	.6316

*Group means were not significantly different at the .05 level. For results of Scheffe a priori comparison, see Appendix C.

Hypothesis 9: There is no statistically significant difference in the self-perception scores in global self-worth of the three groups of students in their sixth year of elementary school.

The data were analyzed using ANOVA. An F-ratio of .4419 was obtained, which was not significant at the .05 level. These results indicate that there was no significant difference in the groups' self-perception scores in global self-worth. Therefore, the data failed to reject the null hypothesis (see Table 4.13).

Table 4.13.--Results of ANOVA for self-perception of global self-worth.

Source	df	Sum of Squares	Mean Squares	F-Ratio	Probability of the F-Ratio
Between groups	2	.3591	.1795	.4419	.6433*
Within groups	284	115.3877	.4063		
Total	286	115.7468			

Group	n	Mean	Standard Deviation
1	190	3.2551	.6129
2	59	3.3000	.7167
3	38	3.1755	.6275
Total	287	3.2538	.6361

*Group means were not significantly different at the .05 level. For results of Scheffe's a priori comparison, see Appendix C.

Summary

Statistically significant differences were found between groups in reading, math, and language achievement, and in self-perception of athletic competence. Group 1 (recommended for and attended regular kindergarten) had significantly higher scores in math, reading, and language achievement at the third-grade level than did Group 2 (recommended for and attended readiness kindergarten).

However, Group 2 (recommended for and attended readiness kindergarten) had a significantly higher score in self-perception of athletic competence in the sixth year of elementary school than did Group 1 (recommended for and attended regular kindergarten) or

Group 3 (recommended for readiness kindergarten but attended regular kindergarten instead).

No statistically significant differences were found in the three groups' scores in self-perception of scholastic competence, social acceptance, physical appearance, behavioral conduct, or global self-worth.

Chapter V contains a summary of the study, conclusions based on the research findings, synthesis of the findings, and recommendations for practice and further research.

CHAPTER V

SUMMARY, CONCLUSIONS, SYNTHESIS, RECOMMENDATIONS, AND REFLECTIONS

Summary

The purpose of this study was to examine the long-term effectiveness of the readiness kindergarten program. Specifically, does a "year of growth" in a readiness kindergarten have a positive effect on pupils' subsequent school achievement and emotional development?

The sample comprised 287 students from two neighboring school districts who were screened for kindergarten before the 1982-83 school year. The students were divided into three groups:

Group 1: Children who were recommended for and attended regular kindergarten.

Group 2: Children who were recommended for and attended a readiness kindergarten.

Group 3: Children who were recommended for readiness kindergarten but entered regular kindergarten instead.

Procedures

School achievement was measured by the Metropolitan Achievement Test (MAT). The subtest scores used for the study were reading, math, and language. Social-emotional development was measured by Harter's Self-Perception Profile for Children. This scale taps

children's perceptions of themselves in six domains: (a) scholastic competence, (b) social acceptance, (c) athletic competence, (d) physical appearance, (e) behavioral conduct, and (f) global self-worth.

The data from the MAT were gathered in May and June 1988 from the students' cumulative files in their elementary schools. This test had been administered by classroom teachers during the children's third-grade year of school. The researcher administered the Self-Perception Profile for Children to sample members in each of the elementary school buildings in April 1988 during the students' sixth year of elementary school. (The sixth year of elementary school does not indicate a specific grade; rather, it is merely the students' sixth year of school, regardless of what grade they are in.)

Findings and Conclusions

The findings and conclusions are presented under two headings--academic achievement and social-emotional development--which correspond to the categories of hypotheses formulated for the study. The findings of the hypothesis tests are given first, followed by conclusions and discussion of the findings.

Academic Achievement

ANOVA with Scheffe's a priori comparison indicated that, in the students' third-grade year of school:

1. Group 1's reading achievement score was significantly higher (at the .05 level) than that of Group 2.

2. Group 1's math achievement score was significantly higher (at the .05 level) than that of Group 2.

3. Group 1's language achievement score was significantly higher (at the .05 level) than that of Group 2.

All three null hypotheses regarding academic achievement were rejected as a result of the statistical analyses. Significant differences were found at the .05 alpha level, which is the normally accepted level in social research. The findings showed significant differences in reading, math, and language achievement between Group 1 and Group 2 at the third-grade level (see Table 5.1). In other words, the group of students who were recommended for and attended regular kindergarten (Group 1) had significantly higher reading, math, and language achievement in third grade than did the group of students who were recommended for and attended readiness kindergarten (Group 2). The group of students who were recommended for readiness kindergarten but entered regular kindergarten instead (Group 3) was not significantly different in reading, math, or language achievement in third grade from either of the other two groups.

Discussion. When examining these results, it is important to remember that the children in both Group 2 and Group 3 were identified during kindergarten screening as being developmentally young. The Group 2 children spent an extra year in readiness kindergarten, in accord with the placement recommendation. However,

the Group 3 children were placed with the Group 1 children in regular kindergarten, despite the placement recommendation. They were the children who, according to the readiness kindergarten philosophy, would be under stress, finding learning difficult and generally manifesting more learning problems. It should also be noted that Group 2 children were approximately 10 months older than youngsters in Group 3 and 8 months older than those in Group 1 when they took the MAT because they had spent an extra year in the readiness kindergarten (see Table 5.2).

Table 5.1.--Results of ANOVA between groups for academic achievement.

Academic Area	F-Ratio	Probability of the F-Ratio	Group 1 Mean	Group 2 Mean	Group 3 Mean
Reading	2.9069	.0563	60.8158	55.3989	56.8421
Math	5.7631	.0035*	59.2105	51.4746	54.7105
Language	8.3725	.0003*	65.3175	56.3390	61.1579

Results of Scheffe's a priori comparison

Academic Area	Group 1 vs. Group 2		Group 1 vs. Group 3		Group 2 vs. Group 3	
	T-Value	T-Prob.	T-Value	T-Prob.	T-Value	T-Prob.
Reading	2.051	.043*	1.603	.114	0.452	.652
Math	3.264	.002*	1.627	.110	0.996	.322
Language	3.558	.001*	1.752	.085	1.539	.127

*Significant at the .05 level.

Table 5.2.--Comparison of groups' mean ages at school entrance (September 1, 1982).

Group	Mean Age
1	5 years and 4 months old
2	5 years and 0 months old
3	5 years and 2 months old

The results did not show that the Group 3 children had more school difficulties than children in the other groups, as would be expected. Rather, no significant differences were found between Group 3 and Group 2 in terms of academic achievement. These data support the findings of Shepard and Smith (1985), May and Welch (1984), Bell (1972), Talmadge (1981), Raygor (1972), and Matthews (1977). That is, children in extra-year programs showed virtually no academic advantage over equally at-risk children who had not had the extra year of school.

At the same time, these data refuted the research theory of Ilg et al. (1978) and Brevard County (1987), namely, that for a child to find the school years a valuable and nonstressful experience, he/she should be developmentally ready; the unready child rarely catches up. In the current research, the "developmentally unready" children of Group 3 were at the same place academically as were the students in Group 2, who had spent two years in kindergarten.

Although these findings do seem to be both educationally and statistically significant, the questions arise: Why did these results occur? Why did the children who were recommended for the

readiness kindergarten but did not take the extra year (Group 3) perform at the same level as similar at-risk students who had the extra year (Group 2)?

The researcher first speculated that perhaps several students in Group 3 had been retained in a later grade and were in fact a year older than the rest of the group when they took the MAT in third grade. Because they were a year older, their achievement scores could have been higher and these higher scores would then have inflated the mean achievement scores for the entire group. This speculation proved false. Only 26% of the students in Group 3 had been retained in a later grade, and their MAT scores were actually lower than those of the remaining 74% who had not been retained. Thus, the retained students did not account for the comparable mean achievement scores of the two groups.

Another possibility was that Group 3 had a higher percentage of older students than Group 2--that is, students who were at least 5 years, 4 months old when they entered kindergarten (children born between December 1, 1976, and May 31, 1977). According to Uphoff and Gilmore (1985), older children are much more likely than younger ones to score in the above-average range on standardized achievement tests. If there was a high percentage of older students in Group 3, perhaps they inflated the group's mean achievement scores. The data did not support this possibility. Group 3 contained 37% older students, whose scores in reading, math, and language were slightly lower than those of students in Group 2 (see Table 5.3).

Table 5.3.--Mean percentiles of Group 3 (older students) and Group 2 on the reading, math, and language subtests of the MAT.

Group	Mean Percentile		
	Reading	Math	Language
Group 3 (older students)	52	49	54
Group 2	55	51	56

A third possibility was that, because Group 2 contained 76% boys, perhaps boys scored significantly lower overall on the MAT than did girls. In comparing the scores of males and females, regardless of group, no significant difference (at the .05 level) was found in reading and math achievement. However, a significant difference was found (at the .05 level) in language achievement (see Table 5.4). Girls scored higher than boys in this area. This finding concurs with Soderman and Phillips's (1986) statement that girls exhibit superiority in language and earlier left-brain development. Because there was no significant difference in the achievement of boys and girls on two of the three MAT subtests, it could not be concluded that Group 2's lower achievement scores were a result of boys' achieving lower overall on the MAT.

Table 5.4.--Comparison of males' and females' mean MAT subtest scores, regardless of group.

Variable	n	Mean	Standard Deviation	T-Value	df	2-Tailed T-Prob.
Reading						
Males	139	57.6691	17.291	1.48	278	.139
Females	149	60.5570	15.618			
Math						
Males	139	57.7266	16.337	.72	284	.469
Females	149	56.3423	16.052			
Language						
Males	139	60.3094	16.016	2.79	277	.006*
Females	149	65.3311	14.312			

*Significant at the .05 level.

A final possibility was that Group 3 had a high percentage of false placements--that is, children who tested developmentally young but were, in fact, developmentally ready for regular kindergarten. Their parents might have refused the placement recommendation, not because they did not believe in the concept of readiness kindergarten, but rather because they thought their child's true performance had not been identified during screening. If Group 3 had a high percentage of false placement, that might explain why this group of supposedly at-risk students performed at the same level as the Group 2 students without the advantage of an extra year in kindergarten. Because there is no way of proving this speculation, it must remain merely a possibility. However, given this possibility, one might subsequently question the accuracy of

the screening devices used, but that would be the subject of an entirely different study.

Whatever the reason, the fact remains that no significant difference was found between the achievement scores of the at-risk students who took the extra year in readiness kindergarten (Group 2) and those who, despite this recommendation, were placed with the Group 1 students in regular kindergarten (Group 3). The finding of no benefit on all three measures (reading, math, and language) raises serious questions about the academic efficacy of the readiness kindergarten.

Social-Emotional Development

ANOVA with Scheffe's a priori comparison indicated that, in the students' sixth year of elementary school:

1. There was no significant difference (at the .05 level) in the three groups' scores in self-perception of scholastic competence.

2. There was no significant difference (at the .05 level) in the three groups' scores in self-perception of social acceptance.

3. There was a significant difference (at the .05 level) in the three groups' scores in self-perception of athletic competence.

4. There was no significant difference (at the .05 level) in the three groups' scores in self-perception of physical appearance.

5. There was no significant difference (at the .05 level) in the three groups' scores in self-perception of behavioral conduct.

6. There was no significant difference (at the .05 level) in the three groups' scores in self-perception of global self-worth.

Five of the six null hypotheses regarding social-emotional development failed to be rejected as a result of the statistical procedure that was applied. No significant differences were found (at the .05 level) in self-perception of scholastic competence, social acceptance, physical appearance, behavioral conduct, and global self-worth during the students' sixth year in elementary school. Regardless of the kindergarten screening recommendations and placement, no significant differences were found between groups in terms of these five areas of self-perception.

One of the six null hypotheses regarding social-emotional development was rejected as a result of the statistical analysis. There was a significant difference (at the .05 level) in self-perception of athletic competence. Group 2's self-perception of athletic competence was significantly higher than that of both Group 1 and Group 3. The group of students who were recommended for and attended a readiness kindergarten had a significantly higher self-perception of athletic competence than did either of the comparison groups (Group 1 and Group 3) (see Table 5.5).

Discussion. The social-emotional advantages of an extra year in readiness kindergarten are perceived by advocates as perhaps its greatest benefit to children. As noted earlier, children in both Group 2 and Group 3 were identified during kindergarten screening as being developmentally young. The children in Group 2 spent an extra year in readiness kindergarten, in keeping with the placement

recommendation. According to the readiness kindergarten philosophy, these children should have stronger feelings of self-worth and a more positive attitude toward school and be generally more socially developed than the equally at-risk children in Group 3 who did not have the extra year in readiness kindergarten.

Table 5.5.--Results of ANOVA between groups for self-perception survey.

Self-Perception Domain	F-Ratio	Prob. of F-Ratio	Group 1 Mean	Group 2 Mean	Group 3 Mean
Scholastic competence	1.1616	.3145	2.9319	2.9347	2.7595
Social acceptance	.5495	.5779	3.0351	3.1386	2.9774
Athletic competence	3.6967	.0260*	2.8768	3.1386	2.8029
Physical appearance	1.8521	.1588	2.8205	3.0453	2.8684
Behavioral conduct	.4948	.6102	3.1044	3.0319	3.0176
Global self-worth	.4417	.6433	3.2551	3.3000	3.1755

Results of Scheffe's a priori comparison for self-perception of athletic competence

Group 1 vs. Group 2		Group 1 vs. Group 3		Group 2 vs. Group 3	
T-Value	T-Prob.	T-Value	T-Prob.	T-Value	T-Prob.
2.521	.013*	0.515	.609	2.062	.043*

*Significant at the .05 level.

The findings of this research do not show that the children in Group 2 had stronger feelings of self-worth and scholastic competence or were generally more socially developed than those in Group 3. The results do support the findings of Shepard and Smith (1985) and Bell (1972)--that extra-year programs do not have a significant positive effect on children's social-emotional development.

Some researchers have supported the social-emotional effectiveness of extra-year programs such as the readiness kindergarten (Gott, 1963; Uphoff & Gilmore, 1986). These researchers focused on the affective disadvantages of having younger children in a given class or grade. The current study did not substantiate these findings.

Of the 287 children in this study, 156 were classified as younger (their birthdays fell between June 1 and November 30). Twenty-nine percent of Group 1, 85% of Group 2, and 63% of Group 3 were younger students. (Six younger students in Group 3 had been retained, so they were eliminated from this comparison because they had the advantage of an extra year, bringing Group 3's percentage of younger students to 47%.) Because of Group 3's small size in this younger-student comparison (n = 24), it is difficult to make inferences to a larger population. However, it is of interest nonetheless. The data indicated no significant difference (at the .05 level) in five of the six self-perception domains surveyed. There was no substantial social-emotional difference between younger

students with and those without the extra year of readiness kindergarten. The younger students' scores paralleled those of the total group. The only area of significant difference was self-perception of athletic competence (see Table 5.6).

Table 5.6.--Self-Perception Profile means for children born between June 1 and November 30.

Domain	Group 1 Mean	Group 2 Mean	Group 3 Mean
Scholastic competence	3.0085	2.8634	2.8617
Social acceptance	2.8800	3.0838	2.9261
Athletic competence	2.8268	3.1034*	2.6851
Physical appearance	2.8457	2.9268	2.7688
Behavioral conduct	3.1889	2.9942	3.1211
Global self-worth	3.2392	3.2438	3.2406

*Significant at the .05 level.

The findings of this research demonstrated that the single benefit for social-emotional development of the extra year in readiness kindergarten was the children's self-perception of athletic competence. Two important factors could have contributed to the students' high score in this domain.

First, the children in Group 2, who had an extra year in readiness kindergarten, were approximately a year older than their classmates. Therefore, they were more advanced in terms of physical growth and motor development. In addition, 76% of the students in Group 2 were boys. Harter (1985a) indicated that in four samples who took the Self-Perception Profile, boys consistently saw

themselves as significantly more athletically competent than did girls. Those differences were substantial (see Table C.6, Appendix C). From this evidence, it is conceivable that Group 2's higher mean score on self-perception of athletic competence could be attributed more to the students' gender and their extra-year advancement in physical growth and motor development than to the effectiveness of the readiness kindergarten program.

Finally, it should be noted that the high percentage of boys in Group 2 (76%) lends credence to Soderman's (1985), Shepard and Smith's (1985), and Egertson's (1987) contention that readiness kindergartens contain a disproportionate number of boys (see Table 5.7).

Table 5.7.--Comparison of the numbers of males and females recommended for readiness kindergarten.

	Males	Females
Original sample	138	149
Percentage of all males and females recommended for readiness kindergarten	44%	24%
Total of all students recommended for readiness kindergarten (Group 2 and Group 3)	83%	37%
Group 2 (students who attended readiness kindergarten)	76%	24%

Synthesis

The achievement scores in third grade indicated that the at-risk students who were given an extra year of school were no better off academically than the equally at-risk students who were placed in regular kindergarten. In addition, on five out of six measures of social-emotional development at age ten, no significant difference was found between at-risk students who had an extra year of school and those who did not. The fact that the extra-year students were significantly higher in self-perception of athletic competence can be attributed to the extra-year advantage in physical growth, as well as the high percentage of males (76%) in this group, rather than just the effectiveness of the readiness kindergarten program.

Based on these findings, it can be concluded that an extra year of growth in readiness kindergarten does not have a significant positive effect on subsequent academic achievement or social-emotional development. The slight advantage of a higher self-esteem in athletic competence does not appear to warrant taking a child away from his/her peer group and isolating him/her for a year in a readiness kindergarten.

What does seem evident is the fact that these developmentally young students appeared to be different from their peers at the time of kindergarten screening, and five years later in third grade, when these same students took a standardized achievement test, they still appeared to be different. The extra year in kindergarten had not made a difference.

These results challenge the cognitive and affective value of the readiness kindergarten. They should further challenge early childhood educators to seek appropriate methods and curricula to meet the developmental needs and abilities of all the young children they serve.

Recommendations

Recommendations for Practice

The findings and conclusions of this study led to the following recommendations for those who are responsible for kindergarten and primary education:

1. The recent literature and research in early childhood education should be reviewed regarding high-quality, developmentally appropriate programs for five- to eight-year-old children.

2. Where readiness kindergartens presently exist, they should be evaluated to determine whether they are, in fact, meeting the long-term cognitive and affective needs of at-risk children.

3. Primary programs should be examined, and developmentally appropriate philosophies and curriculum guidelines should be developed that are responsive to the wide range of children's abilities and readiness levels.

4. Sizes of classroom groups and the ratio of adults to children should be carefully regulated to allow for the successful implementation of a developmentally appropriate curriculum (see Chapter II, pp. 46-47, and NAEYC Grouping and Staffing Policy, Appendix D).

5. Classrooms should be staffed with teachers who have a strong educational background in early childhood education and child development (see Chapter II, pp. 47-48, and NAEYC Grouping and Staffing Policy, Appendix D).

Recommendations for Further Research

1. A follow-up study should be conducted with this same student sample at the junior high and senior high levels, focusing on the academic and social-emotional factors as well as the drop-out rate.

2. The present study should be replicated with a larger sample of students.

3. Studies comparing academically and developmentally oriented kindergartens would be helpful. However, more than just test score measurements would need to be used because of the "whole child" philosophy of the developmentally oriented kindergarten.

4. Further research is suggested to determine whether children's preschool experience or lack thereof has any effect on their kindergarten screening recommendation and placement.

5. Studies should be undertaken to investigate the process of identification and placement in readiness kindergarten, specifically addressing the validity and reliability of the screening and/or readiness testing instruments, the appropriateness of these instruments, the qualifications and training of the testers, and the probability of a child's being misplaced based on this screening process.

6. Studies relating to the effect of the kindergarten screening recommendation on parents' and teachers' perceptions of a child's ability and performance would be very helpful.

7. Additional research needs to be undertaken to investigate the implications of homogeneous grouping in the readiness kindergarten (e.g., limited peer modeling, lack of exposure to the regular curriculum, lowered expectations for development, and so on).

8. Further research is suggested beyond the third-grade level to determine how the extra-year kindergarten students compare with their present classmates in both academic achievement and social-emotional development.

Reflections

At the completion of this study, the questions remain: Why did these results occur? Why did not the extra year in kindergarten make a difference? The answer to these questions goes beyond the scope and purpose of the present study, but it would be of value at this point to reflect on the possible factors that may have influenced these results.

The first obvious factor, discussed in both Chapters II and V, is the possibility of false placements during the screening process. This whole area is highly suspect and is in need of further examination and research.

Closely linked to the identification and placement process are parents' and teachers' perceptions of the students' ability. Does the placement in readiness kindergarten result in a de facto form of

ability grouping, which establishes a pattern of lowered expectations? Do such expectations have serious consequences for future educational experiences for these youngsters (Egertson, 1987)?

Not only were there no statistically significant differences between the two at-risk groups' achievement in reading, math, and language, but actually the extra-year students' (Group 2) scores were consistently lower than those of the at-risk students who did not have the extra year (Group 3) (see Table C.7, Appendix C).

Along with lowering the expectations of parents and teachers, does the homogeneous grouping of the readiness kindergarten have a further negative effect on the academic and social-emotional development of its students? Two factors to be considered here are (a) fewer positive peer models and (b) the lack of access to the regular curriculum. Is it possible that the future of the extra-year kindergarten students is thus more limited, and will they continue in the slow track throughout their schooling (National Association of Early Childhood Specialists in State Departments of Education, 1987)?

Finally, if the children lack access to the regular curriculum, what then is the curriculum of the readiness kindergarten? The readiness curriculum, as discussed in Chapter II, is both vague and elusive, varying from district to district, from school to school, and even within a given school. Because its underlying practice is based on a maturational viewpoint, is this "gift of time" then

merely a period of waiting to grow, mature, and endogenously develop (Meisels, 1986)? Are these youngsters being denied opportunities for cognitive growth through social interaction with their age-mates (National Association of Early Childhood Specialists in State Departments of Education, 1987)?

All of the above considerations were included in the recommendations for further research. Further investigation of these issues would greatly help to clarify what is truly appropriate practice for the successful education of all kindergarten children.

APPENDICES

APPENDIX A

THE INSTRUMENT

MANUAL FOR THE
SELF-PERCEPTION PROFILE FOR CHILDREN

(Revision of the Perceived Competence Scale for Children)

Susan Harter

University of Denver
1985

What I Am Like

Name _____ Age _____ Birthday _____ Group _____
Month Day

Boy or Girl (circle which)

SAMPLE SENTENCE

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
(a)	☐	☐	Some kids would rather play outdoors in their spare time	**BUT**	Other kids would rather watch T.V.	☐	☐
1.	☐	☐	Some kids feel that they are very *good* at their school work	**BUT**	Other kids *worry* about whether they can do the school work assigned to them.	☐	☐
2.	☐	☐	Some kids find it *hard* to make friends	**BUT**	Other kids find it's pretty *easy* to make friends.	☐	☐
3.	☐	☐	Some kids do very *well* at all kinds of sports	**BUT**	Other kids *don't* feel that they are very good when it comes to sports.	☐	☐
4.	☐	☐	Some kids are *happy* with the way they look	**BUT**	Other kids are *not* happy with the way they look.	☐	☐
5.	☐	☐	Some kids often do *not* like the way they *behave*	**BUT**	Other kids usually *like* the way they behave.	☐	☐
6.	☐	☐	Some kids are often *unhappy* with themselves	**BUT**	Other kids are pretty *pleased* with themselves.	☐	☐
7.	☐	☐	Some kids feel like they are *just as smart* as as other kids their age	**BUT**	Other kids aren't so sure and *wonder* if they are as smart.	☐	☐
8.	☐	☐	Some kids have *alot* of friends	**BUT**	Other kids *don't* have very many friends.	☐	☐

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
9.	☐	☐	Some kids wish they could be alot better at sports	**BUT**	Other kids feel they are good enough at sports.	☐	☐
10.	☐	☐	Some kids are *happy* with their height and weight	**BUT**	Other kids wish their height or weight were *different.*	☐	☐
11.	☐	☐	Some kids usually do the *right* thing	**BUT**	Other kids often *don't* do the right thing.	☐	☐
12.	☐	☐	Some kids *don't* like the way they are leading their life	**BUT**	Other kids *do* like the way they are leading their life.	☐	☐
13.	☐	☐	Some kids are pretty *slow* in finishing their school work	**BUT**	Other kids can do their school work *quickly.*	☐	☐
14.	☐	☐	Some kids would like to have alot more friends	**BUT**	Other kids have as many friends as they want.	☐	☐
15.	☐	☐	Some kids think they could do well at just about any new sports activity they haven't tried before	**BUT**	Other kids are afraid they might *not* do well at sports they haven't ever tried.	☐	☐
16.	☐	☐	Some kids wish their body was *different*	**BUT**	Other kids *like* their body the way it is.	☐	☐
17.	☐	☐	Some kids usually *act* the way they know they are *supposed* to	**BUT**	Other kids often *don't* act the way they are supposed to.	☐	☐
18.	☐	☐	Some kids are *happy* with themselves as a person	**BUT**	Other kids are often *not* happy with themselves.	☐	☐
19.	☐	☐	Some kids often *forget* what they learn	**BUT**	Other kids can remember things *easily.*	☐	☐
20.	☐	☐	Some kids are always doing things with *alot* of kids	**BUT**	Other kids usually do things *by themselves.*	☐	☐

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
21.	☐	☐	Some kids feel that they are *better* than others their age at sports	BUT	Other kids *don't* feel they can play as well.	☐	☐
22.	☐	☐	Some kids wish their physical appearance (how they look) was *different*	BUT	Other kids *like* their physical appearance the way it is.	☐	☐
23.	☐	☐	Some kids usually get in *trouble* because of things they do	BUT	Other kids usually *don't* do things that get them in trouble.	☐	☐
24.	☐	☐	Some kids *like* the kind of *person* they are	BUT	Other kids often wish they were someone else.	☐	☐
25.	☐	☐	Some kids do *very well* at their classwork	BUT	Other kids *don't* do very well at their classwork.	☐	☐
26.	☐	☐	Some kids wish that more people their age liked them	BUT	Other kids feel that most people their age *do* like them.	☐	☐
27.	☐	☐	In games and sports some kids usually *watch* instead of play	BUT	Other kids usually *play* rather than just watch.	☐	☐
28.	☐	☐	Some kids wish something about their face or hair looked *different*	BUT	Other kids *like* their face and hair the way they are.	☐	☐
29.	☐	☐	Some kids do things they know they *shouldn't* do	BUT	Other kids *hardly ever* do things they know they shouldn't do.	☐	☐
30.	☐	☐	Some kids are very *happy* being the way they are	BUT	Other kids wish they were *different*.	☐	☐
31.	☐	☐	Some kids have *trouble* figuring out the answers in school	BUT	Other kids almost *always* can figure out the answers.	☐	☐
32.	☐	☐	Some kids are *popular* with others their age	BUT	Other kids are *not* very popular.	☐	☐

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
33.	☐	☐	Some kids *don't* do well at new outdoor games	BUT	Other kids are *good* at new games right away.	☐	☐
34.	☐	☐	Some kids think that they are good looking	BUT	Other kids think that they are not very good looking.	☐	☐
35.	☐	☐	Some kids behave themselves very well	BUT	Other kids often find it hard to behave themselves.	☐	☐
36.	☐	☐	Some kids *are* not very happy with the way they do alot of things	BUT	Other kids think the way they do things is *fine.*	☐	☐

APPENDIX B

CORRESPONDENCE

MICHIGAN STATE UNIVERSITY

OFFICE OF VICE PRESIDENT FOR RESEARCH
AND DEAN OF THE GRADUATE SCHOOL

EAST LANSING • MICHIGAN • 48824-1046

August 22, 1988

Ms. Sharon Devereaux
1626 Brentwood Drive
Troy, Michigan 48098

Dear Ms. Devereaux:

After considering the information received from Dr. Hudzik, and meeting with the Chairperson of your Guidance Committee and Associate Dean Robert Floden of the College of Education, The Graduate School has concluded its review of your request for exemption from the University Policy on Research with Human Subjects in your doctoral dissertation.

As stated in the Graduate Studies portion of the 1987-88 University catalog (p. 41), "'Human Subject' is defined as an individual about whom an investigator conducting research obtains (1) data through intervention or interaction with the individual or (2) identifiable, confidential information about the individual." Your research involved data obtained through interaction with individuals. It is the direct responsibility of the graduate student to inform herself of these published requirements. In your case, however, while you did not carry approval procedures to completion, the Review Board finds that no purpose would be served by forbidding use of the data already collected. Therefore you may consider this letter official notification of exemption from the University Policy on Research with Human Subjects.

Yours sincerely,

Howard Anderson
Assistant Dean

HA/cbc

cc: John E. Cantlon, Vice President for Research and Graduate Studies
John Hudzik, Chairperson, University Committee on Research Involving Human Subjects
Henry Bredeck, Assistant Vice President for Research
Robert Floden, Associate Dean, College of Education
Judith Lanier, Dean, College of Education

1626 Brentwood
Troy, Michigan 48098
April 9, 1988

Assistant Superintendent of Instruction
_____ Community School District
_____ Street
_____ Michigan

Dear _____,

Thank you for your gracious response to my proposed study. I appreciated meeting your elementary principals. Thank you for bringing them together as a group; that was very helpful.

I have enclosed packets for your school board if you wish to share this information with them. I will call you after the board meeting to see if the study meets with their approval.

Thank you again for your support and enthusiasm for my study.

Sincerely,

Sharon K. Devereaux

Wk. 625-5300
Hm. 641-9928

May 1988

Dear Elementary Principal,

As a doctoral student at Michigan State University, I am in the process of collecting data for my dissertation. The topic I have chosen is "A Study of the Cognitive and Social-Emotional Benefits of a Readiness Kindergarten Program.

The sample population that I have identified are those students who were screened for kindergarten prior to their entrance into school in September of 1982. The majority of these students are now in fifth grade with a certain percentage in fourth grade. The variation in grades will be due to the extra year in the readiness kindergarten and/or retention at another grade level.

School achievement will be determined by the Metropolitan Achievement Test that was taken in third grade. And social-emotional development will be measured by the Self-Perception Profile for Children. (A copy of this instrument is enclosed.)

I am seeking your permission to obtain the data from the Metropolitan Achievement Test in the students' cumulative folders. I am, also, asking your permission to administer the Self-Perception Profile for Children to your fourth and fifth graders. The instrument takes 25 minutes to administer and I will administer it myself. The teacher does not have to remain in the classroom unless he/she chooses to do so.

I assure you that your students will have complete anonymity in this study. The names of the school district, the elementary schools or the student subjects will not be used.

It is my hope that this study will provide long-term data on the academic and social-emotional effects of a two-year kindergarten program to help meet the need for more research necessary for making valid decisions regarding developmentally appropriate programs in Early Childhood Education. When my study is completed I would be happy to share the results with you and your teachers if you would be interested.

I trust that I can count on your support in gathering my data. And I would like to thank you for giving this matter your consideration.

Sincerely,

Sharon Devereaux

To: Elementary Principals

From: Sharon Devereaux

Re: Michigan State Proposed Study

Date: April 12, 1988

Requests of Elementary Principals

1. A copy of 4th and 5th grade class lists.(Secretary)

* 2. A date to meet with 4th and 5th grade teachers for approximately 10 minutes to explain study and elicit cooperation. (Between April 13-15)

* 3. Your approval of parent letter and permission to send it home to 4th and 5th grade parents on April 15.

4. Set dates for testing between April 18 - 29. Approximatley 25 minutes per classroom. (Teachers?)

5. At a later date an opportunity to go through cumulative files. (After school if possible.)

N.B. Thank you for giving these requests your consideration. I greatly appreciate your support and cooperation.

Community School District
Elementary

April 29, 1988

Dear Parents,

During the weeks of May 2 through May 13 our fourth and fifth graders will be participating in a 25 minute educational survey entitled, Self-Perception Profile for Children. This is part of a study being conducted at Michigan State University in the College of Education.

Our students will be participating anonymously. Their individual results will not be used, but rather only the total group results are of value in this study.

Furthermore, this survey is strictly voluntary. The students will be asked before they take the survey if they wish to do so. There will be no penalty for not participating in the survey.

If you have any questions of concerns regarding this study, please feel free to call us.

Sincerely,

Principal

Assistant Superintendent
of Instruction

APPENDIX C

TABLES

Table C.1.--Results of Scheffe's a priori comparison for self-perception of scholastic competence.

Contrast	Mean Difference	T-Value	df	Probability of the T-Value
Group 1 vs. Group 2	.0029	.029	94	.977
Group 1 vs. Group 3	.1724	1.465	52	.149
Group 2 vs. Group 3	.1753	1.265	79	.210

Table C.2.--Results of Scheffe's a priori comparison for self-perception of social acceptance.

Contrast	Mean Difference	T-Value	df	Probability of the T-Value
Group 1 vs. Group 2	.1036	.921	110	.359
Group 1 vs. Group 3	.0577	.433	58	.667
Group 2 vs. Group 3	.1613	1.062	79	.291

Table C.3.--Results of Scheffe's a priori comparison for self-perception of physical appearance.

Contrast	Mean Difference	T-Value	df	Probability of the T-Value
Group 1 vs. Group 2	.2248	1.937	95	.056
Group 1 vs. Group 3	.0479	.315	49	.754
Group 2 vs. Group 3	.1768	1.012	73	.315

Table C.4.--Results of Scheffe's a priori comparison for self-perception of behavioral conduct.

Contrast	Mean Difference	T-Value	df	Probability of the T-Value
Group 1 vs. Group 2	.0725	.699	86	.487
Group 1 vs. Group 3	.0867	.845	56	.402
Group 2 vs. Group 3	.0142	.108	91	.914

Table C.5.--Results of Scheffe's a priori comparison for self-perception of global self-worth.

Contrast	Mean Difference	T-Value	df	Probability of the T-Value
Group 1 vs. Group 2	.0449	.434	86	.665
Group 1 vs. Group 3	.0796	.716	52	.477
Group 2 vs. Group 3	.1245	.901	86	.370

Table C.6.--Gender effects: Self-Perception Profile for Children.

Domain	Sample	Boys' Mean	Girls' Mean	F-Value	df	Prob. of F
Athletic Competence	A	3.14	2.67	86.40	2	.0001
	B	3.16	2.57	103.70	2	.0001
	C	3.13	2.71	17.87	1	.0001
	D	2.96	2.57	8.09	1	.0005

Source: Harter (1985a).

Table C.7.--Comparison of mean MAT subtest scores.

Variable	Group 1	Group 2	Group 3
Reading	60.8158	55.3898	56.8421
Math	59.2105	51.4746	54.7105
Language	65.3175	56.3390	61.1579

APPENDIX D

EXCERPT FROM NAEYC POSITION STATEMENT

Excerpt from NAEYC Position Statement on Developmentally Appropriate Practices in Primary Grades Serving 5- Through 8-Year-Olds

	APPROPRIATE Practice	INAPPROPRIATE Practice
Grouping and Staffing	• Size of classroom groups and ratio of adults to children is carefully regulated to allow active involvement of children and time for teachers to plan and prepare group projects that integrate learning and skills in many subject areas and relate to children's interests; to plan for and work with individual children having special needs or interests; to plan and work with parents; and to coordinate with other teachers, teams of specialists, and administrators involved in each child's school experience. Groups of 5-, 6-, 7-, and 8-year-olds are no larger than 25 with 2 adults, one of whom may be a paraprofessional, or no larger than 15 to 18 with one teacher.	• Groups of 25 to 35 children with one teacher are considered acceptable because they are economical and possible with strict scheduling and discipline, use of prepaced textbooks and workbooks, and devoting little attention to individual needs or interests, allowing minimal parent involvement, and allowing no time for coordination among teachers and specialists. Kindergarten teachers must teach a total of 50 or more children in separate morning and afternoon sessions with the assistance of a paraprofessional.
	• Classroom groups vary in size and composition depending on children's needs. Some groups consist mostly of 5- and 6-year-olds or 6- and 7-year-olds, while others span 3 chronological years (5-, 6-, and 7-year-olds or 6-, 7-, and 8-year-olds) or are composed mainly of same-age children. Children are placed where it is expected that they will do their best, which may be in a family grouping and which is more likely to be determined by developmental than by chronological age. Persistent difficulties of individual children are handled in small groups with more intensive help and the composition of these groups is flexible and temporary.	• Classrooms consist of 25 to 35 children without opportunity for teachers to place children in smaller classes when needed (except children diagnosed as eligible for special or remedial education). Children are grouped by chronological age whenever possible, although inconsistencies arise due to dates of birth and the retention of some children. Children are tracked into homogeneous groups according to ability level.
	• Five- through 8-year-old children are assigned a primary teacher and remain in relatively small groups of 15 to 25 because so much of their learning and development is integrated and cannot be divided into specialized subjects to be taught by special teachers. Specialists assist the primary adult with special projects, questions, and materials.	• Departmentalized settings and groups of 80 or more children with a team of teachers are common. Teachers teach their special areas of interest and what they know best in isolation from one another and children rotate among different teachers.

	APPROPRIATE Practice	INAPPROPRIATE Practice
Grouping and Staffing (continued)	• Care is taken to integrate special needs children into the mainstream classroom socially as well as physically. Care is taken to avoid isolating special needs children in a segregated classroom or pulling them out of a regular classroom so often as to disrupt continuity and undermine their feeling of belonging to the group.	• Special needs children are nominally assigned to a regular class, but almost all their instruction occurs with special teachers elsewhere in the building. These children have only a vague sense of what is happening in their regular classroom and the classroom teacher spends little time with them because she assumes they are getting intensive treatment from the special education teacher. Special needs children may be seated together in a designated area of their regular classroom.
Teacher Qualifications	• Teachers are qualified to work with 5- through 8-year-olds through Early Child Education degree programs or Elementary Education degree programs with a specialty in Early Childhood Education that includes supervised field experience with this age group and required coursework in child development and how children learn, in integrated curriculum and instructional strategies, and in communication with families.	• Elementary or secondary teachers with no specialized training or field experience working with 5- through 8-year-olds are considered qualified because they are state certified regardless of the grade level for which their coursework prepared them.
	• Ongoing professional development opportunities are provided for primary grade teachers to ensure developmentally appropriate curriculum and instruction and to help teachers become more competent, confident, and creative.	• Teachers participate in continuing professional development to maintain certification although development opportunities are not necessarily related to the primary age group.

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